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INDUSTRIAL ADVISORY MISSION TO ASSIST IN THE PREPARATION OF THE 1971-1976 INDUSTRIAL DEVELOPMENT PLAN

Bangkok
7 October 1970 .

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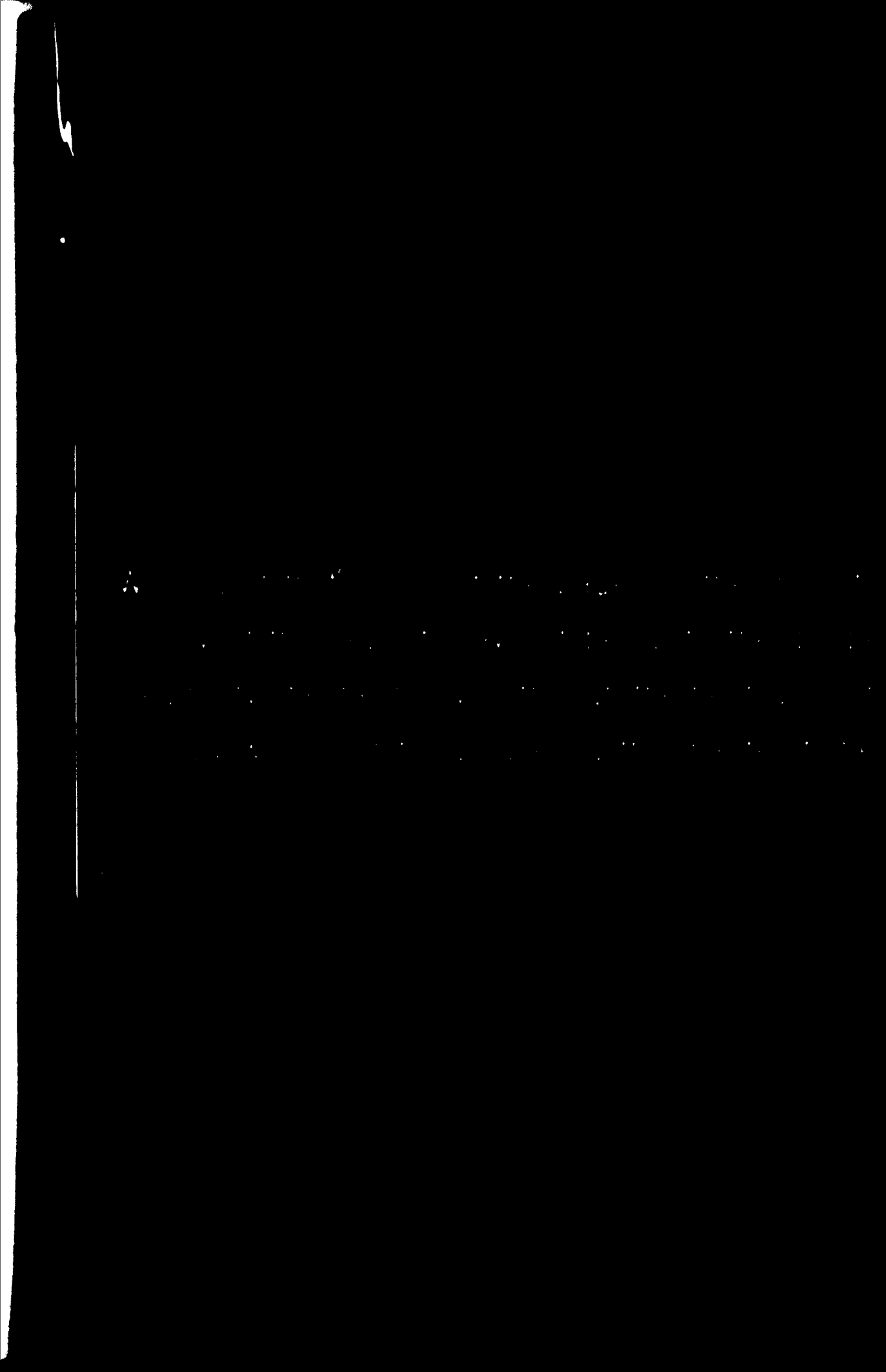

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Introduction

The 1971 - 1976 Development Plan is presently being prepared by the National Economic Development Board (NEDB). The Industrial Economics and Planning Division (IEPD) of the Ministry of Industry is responsible for the preparation of the section related to industrial development. A Working Group of the NEDB, chaired by the Director of the IEPD and composed of members of the Ministries of Finance and Economic Affairs, the Board of Investment, the Bank of Thailand, the Department of Labour and the Association of Thai Industries outlined a brief version of the Industrial Development Plan.

At this stage UNIDO responded to a previous request of the Government of Thailand to send an Industrial Advisory Mission to review the past work and to draw up new guidelines on how the Working Group should proceed in the future. The mission was asked to deal particularly with problems of target setting at macro and micro levels, the identification of strategic industries, the elaboration of specific policies, and the assessment of future export-oriented industries. Additionally, the mission was supposed to help the Government in the formulation of a request for UNDP/SF assistance for the establishment of an "Industrial Information and Studies Centre".[1/] Accordingly, the mission was composed of the following members:

Mr. Werner Behrens, UNIDO, Project Director
Mr. Jaroslav Navratil, UNIDO: project preparation
Mr. Partha Dasgupta, Trinity Hall, Cambridge: project (industry) evaluation and industrial policies
Mr. Benjamin Toren, Ministry of Industry, Jerusalem: industrial policies and sectoral programming
Mr. Jean Salmona, Observatoire Economique Méditerranéen, Marseille: data banks and information systems.

During its stay in Bangkok, the mission had discussions with officers of various Government and private agencies (see Annex 3). Their readiness

1/ Working title, subject to change

to answer our questions helped considerably to draw up the conclusions of this report. The mission thanks all people met for their kind assistance, in particular Dr. Vichitvong, Director of the IEPD of the Ministry of Industry. The assistance rendered by UNDP facilitated the completion of the mission.

The report is submitted to the Government of Thailand as a preliminary draft of the Industrial Development Plan 1971 - 1976 for further discussion. Additional assistance will have to be provided by UNIDO as follow-up.

(1) Summary

1. At the time of the inauguration of the Third Development Plan of Thailand the industrial sector is much stronger than it was five years ago, though very far yet from its normal role in an industrialized economy. The plan indicates that a substantial additional increase of industry in the economy can be expected. The share of manufacturing industries in GDP will rise accordingly from 15.8 in 1968 to 21.7 in 1976. It also spells out the main needs of the plan in terms of capital, manpower and infrastructure investments necessary for such growth. Based on preliminary assumptions, an increase in value added of 24 billion Baht between 1968 and 1976 would call for a total investment in fixed assets of 23.6 billion Baht within the five years of the plan, and an estimated addition to industrial employment of some 400,000 workers.

2. In spite of the satisfactory over-all increase in output, the direction of this additional growth poses a dilemma. Thailand is gradually moving into a balance of payments problem which tends to indicate that industry will have to carry an increasing share of this burden. While most industrial development in the past was oriented towards import substitution, this is expected to become more and more costly in terms of needed protection. The only feasible answer to this problem points, therefore, in the direction of industrial exports. Exports may be much more difficult to develop as producers have to compete on world markets without convenient customs barriers to protect them. On the other hand, the export sector offers a larger potential for economically feasible investments with a more efficient use of Thailand's scarce technical, financial and entrepreneurial resources.

3. Accordingly, the Third Development Plan for industry proposes a drastic change in policy to make this dynamic increase in exports possible. Policy adjustments would be necessary in the field of investment promotion, fiscal policy, credit policy and a wide range of infrastructure services for the industrial sector which are essential for such an export programme.

4. Exports of manufacturing industries can be expected to rise in a cumulative process, the fruits of which would start to be felt in the Third Plan period but would show more meaningful results in the Fourth Plan period. The implementation of proposed policy changes would increase annual exports by 360 million baht in 1976 as compared to a modest rise expected in this year without many changes in policy. In 1981 the impact of these policy changes is expected to raise exports by 2,500 million baht.

5. The Ministry of Industry would therefore like to commend this plan for implementation as it seems to offer the best means to gradually answer the Kingdom's balance of payments problem. Needed policy decisions should be taken now before reserves run down to a crisis level which will then leave no other choice than to discontinue the development of the economy.

Chapter 1

Industrial Development in the Second Plan Period

6. Surveys on recent trends in Thai industrial Development will be added at a later stage. Drafts of such surveys for the main branches of industry have been prepared and will be revised and included in this Chapter. (See Annex 1 for a proposal for the organization of additional work in finalizing this plan within the coming six months.)

7. The proposed Third Plan for the development of manufacturing industries relies heavily on, and is co-ordinated with the plan for the whole economy. Projections have been prepared by the NESDB and will take into account proposed revisions by the Ministry of Industry.

8. The scope of the plan for the development of Thai manufacturing industries will be limited to the classification of sectors accepted by the National Statistical Office (NSO), by most other countries, and by international organisations (e.g. the International Standard Industries Classification). This framework corresponds to the group of industries under the jurisdiction of the Ministry of Industry.[1/]

1.1. Current Inadequacy of Data

9. The statistical data on industry presently available for governmental planning and private decision-making are far from being sufficient with regard to both their amount and quality. Various government agencies are using different classifications resulting in inconsistent and uncomparable data.

1/ It may be useful to mention that this classification includes industrial processing of local raw materials or agricultural products but excludes mining, quarrying and agriculture. It includes repair activities such as repair of transport and electrical equipment, clothing and shoes, but excludes services such as laundries, it includes industries of all sizes and forms of organisation even without employees. For statistical reasons enterprises which are engaged in different industrial activities with no separate data for each are included in their main activity. (A dry cleaner who also mends clothes will be classified as services, not as repair in the apparel industry.)

Up to now very little has been undertaken to co-ordinate these efforts in order to enlarge the statistical basis for governmental planning and policy preparation. This deficiency should particularly be kept in mind when we later deal with problems of projected aggregate and manpower requirements. For the time being data are collected by the following institutions:

Ministry of Industry: Industrial register. This register covers all industrial establishments employing more than seven workers or utilizing machinery with more than two horse powers. This register is not complete, still many firms are believed to escape the application for licences. In the future, the Industrial Register will be up-dated every third year.

Department of Labour: Annual Survey on Manpower and Employment. Each year a list of all establishments employing more than ten workers is published. Establishments employing less than ten workers are also subject to the survey, but their listing is not complete.

National Statistical Office: - 1964 Industrial Census
- Annual Survey of Industry (enterprise level). The latest available data originate from the 1966 survey, which was quite incomplete.

Customs Department: Annual publication of import and export entries at the enterprise level. Quite good coverage of all exporting and importing firms.

Board of Investment, Bank of Thailand, I.C.: Many data of promoted firms are available, however, frequently only as estimates.

Revenue Department: Annual collection of data on the enterprise level and monthly collection on the establishment level. These data are not at all used by other Government agencies. Presently the Revenue Department is processing the 1966 annual revenue figures. This indicates very well of what little use they can be for planning purposes.

10. Currently, about 50,000 industrial establishments are registered with the Ministry of Industry, out of which some 20,000 are rice mills. The data available on all those establishments are still rather insufficient particularly with regard to smaller firms. For instance, the number of rice mills seems to exceed the figure of 20,000.

11. In order to remedy this situation it would be possible to plan new surveys or censuses. Unfortunately, they are rather expensive, difficult to implement and process and usually incomplete. Besides, it would require strong suasion to convince manufacturers that they again have to fill out new forms and questionnaires.

12. However, the Industrial Development Plan deals mainly with larger firms, so that the effects of Government policies are more or less limited to these firms. As far as the public and private needs of data are concerned, it will be sufficient to have complete data on establishments employing more than ten workers, and sample data on the others with estimates of the number for each branch.

13. The 1964 Industrial Census revealed that establishments with ten workers and more represent two per cent of the total number of workers, and stand for 40 per cent of the total industrial sales. This picture was even accentuated during the most recent past. Any new action to provide industrial data must, therefore, aim at a complete coverage of all establishments employing ten workers and more. It mainly should use administrative routines as sources of information, particularly those of the Ministry of Industry, the Customs Department, the Revenue Department, and the Labour Department.

14. In this connexion it should be mentioned that private firms frequently do not co-operate with Government agencies in providing accurate industrial data. Unfortunately, it cannot be expected that private companies would render any better information to the NSO, even if the NSO keeps it confidential. It, therefore, is more important to look for co-operation with NSO mainly with regard to the supply of skilled statisticians and computer facilities, and advise on the choice of definitions and classifications, than to let the NSO organize new industrial surveys and censuses. Attention should be drawn to the fact that many data asked for in the Annual Industrial Survey of the NSO are also requested each year by the Revenue Department. Obviously, it would be better to improve the questionnaire of the Revenue Department than to try to get the data by a special survey, which would be much more incomplete.

15. In order to contribute to the solution of the data problem, it is proposed to create the "Industrial Information and Studies Centre"1/. The Centre should be composed of a Data Bank which collects, processes and disseminates the data of various Government agencies, an Economic Studies Unit which assists in industrial planning and the preparation of Government policies and decision-making, and a Library Unit. The establishment of the Centre should be assisted by UNDP Special Fund. For details on the Centre and on the assistance requested see Annex .

1.2. Survey of Current Industrial Policy

16. It has consistently been the Government's view that the actual planning and execution of industrial projects should be left to the private sector. Concomittant with this has been the Government's policy of creating a favourable environment for industrial investment, in the form of fiscal and monetary aid and the creation of a sufficient infrastructure which is required for industrial development.

17. Toward this end the Promotion of Industrial Investment Act of 1962 (with some minor amendments in 1965 and 1968) aimed at giving considerable incentives to investments specifically in those industries that were deemed as being conducive to a desirable growth of the Thai economy.

18. Under the incentive scheme the Government offers industries promoted by the Board of Investment a full exemption from duty on imported capital goods, except those that are locally produced. Initially, a full exemption from duty was also granted on the importation of raw materials, but in view of the Government's explicit desire to encourage the use of local raw materials, this exemption is now being lifted. Today the maximum raw material exemption is only one third and the Board of Investment grants it only in justified cases. Finally, a promoted industry to date is exempted from income tax for the first five years of operation.

19. It has been the policy of the Government of Thailand to encourage foreign investment. Guarantees against nationalization, full freedom for repatriation of profits, and the incentives given to promoted industries have ensured a vigorous inflow of foreign capital. There is no question that such

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governmental encouragement to private investment has led to the rapid development of manufacturing in Thailand during the last eight years. Manufacturing has grown at an average annual rate of 12.7%. The industrial promotion system has assisted in the total investment of some $300 million in manufacturing, about one third of which is foreign capital.

20. It was, however, the case that the Government's choice of promoted industries lay almost entirely in import substitution. Promoted firms were entirely confident in not merely being exempted from tariff payment for imported capital, etc. but at the same time in being protected rather heavily from foreign competition for their finished product. Tariffs range from five to 80 per cent on industrial goods and raw materials. The average tariff rate is quite high in Thailand, being about 30 per cent and the degree of protection for promoted import substituting industries is at times as high as 70 per cent. Very little has been done to date in forming a systematic approach to promoting export industries.

21. The foregoing brief sketch of the industrial policy of the Government of Thailand is merely to set the stage for the kind of considerations that are likely to be relevant for the Third Five Year Plan.

Chapter 2

Planned Output and Input Targets

2.1. Planned Output Targets

22. In 1968 the National Accounts Division of the NPDB prepared detailed data of some 150 industrial sub-branches and major products. As a result projections for 1976 could be made in similar detail. Thus the needed growth in industrial output has been estimated in substantial detail on the basis of 1968 value added bench-mark figures. Demand functions have been estimated on the basis of past trends and future expected changes in income. The processing of agricultural output was assumed to increase in line with the expected increase in raw materials, bearing in mind demand on foreign and local markets. Cement for the local market was assumed to rise in line with investments by the private sector. The production targets of eleven main sub-branches of the manufacturing sector are shown in table I below. Figures are also given for 1971, the base year of the plan. Generally speaking, the same trend was assumed for the actual plan period 1971 - 1976 as for the 1968 - 1971 period.

Table 1

Production Targets for the Manufacturing Industries 1968 - 1976

(Million Baht of fixed 1968 prices)

Branch	Value Added 1/ (in million Baht)				
	1968	1971	1976	1971-1976	Annual rate of increase (per cent)
3.1. Rice Milling	1,9[illegible]	2,11[illegible]	2,[illegible]55	445	3.9
3.2. Food processing except rice	2,0[illegible]5	2,13[illegible]	2,600	47[illegible]	4.1
3.3. Beverages, Tobacco, and Snuff	2,971	4,100	6,800	2,700	10.7
3.4. Textiles and Apparel	2,2[illegible]2	3,2[illegible]0	5,900	2,700	13.0
3.5. Wood and Furniture	1,109	1,700	3,600	1,900	16.2
3.6. Paper and Printing	515	6[illegible]0	1,[illegible]50	370	9.1
3.7. Leather products	42	54	81	27	8.4
3.8. Rubber products	155	197	305	108	8.6
3.9. Chemical products and Petroleum refining	1,932	2,[illegible]00	4,950	2,050	11.3
3.10. Transport Equipment	1,146	1,562	2,580	1,018	10.6
3.11. Other processing	2,3[illegible]	4,067	10,249	6,182	20.3
3 Total	16,378	22,7[illegible]	40,67[illegible]	17,970	12.4

Source: NEDB

1/ Production is measured by value added defined in terms of contributions to gross domestic product.

23. When these production targets are compared to projections of gross domestic product for the economy, the following picture emerges:

Table II

Manufacturing as per cent of GDP 1968, 1971 and 1976

	1968 (million ฿)	1971 (million ฿)	1976 (million ฿)
Manufacturing	16,378	22,7[illegible]	40,67[illegible]
Gross domestic product	1[illegible]3,214	129,[illegible]19	187,167
Manufacturing as per cent of total GDP	15.9	17.5%	21.7[illegible]

24. This development indicates a substantial increase in the share of the manufacturing sector in the national economy, and may be regarded as typical of an industrialization process in developing countries.

2.2. Planned Input Targets

2.2.1. Investments

25. Investment needs have not yet been estimated for the various industries. At the present stage only an aggregate estimate for fixed capital formation by the private sector [1/] has been made assuming that it would change in line with the expected increase in exports. In the past the best fit between the two series has been obtained by introducing a one year lag for investments behind exports. The same assumption was made for the projection of investments during the Third Plan period.

1/ The only data available is an aggregate figure for imports of industrial machinery and appliances for the years 1960-1968. The total for 1968 is 3.458 million Baht as compared to 2.551 million Baht in 1966.

26. This aggregative approach is not satisfactory as it does not take into account differences between industries, nor does it yield an estimate for the manufacturing sector separate from housing, services, etc. Bearing in mind the fact that production (i.e. value added) has been projected in greater detail, it would seem that a better estimate of investments in manufacturing might be obtained through industry by industry capital-output ratios (or actually capital-value added ratios).

27. Capital-value added ratios will have to be developed at a later stage (see Annex 1). As a rough first approximation these ratios have been taken from the 1963 Industrial Census for enterprises employing more than ten workers. This must be regarded as deficient for a number of reasons: first, because the Census did not obtain reliable results, second, because the Census estimated fixed assets at depreciated book values of 31 December 1963 (for capital-output ratio estimates replacement values or at least original book values should have been used), third, because production techniques do change over time and the "large size" industry group of 1963 is not representative of investments expected in the Third Plan period.

28. It is for these reasons that the following calculation is meant not as an estimate of investment needs but rather as a mental exercise.

Table 1.

<u>Investments in Manufacturing Industries 1972 - 1976</u>

(in million Baht)

	Branch	Capital-Value added ratio (1963)	Increase in value added (1972-1976)	Estimated increase in fixed assets (1972-1976)
		(1)	[illegible]	[illegible]
3.1.	Rice Milling	[illegible]	[illegible]	1,[illegible]
3.2.	Food processing except rice	[illegible]	[illegible]	1,1[illegible]
3.3.	Beverages, Tobacco and Snuff	[illegible]	[illegible]	[illegible]
3.4.	Textiles and Apparel	[illegible]	[illegible]	[illegible]
3.5.	Wood and Furniture	[illegible]	[illegible]	[illegible]
3.6.	Paper and Printing	3.52	[illegible]	1,[illegible]
3.7.	Leather products	1.74	27	47
3.8.	Rubber products	.29	10[illegible]	31
3.9.	Chemical products and Petroleum refining	1.32	2,[illegible]5	[illegible]
3.10.	Transport Equipment	[illegible]	1,[illegible]	[illegible]
3.11.	Other processings	1.11	[illegible],18[illegible]	6,582
3	Total	1.31	17,97[illegible]	23,5[illegible]

29. Investments needed to increase output over the plan period are estimated at 23.6 million Baht. This figure still must be corrected for two reasons: first, because part of the fixed assets will have to be discarded and replaced during the plan period so as to maintain present levels of output, second, there is a lag in output generated by investments due to the gestation period of investments. Investments made before the beginning of the Third Plan will bear fruit during the plan period. On the other hand, investments made at the end of the Third Plan period will bear fruit only during the Fourth Plan period. The above estimate, therefore, is correct only if these two discrepancies are roughly equal. In a period in which investments are rising, this equality cannot be expected, and investments will have to be larger than implied by capital output ratios. Otherwise, industrial production may level off at the beginning of the Fourth Plan period.

[illegible] It is not surprising that until now financial institutions have served [illegible] trade rather than the manufacturing sector. Nor is it surprising that in an economy based predominantly on family enterprises, financial institutions feel more secure with guarantees based on real estate and personal guarantees from rich families, than with much more abstract guarantees based on profit potential of an industrial [illegible]. A newcomer to a commercial bank, therefore, is not expected to find his needs answered for the financing of a new enterprise. This situation makes the financing of industry more difficult than that of trade, and it renders the potential of industrial entrepreneurship quite ineffective in many cases. [illegible] offered by the Ministry of Industry to small-scale enterprises [illegible] this need, but it is difficult to find substantial funds for such purposes. Mr. Alek [illegible] studied this problem some time ago and proposed to establish a National Investment Consortium which should function as a government-sponsored trust fund carrying out its business in co-operation with commercial banks. It may also be worthwhile to consider the possibility to add a guarantee programme for credits of shorter duration carried out through private banks.

[illegible]. Manpower

31. Estimates of manpower needs are not much more advanced than those of investments. The Manpower Planning Division of NEDB is now organising the work in this field, but results can be expected only in a few months' time. At present only rough calculations have been done by Mr. van der Laan (ILO) mainly for methodological reasons and only on an aggregate basis. The methodology used for these calculations has been reviewed by the above Division and the Department of Labour. It must be clear, however, that the only aim in presenting these calculations at so early a stage is to discuss ways of improving such estimates for the Third Plan.

I. The bench-mark figure for industrial employment is about 710,000 (including self-employ from eleven years up). It is based on the 1969 Manpower Survey and seems to be the best basis according to the NEDB, the Department of Labour and Mr. van der Laan. Updating to the plan period may be done with an estimated annual increase of 20,000 or to 750,000 in 1971.

II. Planned increase in output for industry is 12.4 per year between 1971 and 1976. This rate is being used also as working assumption for the period 1976-1981. Here it may be noted that educational planning should utilize ten-year instead of five-year projections.

III. Output per industrial worker has tentatively been assumed to increase annually by 4.5 per cent according to the ILO Case Study on Thailand prepared for the Asian Employment and Training Projections in 1969.

IV. These assumptions would yield the following estimates:

Table IV

Estimated Annual Increase in Value Added and Employment

	1971	3rd Plan	1976	4th Plan	1981
a. Planned annual increase in value added in %		12.4		12.4	
b. Estimated annual increase in value added per worker in %		5.5		5.5	
c. Estimated annual increase in employment in %		7		9	
d. Estimated number of workers (in Thousands)	750		1,150		1,750

V. **The ILO Case Study of 1968 presents in table 18.2 an analysis of the occupational structure in manufacturing for 1963 (see also table V). As a first approximation of an estimate of future needs of industrial workers by occupation, it can be assumed that the same structure would prevail for the workers to be added to the manufacturing sector between 1971 and 1981. However, this calculation abstracts not only changes in structure between 1963 and 1971 but also additional needs for workers due to retirement, improvement of the existing manpower, and needs for retraining.**

Table V

Manpower needs by occupation in industry 1971 - 1981

	Percentage distribution (1963)	Number of Workers (000) 1971	1976	1981	Total increase 1981 over 1971
Net inc. of workers	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Professional	1.[illegible]	1[illegible]	16	24	14
Administrative	[illegible]	[illegible]	[illegible]	3[illegible]	19
Clerical	[illegible]	[illegible]	[illegible]	[illegible]	39
Sales	[illegible]	1[illegible]	[illegible]	3[illegible]	22
Miners and quarrymen	.1	[illegible]	[illegible]	[illegible]	1
Workers in Transport and Communications	1.[illegible]	12	[illegible]	[illegible]	16
Craftsman	[illegible].1	6[illegible]1	1,013	1,543	881
Services	.[illegible]	[illegible]	[illegible]	14	8

VI. Manpower needs by levels of education are much more difficult to estimate. An initial attempt has been made by Mr. van der Laan for the Thai economy as a whole (Memorandum on Education-occupation of 9 October 1969). This division of occupations by classes of educational levels includes all workers with less than 12 years of education in one category (see class "D" in table VI). At a later stage this group may further be divided into unskilled and semi-skilled workers. The net addition of workers by occupation can be combined with the percentage distribution by educational level to yield the following estimate. (See table on page 2 of the above-mentioned memorandum).

Table [illegible]

Manpower Needs in Industry by Educational Level 1971-1981 (in [illegible])

	Total	Class A		Class B		Class C		Class D	
		%	No.	%	No.	%	No.	%	No.
Total	[illegible]		[illegible]		[illegible]		[illegible]		[illegible]
Professional	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–	–	–
Administrative and Clerical	[illegible]	[illegible]	[illegible]	–	–	[illegible]	[illegible]	[illegible]	[illegible]
Sales Workers	[illegible]	–	–	[illegible]	[illegible]	[illegible]	[illegible]	–	–
Service and Transport	[illegible]	–	–	–	–	[illegible]	[illegible]	[illegible]	[illegible]
Craftsmen (manual)	881	–	–	–	–	[illegible]	[illegible]	[illegible]	793

Note: Class A Academic or equivalent

Class B Technical (2-3 years beyond secondary level)

Class C Secondary school or equivalent

Class D Below secondary.

12. Similarly as in the case of investment estimates the analysis for manpower projections is made on too aggregate a level. Therefore, based on the 1964 Industrial Census, value added per employee has been calculated again for large size establishments of eleven main industrial branches. It was assumed that between 1964 and 1976 productivity has risen annually by 3.5 per cent which would yield the following calculations.

Table [illegible]

Projected Increase in Employment (1971 - 1976)

(labour productivity rising at 3.5 per annum)*

Branch	Value added per worker (1963) (in Baht) (1)	Projected increase in value added (1971-1976) (in mill.Baht) (2)	Increase in employment * (3) = (2) (1) x 1.57
Rice Milling	17,1[illegible]	445	16,[illegible]
Non-rice Food Processing	[illegible],5[illegible]	47[illegible]	14,[illegible]
Beverage, Tobacco and Snuff	10[illegible],[illegible]	[illegible],7[illegible]	17,2[illegible]
Textile and Wearing Apparel	10,5[illegible]	[illegible],7[illegible]	163,7[illegible]
Wood and Furniture	1[illegible],5[illegible]	1,[illegible]00	78,30[illegible]
Paper and Printing	1[illegible],90[illegible]	37[illegible]	12,500
Leather Products	25,700	27	700
Rubber Products	72,300	10[illegible]	1,000
Chemical Products	34,50[illegible]	[illegible],05[illegible]	37,900
Transport Equipment	40,50[illegible]	1,018	15,900
Other Processings (including Electrical Machinery,etc.)	3[illegible],700	6,182	128,7[illegible]
Total	31,40[illegible]	17,97[illegible]	487,100

* At compound interest an annual productivity rise per worker of 3.5 per cent would imply an increase of 57 per cent in 12 years. $(1.035)^{12}=1.57$.

33. It will be noted that this estimated net addition to employment exceeds the aggregate estimate by some 87,000 workers. This difference may again be explained by the fact that new industries may be expected not only to rise in over-all productivity, but also to include larger enterprises which use (by technical necessity, not by economic interest) more capital-intensive methods. At a later stage it may be useful to apply the 1969 Sample Survey of Industries in order to base the two calculations on a more up-to-date industrial structure.

34. Labour intensity may briefly be discussed here as a matter of industrial strategy. With a very low level of wages for unskilled labour it may well be assumed that unskilled labour intensive industries may turn out to yield the highest comparative advantage and economic priority to the economy. It may further be assumed that wherever possible, an unskilled labour intensive production process will be used. On the other hand, once the industry and the technology have been selected and the investment has been made, the minimum number of workers should be used for maximum efficiency.

35. A last point in this respect may briefly be touched upon in terms of the quality of the educational system. In most countries this question is not given enough attention, as a very significant improvement in the levels of industrial skills can be achieved by changes in the system, in the selection of students at various levels, and in the curriculae of each institution. Special attention should be given to vocational education at the secondary level, all the more so as substantial funds are being invested in this programme. Such a consideration of the structure of the educational system should be undertaken with employers and all agencies concerned.

3.2.3. Regional Aspects

36. The present distribution of industrial establishments among the different districts of the Kingdom reflects an excessive concentration in the Bangkok-Thonburi area. No precise estimate can be made on the regional distribution of additional investments and employment in the Third Plan period. However, if existing development policies are assumed to be unchanged in this respect, no improvement in the situation during the next five years can be expected. On the contrary, the concentration in a single area may become even somewhat more pronounced if the North Eastern Region can serve as an example. The team studying this region estimated the annual growth of the manufacturing sector at some 10 per cent as compared to 12.4 per cent of the national sector. This projection takes into account an increase in the processing of local agricultural products and other raw materials, local repairs and other locally-oriented industries. It also implies that the North Eastern Region will ship a growing amount of raw materials and foodstuffs to Bangkok for processing and have them returned for consumption.

37. Capital and manpower are not the only pre-conditions for a successful execution of an industrial development plan. A variety of infrastructure investments have to be carried out as well. Detailed estimates of each of these factors are now being made by the NEDB with the assistance of the different agencies concerned. Only two major elements should be mentioned briefly. Industrial development depends on the cheap supply of power and on adequate port facilities. No conclusive view can be offered without further study, however, many people feel that a deep water port will soon become indispensable. Similarly other needs have to be discussed, such as the telecommunication system, inland transport, etc.

2.3. Infrastructure-Service Projects

38. In order to achieve the targets to be set up by the Third Plan and in order to support the policies outlined below, the Government is in need of industrial infrastructure-service projects. In the past, various such projects have been set up with UNDP and bilateral assistance. In an economy like that of Thailand, the primary objective of these projects is to offer selected kinds of services to the private sector of the economy. In the future this work should be extended even further, paying particular attention to the promotion of export-oriented industries, the major target of the Third Plan. Therefore, the Government has to allocate sufficient funds for infrastructure-service projects, particularly in terms of well-trained personnel capable of continuing the work initiated by foreign assistance.

39. With regard to industry, the following existing projects require appropriate budgetary support and should therefore be included in the Plan:

- Technological Research Institute
- Thai Industrial Standards Institute
- Industrial Research and Training Centres for specific industries
    a) Ceramics Research and Training Centre
    b) Fibre Experimental Centre
    c) Sugar Institute
- Small Industries Service Institute
- Office for Small Industry Loans
- Industrial Product Design Centre
- Thailand Management Development Centre
- Institute of Food Research and Product Development.

40. In addition to these existing service projects, a considerable number of other projects have been identified. Their development should proceed along the policy lines laid down in this report. The comprehensive technical assistance programming of UNIDO which is proposed to be undertaken within the next month by Mr. Wali, UNDP Regional Representative a.i., and Mr. Rasa-Erioson, UNIDO Industrial Development Field Adviser, should evaluate and prepare the following projects:

- Industrial Free Zone for export-oriented industries
- Textile Industry Institute
- Marketing Organization for Industry
- Packaging Design Centre
- Food Industry Service and Development Centre
- Financial advice on small-scale industries
- Regional Industrial Potentiality Survey.

Of course, the Industrial Information and Studies Centre[1/] has also to be considered in the budget.

1/ Working title, subject to change

Chapter 3

Industrial Export Promotion

3.1. Export Targets 1976 and 1981

41. Exports, when projected together with other balance of payments components by the NEDB, revealed a mounting problem in terms of a shortage of foreign currency. This problem is alleviated at least for the time being, because some more foreign currency reserves can still gradually be depleted. It, therefore, seems that the economy still has time to prepare for this situation.

42. The two possible answers to such a situation are either more import substitution or development of industrial exports. While a limited amount of additional import substitution may be feasible, most of the existing investment opportunities in this field have either been exhausted or the economic cost for further investments in those lines is bound to be too high. It follows that Thailand should pursue the second route and develop industries for exports.

43. Industrial exports are a difficult job and the fact is that marketing on the local market is by far easier than competition on foreign markets. Industrial exports were negligible until now, and if nothing will be done about them, they may be expected to rise only moderately in future. On the other hand, if new assistance is forthcoming to this sector, quite meaningful results could be achieved. This argument could be supported with a few figures.

Table VIII

Industrial Exports of Thailand 1969-1976-1981

(Excl. tin, in million Baht)

Industrial exports 1969	22[illegible] Million Baht
Assumed rate of growth 1969-1981 (without policy changes)	6.6 1/
Assumed industrial exports 1976 (without policy changes)	1,440 Million Baht
Assumed industrial exports 1981 (without policy changes)	2,[illegible]00 Million Baht
Planned rate of growth 1969-1979	10,[illegible]
Industrial exports 1976	1,800 Million Baht
Planned rate of growth 1976-1981	20%
Industrial exports 1981	4,500 Million Baht
Net improvement in industrial exports with change of policy - 1976	360 Million Baht (18 Million US$)
- 1981	2,500 Million Baht (125 Million US$)

44. Table VIII indicates that if an export-oriented policy is actively followed in the industrial sector, a moderate improvement in the balance of payments can be expected by 1976, while substantial results can be anticipated during the Fourth Plan period. It is strongly felt that such a structural change in the manufacturing sector will create a sound basis for the long-run process of industrialization. It would, therefore, seem to suggest one of the most important elements underlying the Third Plan.

45. It has to be kept in mind, however, that such an export programme cannot be achieved free of cost. To the contrary, it is felt that if there exists no willingness to bear such costs - talk without deed cannot do the job. The programme for the promotion of industrial exports should, therefore, be considered by the Cabinet as a major policy option. If additional exports by the industrial sector are deemed advisable, then decision must be taken along the lines proposed in this plan.

1/ 6.6% p.a. is the estimated annual rate of increase in all commodity exports, and is assumed to prevail in industrial exports if no policy changes are implemented.

3.2. Policy Measures for Export Promotion

46. Subsequently, we discuss in some detail the highly inter-related issues regarding the structure of indirect and corporate taxation and the consequent channelling of investible resources into industry.

47. We are strongly of the opinion that in a free-enterprise economy such as Thailand a serious attempt must be made by the Government to ensure that, at least in the long run, producer prices are brought more or less in line with international prices. This is to ensure that private resource allocation exploits the comparative advantages that the economy enjoys. The essential point to recognize is that one does not know in advance where comparative advantages for Thailand lie. Despite this above truism, the policy in Thailand has, until quite recently, been to select in advance a set of import substituting industries and then to publicize them as being eligible for Government promotion. Such industries have then been established under rather heavy protection, the rate of protection being sometimes as high as 80 per cent. The emphasis to date, therefore, has been on manufacturing industries that substitute for imports. Very little has been done to promote industries with export potentialities.

48. This unbalanced approach to industrial promotion is increasingly recognized by the Government. The question then arises as to what set of guidelines can be worked out for the coming years which will ensure a better allocation of resources for Thailand. Towards this we shall first go into the kind of procedures the Government should immediately follow in selecting industries in which investment should be encouraged. We shall then go into the considerations that are relevant for an optimum tariff-subsidy policy which the Government ought to aim at establishing in the course of the next few years. How long it might take to change the tariff-subsidy structure no doubt depends on the number of steps to be taken. Nevertheless, it is always worth-while to bear in mind what the long term goal ought to be. This in itself may help to hasten the required changes.

49. We have already noted that excessive protection of import substituting industries in Thailand has undoubtedly affected the development of export-oriented industries. The immediate policy of the Government shall, therefore, be the promotion of such export-oriented industries. That is to say, in view of the Government's legitimate concern about the long run balance of payments situation, incentives should now be directed towards exports. Towards this our recommendations would be: (1) the introduction of a full draw-back arrangement rather than the seven-eights draw-back as practised at present; (2) the introduction of bank guaranteed bills instead of payment in cash for imports used for exports with later reimbursement; (3) the introduction of a draw-back system on indirect tax elements besides the tax on direct imports.

50. A further measure will be required since it must be admitted that costs are involved in entering foreign markets. There is also an element of uncertainty for local manufacturers who may feel threatened by foreign competition in foreign markets. It may, therefore, be desirable in principle to introduce a fourth measure of incentive in the form of export subsidies. This should seriously be considered, though at a later stage in the process. Currently, import substituting industries are being heavily protected. The best solution to this difference in approach would be a gradual lowering of protective tariffs. This policy can clearly be implemented today in regard to new investments or new demands for higher protection of existing investments. The Board of Investment (BOI) can clearly dictate that no further promotion will be granted to import substitutes that require a degree of protection of more than a specified maximum level. The World Bank has suggested a maximum level of 20 per cent. A rate much higher than that would only continue the process of misallocation of industrial resources, because a flat rate of 20 per cent implies a much higher rate of effective protection. Only if this is not feasible within a reasonable period of time, some measure of protection for the export manufacturer will have to be provided, so that sufficient resources are channelled towards exports.

3.2.1. Evaluation of Promotable Projects and Industries

51. We now come to the question of the choice of projects (and hence industries) which should be promoted. We have already mentioned the general guidelines, e.g. that export industries in general should be encouraged and that import substitutes requiring anything more than 1[illegible] - 2[illegible] per cent protection ought not to be promoted. These general rules, however, do not provide the Government with as detailed a blue-print for action as would be desirable. For one thing, excessively costly export industries may be set up unless there is a procedure for screening out projects that are desirable for the economy as a whole. The point essentially is that given the fact that the structure of protection in Thailand is unlikely to be removable immediately, the BOI needs to have a procedure for syphoning out projects (and hence industries) that merit promotion.

52. We would rather strongly suggest to put much less emphasis on the normal procedure of choosing selected industries on an a-priori basis and then to promote these industries. For the selection of projects (which in turn entails the selection of industries) that one would want to encourage, the various governmental agencies should have a uniform and systematic procedure. The Board of Investment of the Government of Thailand has the best opportunity for evaluating projects, particularly since it is directly concerned with promoting industries and as such has the responsibility of syphoning out industrial investments that deserve incentives.

53. The procedure for evaluating projects that merit promotion is essentially very simple and does not require any additional information than that already provided in the application forms for promotion of the BOI. It is customary in the application forms to present the values of imported commodities and materials for the project under review in terms of the CIF import prices. This is as it should be in an appraisal based on real or social costs rather than private costs. But some materials and commodities may be domestically purchased for the project even though some quantities of these imports are imported into Thailand. For these items too, CIF prices should be used in their valuation wherever the difference is important. Moreover, the output of the project may be sold domestically under a tariff or sold abroad. If the output is a commodity that is actually taxed (and most projects are likely to be of this nature) the border price ought to be used in valuing the output of the project.

54. To spell out the procedure clearly, consider a typical project. It has an initial period when investments are made, sites cleared, buildings constructed, machinery installed and so on. This period is followed by the operating phase when material inputs are transformed with the help of labour to produce the output. The output flow may well increase initially for a few years until its target level is reached and then continued. The procedure we recommend is to split up such a commodity flow of a project into two broad categories

1) traded commodities which would include commodities purchased by the project from a domestic supplier but which can nevertheless be imported;
2) non-traded commodities (e.g. power, construction and unskilled labour).

55. The method is to value all traded commodities involved in the project in terms of international prices (border prices, i.e. CIF for imports and FOB for exports) and domestic prices for the non-traded commodities. If an input is purchased from a domestic producer but nevertheless some of this commodity is imported into the country (perhaps under heavy duty), it will still count as a trade commodity and it has therefore to be valued at its border prices. The logic behind this procedure is to distinguish between private costs and benefits and social costs and benefits. Valuing traded commodities at their border prices allows one to recognise that a tariff payment is simply a transfer of fund from the private sector to the government and is, therefore, not a cost to the society, unless one is willing to argue that social benefits of a Baht in the hands of the government is different from the social benefits of a Baht in the hands of the private sector. By the same token an export subsidy payment is simply a transfer of funds from the government to the private sector.

56. Once this revaluing of the inputs and output(s) of the project is done on the above basis, one calculates the investment outlay of the project as well as the net profits for a year when normal capacity is established. The calculation of the investment outlay will have to include interest on invested funds during the construction period wherever the implementation of the project takes time. For the calculation of the profits in a normal year one point has to be borne in mind: the profits should be gross of corporate profit taxes. The reason why the calculation of profits should include corporate profit taxes is clear enough.

Taxes are merely a transfer payment from one sector to another and do not reflect a cost to Thailand as a whole. Furthermore, costs should not include interest on loan capital.

57. The above procedure is direct and simple and needs no more information than is supposed to be supplied by the firms to the Board of Investment. The final step in the calculation is to divide the profit of the average year by the total investment outlay of the project. This yields an average social rate of return. Our tentative feeling is that if the social rate of return of a project is above 10 - 12 per cent, the project deserves promotion. The method outlined above will screen out all undesirable import substitute projects that would under the normal circumstances thrive under heavy protection. It will, at the same time, bring into prominance import substitute projects (and in turn industries) that are worth pursuing. Needless to say, the method would mainly encourage the desirable export industries. In particular export products that utilize domestic raw material would reveal high social rates of return.

58. The foregoing procedure of evaluating the average annual social rate of return of a project, using border prices for traded commodities, is a somewhat rough method although there is much to commend it. If, however, a proposed project is large and the net profits in its future are predicted to be fluctuating, the above simple rule will not suffice. A large project requires more care in its assessment. In particular, an assessment is required of the project's expected life span and the present value of all future net benefits which again have to be calculated on basis of world prices for traded commodities. The future flows of benefits may be discounted at a rate of 10%.

59. The organization of the work on applications for promotion may also be briefly considered. The procedure now followed, where economists and engineers review each application, is very commendable. It may even be considered to strengthen this procedure by having teams of engineers and economists prepare a co-operative evaluation report for consideration by the Secretary General of the Board of Investment and a revised version, on the basis of his comments, for consideration by all members of the Board.

60. The procedure may further be strengthened if lists of equipment which are being approved by the Board of Investment will in future be requested before the approval of promotion rather than afterwards. Basic issues (e.g. the steel industry) should first be discussed in ad-hoc inter-agency working groups, and it seems again that this procedure should be used to a large extent. Planning teams are proposed on each of the main industries included in the plan, such teams could serve also in order to prepare material for discussions in ad-hoc committees appointed by the BOI.

61. The foregoing recommendation of doing simple project planning is one that the Government can quite easily follow as a general rule to ensure that only the desirable industries are being promoted. There are essentially two considerations that neither the simple social rate of return rule nor the present value quite take into account. They are (1) locational planning and (2) the production of defence equipment. The point we would like to emphasize is that no general rule can be set for either. If the Government is seriously concerned about diversifying the location of industry in Thailand there will undoubtedly be some costs involved and added incentives will be required. For example, Government services may well need to be provided very cheaply to distant industrial sites. The social rate of return of a project may well be low and yet desirable for distributional considerations, if it is located in a far-off province.

62. In the same way, defence considerations may be brought in line with the process of industrialisation by a number of additional measures, most of which can be of mutual benefit to defence as well as to private industry. Most important in this sense is the procurement programme of the army as a potential source of ideas for import substitution. No country can expect to shift overnight from civil to defence products. Such a change can well be achieved if planned ahead of time and if the army is ready to co-operate in its implementation.

63. An additional question of promotion strategy relates to the use of excess capacity for exports. An enterprise that plans to sell import substitutes to an already saturated market will add very little social benefits, particularly if the industry enjoys economies of scale. It is doubtful whether the mere need for competition should be an argument in favour of promotion. In small and open

economies competition can come from imports. This entails, of course, special care to refrain from excessive protection in these industries. This situation changes drastically when export possibilities exist. No enterprise should ever be denied promotion if it can prove it can sell abroad at profitable prices. Foreign markets for manufactures are usually unlimited. In cases of doubt as to the feasibility of exports, promotion can be made conditional on exports. Tax reductions or tax holidays due within five years of production will then be granted only on proof of exports.

5.2.2. Structure of tariffs and subsidies

61. We now come to the second of our two considerations, the structure of tariffs and subsidies that we feel the Government should move towards in the further future. While we acknowledge that the structure of protection for import substitutes, as currently established, can hardly be changed drastically in the immediate future, some structural changes can clearly be brought about almost immediately. For example, the non-price measures of protection can certainly be lifted. Absolute prohibition of imports (e.g. on certain types of fertilizers) and import quotas (e.g. on tyres) have both been enforced in Thailand. And it is hard to see why. Such quantitative restrictions are, no doubt, enforced in many developing countries, but the argument there has generally been laid on balance of payments problems. Thailand, however, has not met such a situation, and one can easily hazard the opinion that she will not face such a situation in the foreseeable future; not, at any rate, if her future policies are sensible. Only recently Mr. Bela Balassa [1/] also raised the question of industrial protection in developing countries paying particular attention to the structure of tariffs, quantitative restrictions and subsidies. We fully support his view when he indicates that the possibility for quick action by the Government by way of quantitative restrictions is limited only to the case of sudden changes in the balance of payments situation, and that it is of little usefulness for long-run decision-making. The effectiveness of quantitative restrictions is frequently reduced by the administration of import licenses, the consequent growth of an unnecessary bureaucracy and the possible creation of inequities due to case-by-case decisions of Government officials. Furthermore, it should be considered that the assessment of the effects of these restrictions on the national economy is very difficult, since detailed price

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1/ Prof. Bela Balassa, John Hopkins University, Baltimore, Ind., works also as consultant for IBRD.

comparisons are missing. As a consequence, the whole planning process may suffer because appropriate criteria for assessing alternatives are missing.

65. On the contrary, the measurement of the impact of tariffs on domestic prices is much easier. Moreover, tariffs will not lead to case-by-case decisions but rather to automatic rules, they will lower the uncertainty for both producers and users and will increase the Government's revenue. These considerations indicate why it is important for Thailand to abandon quantitative restrictions and to rely on tariffs as a means of protection.

66. We indicated already that excessive protection of import substituting manufacturing industries has adversedly affected the exports of manufactured goods in Thailand. In order to increase exports of primary goods, one should provide differential incentives to traditional exports where a too fast increase would result in a lowering of the export prices and to those for which the country can augment production without any serious price changes. Such differential incentives should be provided by utilizing the basic exchange rate for non-traditional primary goods and a less favourable one for receipts from traditional commodity exports or in other words, levy an export tax on them.

67. The question now arises whether manufacturing industries should be protected because of specific social disabilities of a temporary nature. To deal with these questions, it is necessary to consider separately the reasons given for the specific disabilities or handicaps of the manufacturing operation. Such difficulties can best be remedied by specific action aimed at correcting a particular disability rather than by protection. To take the most important handicap, deficiencies in regard to economic overhead capital can be corrected by building ports and roads and by making available electricity and water at reasonable cost. Therefore, differential pricing of such public services could be used as a temporary incentive.

68. As regards the general advantages of manufactaring over other economic activities we have nothing to add over what the Government already recognises. For a variety of reasons, the Government of Thailand has found it desirable to embark on a programme of industrialisation. It appears reasonable to say that such a programme is certainly advantageous through external economies such as

labour training or the encouragement of the expansion of other industries which do not affect the profitability considerations of producers and yet are benefitial for the economy.

69. Moreover, the traditional infant industry argument should also be considered in this connexion. This argument suggests that the domestic producer prices of manufactured goods ought not to be entirely in line with world prices but that measures are needed to promote manufacturing industry in Thailand. Promotion is to be understood in a way that it includes both protection of production for domestic markets (import substitution) and assistance to firms exporting manufactured goods. Towards this, we strongly recommend that in the long-run equal incentives be given to production for domestic and foreign markets. This can be done by subsidizing the export of manufactured goods at a rate equal to the level of tariffs found appropriate for such general promotion. But at which rates and should all manufactured goods be treated equally? It is our belief that perhaps all manufacturing industries in Thailand are yet in this infant industry stage (excepting possibly the production of gunny bags and some types of food processing). We would, therefore, recommend in principle an equal degree of protection to all manufacturing industries.

70. Without claiming any precision we feel that it is unlikely that manufacturing industries in Thailand ought to have any more than a uniform rate of 33 per cent protection on them. The simplest way of ensuring a uniform degree of protection is to set tariffs and export subsidies at equal rates to all inputs and outputs. These are more or less the general rules of taxation that we feel the Government ought seriously to follow in its industrialization policy in the long run.

71. A serious problem may arise in connexion with luxury consumption goods. That consumption of these goods should be discouraged is clear. This may best be ensured by high taxes. It is not, however, clear whether they should be imposed on imports. A business tax on local and imported luxury products will discourage consumption and will not interfere with resource allocation, because to the extent luxuries are being locally consumed and to the extent they can be exported, there is no reason why they should not be locally manufactured.

72. We emphasize once again that a future course of action along the above lines is necessary if in a free enterprise economy like Thailand the allocation of resources is to be achieved that exploit the country's comparative advantages.

73. It ought to be evident that once the tariff structure of the economy is brought more or less in line with the proposals in this report, detailed project evaluation will not be required by the Government. Entrepreneurs, endowed with the profit maximization motive will in general go in for precisely those projects that are beneficial to the economy as a whole.

74. A comment may also be opportune on credit policy. Good credit facilities for exporters are in many countries one of the main means of assistance. South Korea, for example, is known to do very much in this respect. In Thailand commercial banks have a special rediscount facility with the Bank of Thailand through which exporters get 7% export credits on basis of a 5 per cent rate charged by the Bank of Thailand, which leaves a 2 per cent margin to commercial banks. This facility does not work too well because private banks seem to earn more through regular credits. Furthermore, the facility is being used mainly for post-shipment finance, while exporters would also have to finance raw materials for exports and the production process. It is proposed to change this arrangement in two main directions. First, to make the Bank's margin for this credit more flexible in line with other margins of gross bank earnings. Second, the rediscount facility should be allowed to cover all types of finance which can clearly be proved to be directly related to the export business of the firm.

75. In many countries credit policy is also used to achieve other plan targets, e.g. such as the better dispersion of industry outside the Bangkok region. Presently, however, commercial banks use their out of Bangkok branches mainly for the collection of deposits. Credits are comparatively seldom granted. Dr. A. Rosenthal suggested that the creation of these branches should depend on permits by the Bank of Thailand, and that a better credit-deposit ratio could be made a condition for these permits or their renewal from time to time.

76. Finally we would like to comment briefly on some problems public administration seems to be facing in Thailand. First, we believe that in order to proceed further with development planning, close co-operation should be sought and established between all Government agencies involved in the planning process. The co-operation required for the creation of the Industrial Information and Studies Centre [1] is only one example. The inter-agency teams proposed for all major sub-branches of industry should also prove a viable tool for the formulation of the Development Plan. Co-operation is required at all levels of the hierarchy. Second, we feel that the further preparation and subsequent implementation of the Third Development Plan depends very much on the quality of the personnel the Government agencies will have at their disposal. In this context we are not so much concerned about high-level administrative staff but much more so about the quality of the medium echelon professionals. These groups of Government administrators which has to carry out the burden of work should be of equal quality. The Government, therefore, should undertake all efforts to bridge the presently existing gaps between high and medium level administrators. Both cannot be fully effective without appropriate support from each other. It will be by no means sufficient to educate and train primarily high ranking executives.

1/ Title subject to change

Annex 1

Proposed organization of Additional Work

1. The Ministry of Industry (MOI) or more specifically the Industrial Economics and Planning Division (IEPD) has to draft the Industrial Development Plan as part of the preparation of the Third Development Plan. In trying to get this work done, the present report of the UNIDO Advisory Mission could not actually serve as the final draft of the Industrial Development Plan but rather as a preliminary draft for discussion. Some additional assistance by UNIDO should continue[1/], but an increasing share of the burden should be taken up by the Thai Ministry of Industry. A Thai Plan for the development of industry has a better chance for implementation if prepared by a Thai team. The present time table for the conclusion of the Third Plan may be summarized as follows.

2. The time schedule is dictated by the beginning of the fiscal year and the needs to discuss drafts at the NEDB and the Cabinet. Approximate dates may be mentioned as follows:

First draft for discussion by NEDB	end Feb. 1971
Final draft for discussion by NEDB	mid June 1971
Discussion by NEDB	mid June - July 1971
Discussion in the Cabinet	August - September 1971
Commencement of implementation	1 October 1971.

This time schedule can be read in a somewhat more flexible manner for sectoral programmes such as industry. It must be clear, however, that not more than half a year is available to prepare a full first draft of the Industrial Development Plan.

3. Until then an improvement of the present draft can be expected not only because more time and people will be available for this later stage, but also because more statistical data can be expected to become available within half a year, more work at the aggregate level will be available for the work on industry, and finally more and better co-ordination and co-operation can be expected with all other government agencies concerned.

1/ Draft Job Description for an Industrial Development Programmer - see Annex 4.

4. As time is short for preparing the improved draft, the relative weight of the different parts of the Industrial Development Plan should be borne in mind. The analysis of the past (present Chapter 1) will mainly serve as background. Not much more than minor improvements can be expected at this stage. Projections will depend on detailed work and they may consume time, but the main analysis of projections should continue to be made by NEDB. This leaves the main subject matter of the Industrial Development Plan, i.e. the policy recommendations (included in Chapter 3) which deserve more attention at the highest level.

5. On the other hand it is quite doubtful whether a development policy can be worked out for the main industries. First, because it is generally difficult to fix a list of good industries and a list of bad industries five years in advance, as mentioned in Chapter 3; second, because the main conclusions in this respect depend on project evaluation. This does not preclude of course, a more general discussion of various industries, their industrial organization, the advisable level of their protection, etc.

6. The possibility of further co-ordination (perhaps even with the manufacturers just mentioned above) may well deserve additional comment. The industrial sector in Thailand, like in most other countries, is controlled and promoted by a number of Government agencies besides the Ministry of Industry. All these other agencies must co-operate in the formulation of the Industrial Development Plan, because they control substantials part of the information which must be fed into the planning process and furthermore, because they cannot easily be expected to execute a plan which was prepared by somebody else without their participation or comment.

7. Participation and co-operation can only be useful if they are carried out at all levels of the hierarchy. Members of the Board of the NEDB representing various agencies have implicitly or tacitly agreed to this co-operative approach by the mere fact that they invited the MOI to prepare the Industrial Development Plan. A Working Group is co-ordinating the work with the private sector, the NEDB, the Ministries of Finance and Economic Affairs, the Bank of Thailand, the Department of Labour and other agencies concerned. Co-operation at a lower level is mainly forthcoming between the Industrial Economics and Planning Division of the Ministry of Industry and the NEDB. It would be desirable to increase also

the co-operation between other Divisions of the MOI and other Government agencies, such as the BOI, the Department of Labour, the NPO, the IPCT, the Ministry of Finance and finally the private sector.

8. It is therefore proposed that a substantial part of the additional work should be done in inter-agency teams, with the IEPD always serving as an active participant. Such teams may possibly be appointed for each one of the major sub-branches of industry such as food processing, textiles, etc. and for a number of more general topics such as development policy [1], project screening, data improvement, manpower and education, infrastructure needs, and general projections for manufacturing. Such teamwork should always be based on a written draft report on the subject prepared by IEPD. The draft should be discussed and the team should finalise a revised report. It would be advisable to agree on the data basis and factual presentation, however, policy recommendations and projections based on them may include different views. All recommendations should spell out advantages and disadvantages of proposed policies.

9. The work of a team on one of the industries may briefly be discussed. The IEPD should include in the draft report the survey prepared recently on the main industries, e.g. on textiles. The draft should also explain the projections made for textiles on output, exports and also less detailed estimates done for this industry on other parameters such as investments, employment by level of skill and other needs such as quality control, applied research, export marketing, etc.

10. The working team may possibly include people from IEPD, NEDB, BOI, other relevant divisions in the MOI, the Textile Research Institute, a textile engineer and a textile manufacturer, the Department of Labour (mainly when dealing with manpower), etc.

1/ As mentioned above, this subject may be regarded as most important and, therefore, the Director of IEPD may want to participate personally in this work.

11. One example may be the improvement of investment estimates through capital value added ratios. The present draft mentions a ratio based on the Census of Industries, 1964. The 1967 Survey of larger manufacturing enterprises may also be used as a reference. Comparable ratios used by other similar countries may be presented to the group. Applications for promotion and loan appraisals by IFCT in the same branch may be analyzed. When this data is combined with practical business experience, the revised figure may turn out to be more substantially reliable.

12. Export estimates may be improved and spelled out in detail; employment and occupational structure may be studied and the degree of protection granted in the industry may be analyzed.

13. The team on project selection actually already exists in the form of the Working Group on Feasibility Studies. The same may soon be true for data improvement, which will be dealt with by the planned "Industrial Information and Studies Centre"[1/].

14. It might be fair to summarise the above discussion with the feeling that even if the data basis for industrial planning is still weak, very substantial improvements can be achieved in the present draft before the final proposal for the Third Plan is presented to the NEDB and the Cabinet. Success depends, as mentioned, on the will of the agencies concerned to co-operate on the job, but not less important is the amount of interest, time and encouragement invested in the work by the director of IPD. If the present draft is actually improved, it should be expected to serve as a powerful tool in reshaping the industrialisatio policy along the lines proposed by the Ministry of Industry.

1/ Working title, subject to change.

Annex 2

equest to

the United Nations Development Programme (Special Fund)

from the Government of Thailand

for Assistance in the Establishment and peration of

the Centre of Industrial Information and Studies 1/

Bangkok,
October 1970

1/ Title subject to change

TABLE OF CONTENTS

A. Summary Data

Country: Thailand
Title of the project: Centre of Industrial Information and Studies
Special Fund Allocation: US$473,900
consisting of
Special Fund Contribution: US$418,923
Government Contribution towards
local operating costs: US$ 54,977
Government Contribution in kind US 499,329
Duration of the project: three years
Co-operating Government Agency: Ministry of Industry, Industrial Economics and Planning Division

B. Background Information

1. The intention of the Government to establish the Centre of Industrial Information and Studies is an outcome of the understanding that Thailand has achieved a certain stage in its industrial development at which rather crucial policy decisions will have to be made, and that reliable information is a fundamental requirement for such policy decisions. It is, therefore, desirable to outline as background information the major characteristics of the present stage of industrial development.

2. The economy of Thailand has developed rapidly during the last decade, and the manufacturing sector belongs to the most dynamic ones (average annual rate of growth between 1960 and 1968 was 12.7 per cent). While industry was rather negligible ten years ago, it contributes now over 15 percent to the GDP. Though the primary processing industries (rice, sugar and saw milling) are still the most important industries in terms of output and value added, a nucleus of modern industrial sector has been created as a result of the fast growth of durable consumer goods and intermediate goods (petroleum refinery, non-metallic minerals, etc.).

3. The rapid growth of industry has been the result of several beneficial factors (continuous balance of payments surpluses due to stable agricultural exports and inflow of foreign capital, monetary stability, development of industry-minded entrepreneurial class, cheap labour, etc.). However, it has been also influenced by an inward-looking, import substitution policy and by the investment promotion system.

It should be noted that a private market economy is the basic principle of the Government policy; it reflects itself, i.e., in the absence of a noticeable public sector in the industry. Yet the Government plays an active role in stimulating and directing industrial development. In 1954 the Promotion of Industrial Investment Act was passed; it sought to stimulate private investment in industry by guaranteeing freedom from nationalisation and giving selected "important" firms exemptions from import taxes on raw materials and capital equipment and income tax exemption for the first five years of operation. Foreign investors were guaranteed the repatriation of capital and profits. Since 1959, when the Board of Investment was created to implement the Act, more than 500 industrial firms have been granted Promotion Certificates, out of which almost 400 started operations. The total investment in promoted industries during the decade cumulated to approximately US$300 million, two thirds coming from local investors and one third from foreign investors.

Almost equally important as incentives has been the assumption of protection against competition, which has been implied by granting a Promotion Certificate. It has been almost automatically expected by the firms that, once being promoted, they will also be sufficiently protected against import of competitive products; in most cases their expectations have been satisfied. The tariffs have ranged from 5 to 80 percent in addition to some quantitative restrictions on certain products. Most consumer goods and intermediate products produced locally are protected by tariffs of 40 - 60 percent while capital equipment and

raw materials not produced locally have tariffs of 5 - 15 percent. This level of tariffs secured the domestic market for domestic producers so that they were not compelled to approach the more difficult export market as long as the domestic market was sufficient.

Since the import substitution did not curtail imports (increased import of raw materials for domestic production) and the repatriation of foreign investors' profits is increasing, there exists now grave concern over the long-term development of the country's balance of payments situation; it is recognized that the country is at a cross-roads and that an export-oriented industrial development strategy with a set of consistent policy measures has to be formulated if successful industrial development is to be maintained. The new orientation of industrial policy should effect the incentives system, the tariff structure, licensing, etc. Business and corporate taxes also demand critical review.

4. In order to substantiate the formulation of industrial policy measures by objective knowledge of the economic structure data availability has to be improved. The same applies to industrial planning, which has been based so far on rather incomplete and sometimes contradictory data. It is felt that both for policy formulation and for industrial planning more data are needed than that which can be provided by an improved statistical service (for example, detailed information on the performance of promoted industries; data on endowments of selected branches with specific production factors such as skills, capital, etc.; calculation of aggregated parameters such as value added per worker; capital/output ratio, etc for specific branches; capacity utilization; net balance of payments effects of investment in selected industries, etc.). These data are partly available, but inconsistent and scattered over many institutions; partly, they will have to be obtained by an improved reporting system. It should be noted in this context that the Factory Act 2512 (1969) requires all factories using machinery of two horse power or more or employing seven or more workers to obtain a license from the Ministry of Industry which must be renewed every three years; this can be utilized for collection of data.

5. While the lack of data and their analysis has been generally recognized, some Government bodies have been considering for some time the idea of establishing a Centre of Industrial Information and Studies with a data bank on industrial establishments as one of its tasks. The efforts in this direction have been facilitated by the adoption of standard industrial classification, which was elaborated with the assistance of a UNIDO expert. In the course of work of the UNIDO Advisory Mission on Industrial Planning (September, 1970) a consensus was reached with several Government and semi-public bodies that industrial data bank services should be established, which should be open to agencies dealing with industries and, partly, to private entrepreneurs as well.

C. Centre of Industrial Information and Studies

Objectives

1. The major objective of establishing the Centre is to have a central source of information on industry, on which various Governmental, semi-public and private bodies can draw, and which at the same time would make use of the available data for preparing studies needed for planning and policy-making activities of the Ministry of Industry and other bodies. At present, the data are collected by various bodies, such as:

Ministry of Industry: Industrial Register. This Register covers all industrial establishments employing more than seven workers or utilizing machinery with more than two horse power. Presently, about 50,000 industrial establishments are registered with the Ministry of Industry, out of which some 20,000 are rice mills. The data available on all these establishments are still rather incomplete which particularly holds true with regard to the smaller firms. As mentioned above, the recent (1969) Factory Act requires all the establishments subject to licensing to renew their licenses every third year.

Department of Labour: Annual Survey on Manpower and Employment. Based on street surveys in the Bangkok area, a list of all establishments employing more than ten workers is published each year. Establishments employing less than ten workers are also subject to the survey, but their listing is not complete.

National Statistical Office (NSO):
- 1964 Industrial Census
- Annual Survey of Industry (enterprise level). The latest available data are from the 1968 survey, which was quite incomplete.

Customs Department: Annual publication of import and export entries at the enterprise level. The coverage of all exporting and importing firms is almost complete.

Board of Investment, Bank of Thailand, Industrial Finance Corporation of Thailand: Many data on promoted firms are available, however, frequently only as estimates in the application forms.

Revenue Department: Annual collection of data on the enterprise level and monthly collection on the establishment level. These data are not at all used by other Government agencies. Presently, the Revenue Department is processing the 1966 annual revenue figures

To sum up, the data on industry presently available for governmental planning and private decision-making are far from sufficient with regard to both their amount and quality. In addition, various Government agencies are using different classifications resulting in inconsistencies.

2. In order to remedy this situation, it would be possible to plan new surveys or censuses which, unfortunately, are rather expensive and difficult to implement and process, and very often incomplete. Therefore, it seems to be more advantageous to use, wherever feasible for technical and legal reasons, routine administration and operational records, particularly those of the Ministry of Industry, Customs Department, Revenue Department, Labour Department and Board of Investment, Bank of Thailand and Industrial Finance Corporation of Thailand (IFCT), and to integrate them into a central data bank with a Central Register (a complete file of all establishments under coverage, with identification number, address, main activity and type of establishment) and Data Files, merging data extracted from various files and records, which implies coding of individual elements concerned.

As far as the coverage of the Central Register is concerned, it is intended to include only enterprises with ten and more workers. The 1964 Industrial Census revealed that these establishments represent two percent of the total number of workers and 40 percent of total industrial output; the percentage will have increased by now. Though it would be technically possible to have a register with all establishments

registered by the Ministry of Industry, the marginal benefit of this extended coverage would most probably be lower than the incremental costs, since the Government policy is anyhow directed towards larger firms. As far as the contents of the Data Files are concerned, it is understood that they should contain information on capacity, sales, inputs, production factors, cost structure, etc., but a detailed list will have to be defined according to the needs of users and availability of data in the course of establishing the Centre

Structure and Functions of the Centre

3. The Centre will have three functional units:

a) Data Bank
b) Economic Studies Unit
c) library

A description of their functions and staffing follows:

4. The Data Bank will be the core unit of the Centre. It will have the following functions:

a) to study permanently the needs of various current and potential users for data on industrial establishments, separately considering the need for individual (elementary) data (especially for administration and operational purposes) and the need for aggregated data (for policy-making and planning purposes of agencies and for private decision-makers);
b) to analyse sources of information (collection of all forms and questionnaires filled in by industries, review of the administrative records, analysis of all available data in terms of contents, accuracy, frequency of occurrence, etc.) and to organise the inflow of data into the Data Bank;
c) to organise the processing of data;

d) to disseminate data and promote the use of the Data Bank (evaluating actual inquiries, training the users applying case study approach, publishing regularly some data and instruction on possible uses of the Data Bank, etc).

In order to perform the functions satisfactorily the unit will have to be staffed as follows:

a)	analysis of need for data:	1 economist 1 statistician
b)	analysis of data sources:	1 economist 2 statisticians
c)	organisation of data processing:	1 economist 2 statisticians 2 data processing specialists
d)	data dissemination and promotion:	1 economist 1 statistician 1 editor

Thus, the Data Bank unit will have 13 professionals. However, it should be noted that the data processing itself (punching, storing, retrieval, etc.) will be carried out by the National Statistical Office, which has adequate facilities. Assuming that 50,000 establishments would submit once in three years up to 100 pieces of information, and estimating in addition a monthly inflow of some ten pieces of information on approximately 4,000 of the most important establishments, it is expected that processing of data for the Data Bank will require two or three key punch operators, one programmer, three punching machines, one verifier and approximately 20 hours computer time per month.

5. The Economic Studies Unit will utilise the data in the Data Bank in order to:

a) undertake studies on the impact of certain policy measures (for example, net balance of payments effect of promoted industries, budget revenue impact of particular tax systems, impact of credit policy on cost and price structure in industry);
b) undertake studies and calculate parameters for planning purposes (endowment of industries with specific factors of production, such as capital, selected skills, etc.; techno-economic characteristics of export-oriented industries; backward and forward linkages of selected industries to other industries and/or to agriculture; capacity utilization in selected industries, etc.);
c) undertake studies for general use by agencies and private enterpreneurs, such as growth of demand for specific products (income elasticity, technical norms), profitability according to scale of production, etc.

The unit will have the following professional staff:

3 economists
2 econometricians
2 engineers
1 statistician

The functions and the staff composition of this Unit may be amended to respond to the needs of Government bodies at the time the Unit is established.

6. The library will consist of approximately 2,000 books and some periodicals, all dealing with industrial economics, econometrics, economic statistics, information systems and data banks and data processing. It will also keep all overall sectoral and regional studies and surveys of Thai economy and industry.

Staff: 1 documentation expert
1 librarian

Position of the Centre in the Institutional Set-up

7. The operation of the Centre will require close co-operation of agencies dealing with industrial development. The present institutional set-up is marked by a multiplicity of agencies which co-ordinate their policy and administrative actions through sub-committees to which the agencies delegate their representatives. The principal bodies dealing with industrial matters are the Ministry of Industry, the Board of Investment and the National Economic Development Board, which is in charge of overall planning. In addition, some important decisions effecting industrial policy lie with the Ministry of Economic Affairs, which is concerned with matters of trade, and with the Ministry of Finance (Customs Department, Revenue Department and the Office of Fiscal Policy). The Industrial Finance Corporation of Thailand, which is a semi-public financial institution, provides loans and credits to industry. The Association of Thai Industries has the function of a Chamber of Industry. Within the Applied Scientific Research Corporation of Thailand (ASRCT) there exists a Technological Research Institute and an Economic Evaluation Group which prepare and evaluate pre-investment studies.

The position of the Centre should be defined vis-a-vis both the potential users of information and the sources of data (institutions collecting and publishing data on industry are mentioned in Section C). Because of the co-ordinating function and with regard to the problem of confidentiality, the Centre should be attached to a Government body. In order to make the Centre and the Data Bank as much as possible use-oriented, the Government body concerned should belong to the main users of the Centre. Taking into account that the Ministry of Industry is directly involved in the preparation of the industrial component of the Development Plan, it is intended to attach the Centre to the Ministry. Another reason is that the Ministry registers all industrial firms according to the Factory Act (1969) and can thus easily be the administrator of the Central Register. The linkage of the Centre to the other agencies will be secured through their participation in the Management Board of the Centre.

Management and Organisation

8. For policy management of the Centre a Management Board will be created. It will meet at least twice a year. The terms of reference of the Board will be:

a) to evaluate the progress in establishing the Centre;
b) to evaluate the activities of the Centre with specific regard to inter-agency co-operation;
c) to give guidelines for the Work Programme of the Centre.

The Management Board will consist of the representatives of the following bodies:

Ministry of Industry
Applied Scientific Research Corporation of Thailand
Association of Thai Industries
Bank of Thailand
Industrial Finance Corporation of Thailand
Labour Department
Ministry of Economic Affairs
Ministry of Finance (Revenue Department and Customs Department)
National Economic Development Board
National Statistical Office

The Under-Secretary of State for Industry will be the Chairman of the Board; the Director of the Industrial Economics and Planning Division will act as the Secretary General of the Board.

The Ministry of Industry will nominate the Director of the Centre, who will be responsible for the establishment and operation of the Centre.

9. The necessity of especially close-co-operation with the National Statistical Office (NSO) should be mentioned here. NSO has sufficient computer facilities which will be used for processing data for the Data Bank. Punching of cards and tapes will also be done at the NSO because a pool of punching machines and key punch operators are available there.

10. Access to individual data will be limited to authorised agencies with processing of inquiries once a week.

Aggregated data will be provided according to the needs of the users either upon request or periodically.

Private users will be charged a nominal fee.

11. Most individual data collected by the administration is confidential; however, this does not mean that this data cannot be provided to other Government agencies. In fact, the law does not prevent, for instance, the Ministry of Industry from disseminating its data to the Revenue Department or to the Customs Department, and vice versa. Any confidential individual data which cannot be disseminated from its origin will be processed by the NSO into aggregate data.

Non-governmental administration and especially private investors will receive confidential data as aggregates provided the aggregation is sufficient to keep individual data confidential.

Location

12. The Centre will be located on the premises of the Ministry of Industry. In the initial period it will be located in the offices of the Industrial Economics and Planning Division. Later a separate building will be constructed on the site of the Ministry.

D. Implementation Programme of the Project

1. The objectives of the project are explained in Section C However, the final objective as outlined in Section C can be achieved only in stages. Since the project involves close co-operation among several agencies, it always runs a risk of losing support and co-operation of some of them which may be detrimental to the whole project. The project should, therefore, be divided into several stages and every stage should be started only if the preceding one was completed and evaluated as satisfactory. In such a way possible waste of Government and UNDP(SF) funds would be prevented.

2. The implementation of the project is programmed for three years. However, it should be mentioned here that the whole project will be preceded by a pilot project of approximately one year, the experience from which will be decisive for final formulation of the main project. It should, therefore, be expected that the project as put forward now may require some amendments after the experience from the pilot project has been evaluated. However, basic changes are not expected. The pilot project will be undertaken with the assistance of UNIDO experts financed from SIS. It is assumed that the results and evaluation report will be available before preparing the Plan of Operation for the main project.

Pilot Project

3. As mentioned above, the purpose of the pilot project is to test the system of inter-agency co-operation in establishing and operating a data bank. At the same time, rather immediate results should strengthen the interest of the agencies concerned in the project. Therefore, it was decided to take as the object of the pilot data bank the Promoted Industries. It is estimated that until now less than 400 firms with Promotion Certificates have started operation so that processing of data on them will involve no technical problems.

As far as implementation of this pilot project is concerned, it has to be started by creating a Management Board [1/] and nominating a Secretary General. Major steps to be performed will be as follows:

a) Preparatory study (inventory and analysis of need for data, inventory and analysis of available data on promoted industries, concept of the register and flow of records)
Duration: 1 to 2 months

b) Establishing the pilot data bank (punching the data on punched cards and tapes, processing, retrieval, statistical processing)
Duration: 3 to 4 months

c) Experimental utilization and promotion, preparation of the report with evaluation of the pilot project and recommendations in regard to the major project.
Duration: 3 to 6 months.

The whole project will be undertaken by a team from the Ministry of Industry (2 economists, 2 statisticians) led by the Director of the Industrial Economics and Planning Division and assisted by two UNIDO Programming Data Experts (one for one year, one for two months, both financed under SIS).

Stages of the main Project

4. The project will be developed in stages, which applies first of all to the Data Bank unit. There will be the following stages in establishing the Data Bank:

a) Inventory and analysis of the need for data on industry (inventory of decision makers, stock-taking of decisions

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1/ It will have the same composition as the Management Board of the Centre.

being currently made), analysis of available data sources, analysis and classification of available data, outlining concept of the register and of flow of data/records)
Duration: 6 months

b) Introducing the system of data provision (coding, changes of definitions and of administrative forms, flow of data/records), concept of the EDP-system
Duration: 12 months

c) Establishment of the Data Bank (inflow of data, their processing and storing)
Duration: 12 months

d) Experimental operation of the Data Bank (evaluation of inquiries, promotion by explaining possible uses, training of users applying case studies approach, issuing a regular publication)
Duration: 6 months

Establishment of the other two units is partly linked to the progress of developing the Data Bank since, for example, the Economic Studies Unit will depend very much on data collected in the Data Bank. For training purposes, however, and in order to assist in solving urgent policy and planning problems the establishment of the other units shall not wait until the Data Bank is fully operational.

5. The requirements for professionals, both local and UNDP/UNIDO experts, at each stage of the project and for all three units are shown in the Chart of Professional Staff of the Centre (see Appendix I).

E. Project Components

UNDP (SF) Assistance requested

1. Experts

Six experts for a total duration of 144 man-months plus short-term consultants for 18 man-months are requested. Furthermore, two Associate Experts will be working with the team (12 man-months each).

Designation and brief description	Duration of assignment in months
Industrial Programming Data/Project Manager will be responsible for implementation of the project and co-ordination of the work of other experts; particularly, he will be advising on the establishment of the Data Bank.	36
Industrial Programming Data/Electronic Data Processing will formulate an EDP-system suitable for the Data Bank operations.	24
Industrial Planner/Economist will assist in establishing the Economic Studies Unit, undertake the economic analysis of industry using the data from Data Bank and advise on current planning and policy problems.	36
Industrial Engineer will assist in the interpretation of data from a technical (engineering) viewpoint.	24
Economic Analysis/Econometrician will assist in application of econometrics and statistical methods in the economic analysis of the industrial structure	18

Documentation Expert/Librarian 6

will assist in establishing the library, including documentation on Thai economy and industry.

Short-term Consultants 18

to be specified in the course of implementation of the project;
calculated at a proforma salary level of $27,100 per year, the 162 man-months of expert services represent in total $365,850.

Associate Expert/Programming Data 12

will assist the Project Manager in collection and analysis of available data and in stock-taking of data needs.

Associate Expert/Documentation Expert 12

will assist the Documentation Expert/Librarian in collecting and classifying available studies and reports on Thai economy and industry.

Manning table for the experts is attached as Appendix II. Job description for the Project Manager is attached as Appendix V.

2. **Fellowships**

Fellowships for a period of six or twelve months each will be granted to selected professionals of the Centre in the following fields:

	Number	m/m
Data banks/data processing	4	24
Industrial economics/planning	4	30
Econometrics	1	12
Economic statistics/statistical methods	1	6
Documentation	1	6
	11	78

The whole fellowship programme represents $42,000 ($400 per month and $1,000 for travel).

The training programme (fellowships) will be spread over the duration of the whole project, applying the principle that a counterpart should be granted a fellowship only after he had spent some time at the Centre. Tentative phasing of the fellowship programme is outlined in Appendix III.

Provision for other training facilities (attendance at meetings and seminars, visits of similar projects, etc.) in the amount of $5,000.- is requested in addition to fellowships.

3. Equipment and Documentation

The following equipment and documentation is requested from the UNDP (ST):

a) Office equipment to include i.a.:

4 electric calculators	approx. $	2,000
5 adding machines		1,000
1 duplicating machine		1,500
1 photo-copying machine		1,000
1 varityper		5,000
2 electric typewriters (English)		800
6 manual typewriters		1,500
other unspecified		2,000
	approx. $	14,800

b) Data processing equipment 1/

2 punching machines	approx. $	8,000
1 varifier		4,000
	approx. $	12,000

c) Books and periodicals

approx. 2,000 books and	approx. $	10,000
100 periodicals		2,000
	approx. $	12,000

1/ to be stationed at the National Statistical Office

The office equipment will be requisitioned gradually as the project develops. Data processing equipment should be supplied before the beginning of the third stage. Books and periodicals will be requisitioned at the beginning of the project.

4. Miscellaneous

Miscellaneous expenses will include two vehicles for the project experts, maintenance of the vehicles, stationery, postal charges and other items, estimated in total at US $21,250.

Government Contribution

1. Personnel Services

A total number of 570 man-months of professional services will be provided by the Government according to the Manning table, which is attached as Appendix IV.

The total cost of professional personnel services amounts to 1,515,000 Baht. Increase in salaries is already implied in the applied salary scales (5,000 Baht monthly for the Director, 2,500 for other professionals).

The administrative personnel services will total 672 man-months, to be provided as follows:

Designations	Number	Total man-months
Secretaries	2	72
Statistical clerks	6	144
Typists	10	240
Translators	2	48
Clerks	2	48
Draftsmen	1	18
Other administrative personnel (accountants, procurement, etc.)	3	102
	26	672

With an average of 1,500 Baht salary per month the costs of this category of personnel represent 1,008,000 Baht.

Other auxiliary personnel services will amount to 360 man-months as follows:

Designations	Number	Total man-months
Machine operators	4	96
Drivers	4	96
Messengers	2	72
Other (cleaners, guards, etc.)	4	96
	14	360

The costs of these personnel services for the project duration are estimated at 360,000 Baht (1,000 Baht monthly salary/wages).

2. Training

The Government will continue paying full salary to every employee of the Centre who is on fellowship tour. In order to get first-hand knowledge of the decision-making process and data availability in agencies co-operating with the Data Bank, some of the professional employees of the Centre will be assigned from time to time to work (preferably on a part-time basis) in some of those agencies. Their salaries will be paid from the Centre budget.

3. Building and equipment

The Government will provide

a) Land and building for office accommodation of international and local personnel

1,000 m2 land	(à 2,500 Baht)	2,500,000
2,000 m2 floor space	(à 1,500 Baht)	3,000,000
		5,500,000

b) Office furniture and equipment

10 desks à 1,500	15,000
30 desks à 1,000	30,000
15 typewriter desks à 400	6,000
60 filing cabinets à 850	51,000
60 shelves à 400	24,000
6 typewriters à 4,000	24,000
3 calculators à 6,000	18,000
2 cars à 80,000	160,000
20 air-conditioners à 12,000	240,000
other unspecified	52,000
	619,000

c) Office supplies

Stationery and supplies, incl. punched cards (400 pieces per 20 Baht) and tapes 1,000 Baht each	25,000
Other supplies	175,000
	200,000

4. Miscellaneous

Value of computer time 1/ (20 hours monthly à 3,000 Baht) (20 x 3,000 x 18)	1,080,000
Other (travel in the country, etc.)	120,000
	1,200,000

F. Financial Data

This Section summarises the flow of UNDP (SF) and Government expenditures. The break down of the expenditures by years is based on explicit or implicit indication of flow of costs of individual components as outlined in the preceding Section.

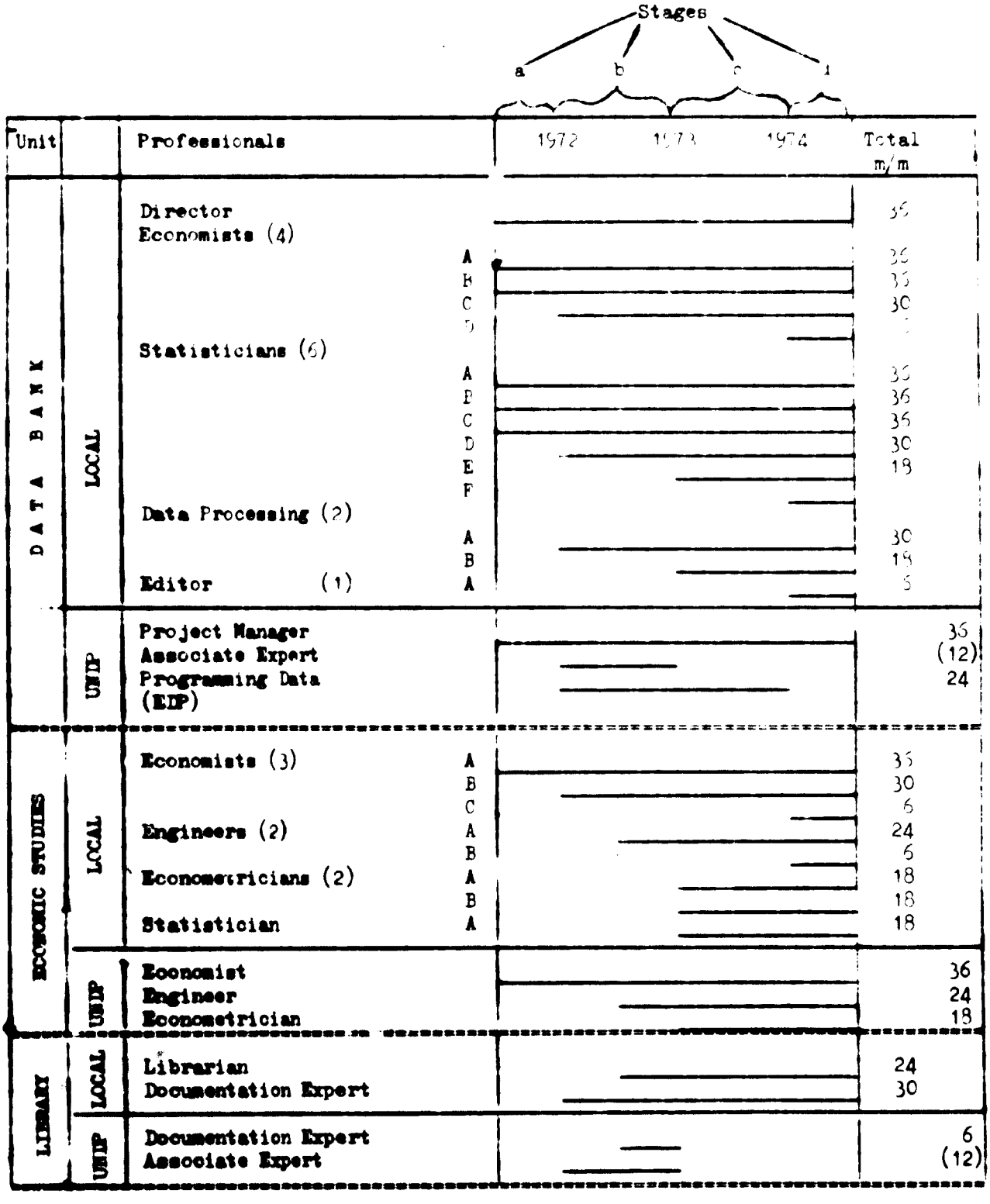
For conversion of Baht into dollars and vice versa the exchange rate of $ = 20.83 Baht was applied.

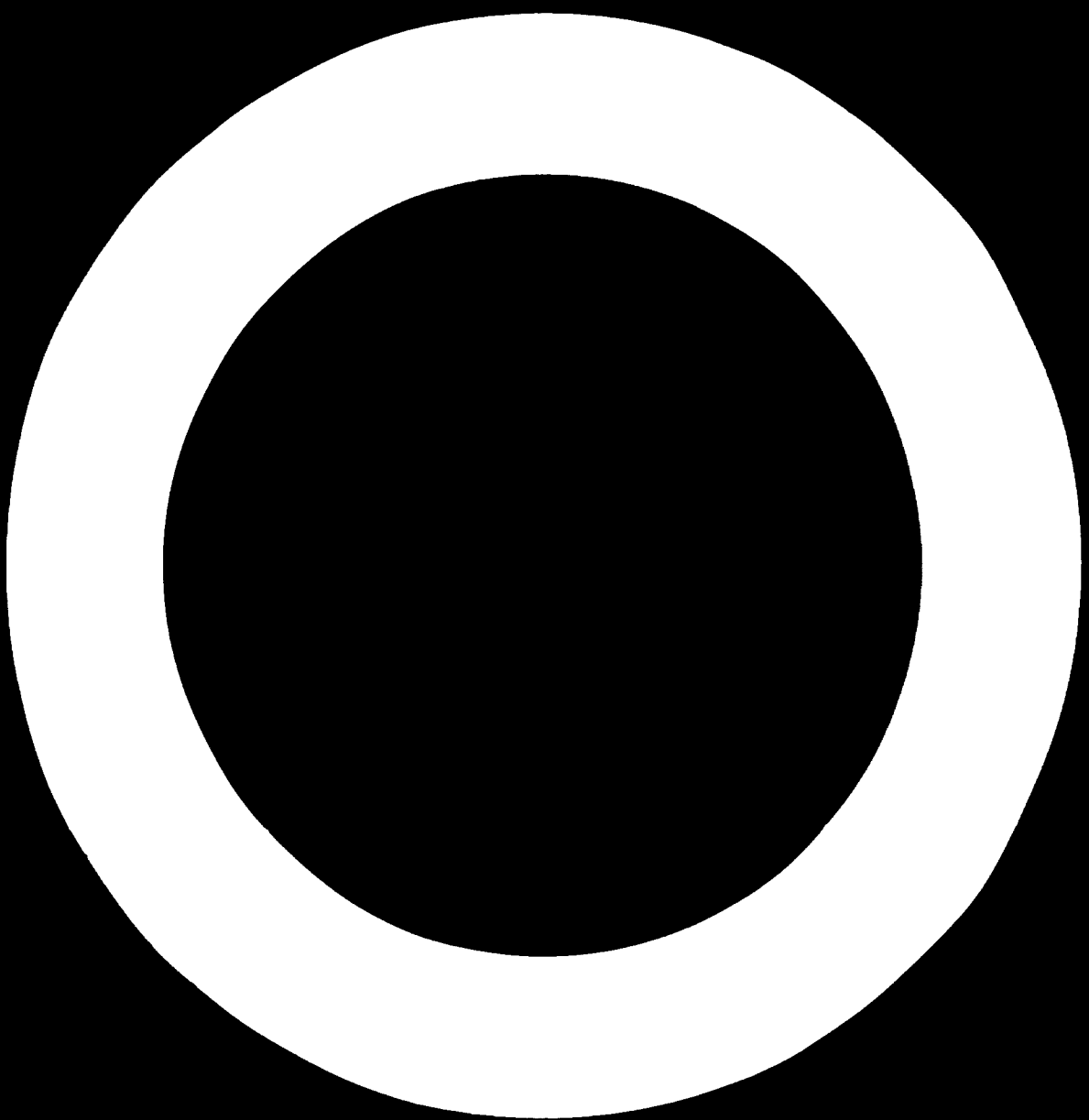
1/ to be provided by the National Statistical office free of charge

UNDP(SF) Expenditures (in US$)	1972	1973	1974	Total
Experts	81,300	149,050	135,500	365,850
Training	6,300	17,600	22,800	42,200
a) Fellowships	1,000	2,000	2,000	5,000
b) Other				
Equipment	1,000	1,000	6,800	14,800
a) Offices		12,000		12,000
b) Data processing	2,000	8,000	2,000	12,000
c) Books	6,000	8,000	7,950	29,950
Miscellaneous	101,100	195,650	177,050	473,800

Government Expenditures (in Baht)				
Personnel	315,000	525,000	675,000	1,515,000
a) Professional	225,000	360,000	423,000	1,008,000
b) Administrative	30,000	120,000	160,000	360,000
c) Auxiliary				
Buildings and Equipment		3,500,000	2,000,000	5,500,000
a) Land and buildings	50,000	350,000	218,000	618,000
b) Office equipment	40,000	70,000	90,000	200,000
c) Office supplies	30,000	370,000	800,000	1,200,000
Miscellaneous	740,000	5,295,000	4,366,000	10,401,000
(in US$)	35,520	254,200	209,608	499,328

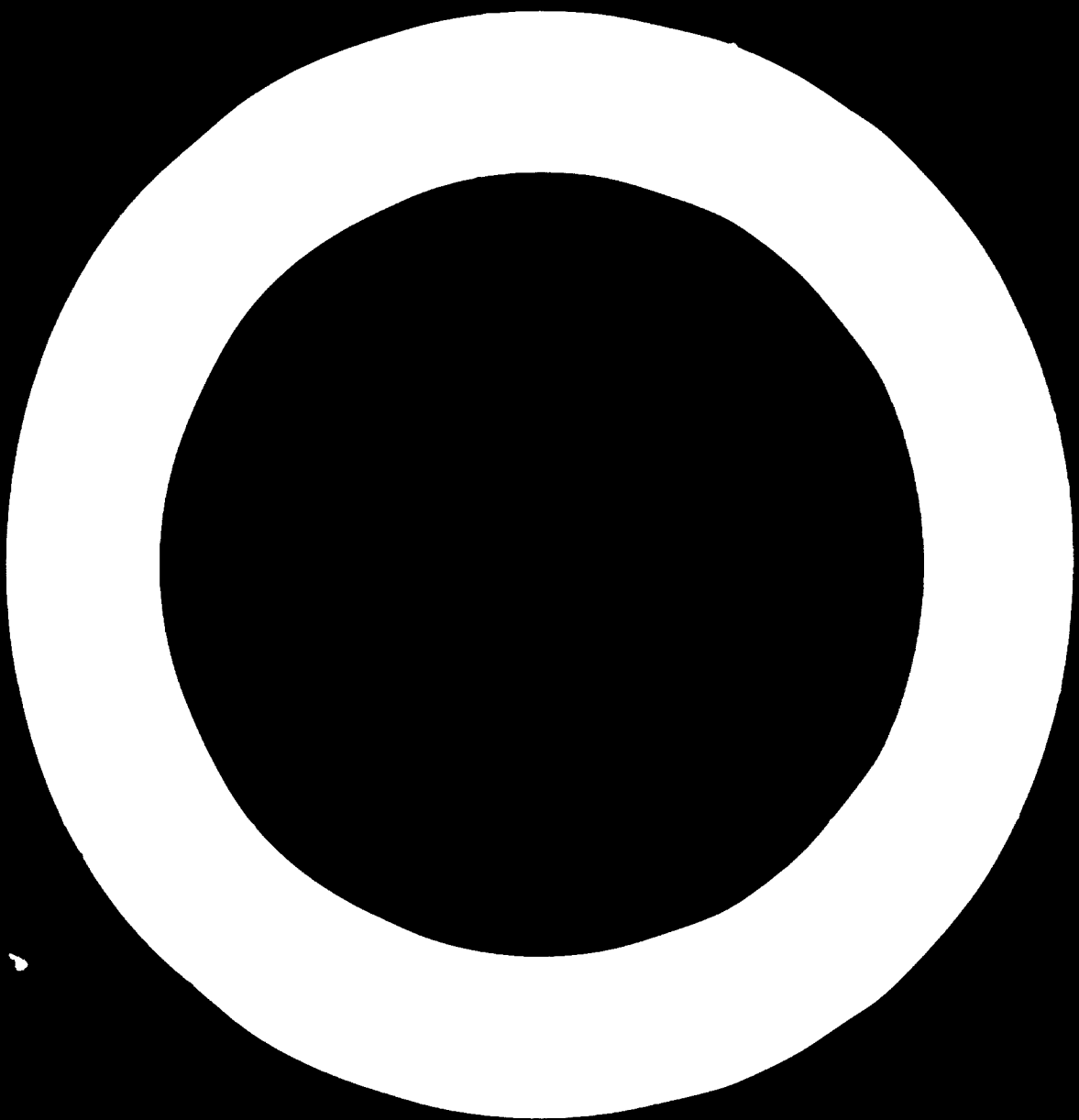
Appendix I: Chart of Professional Staff of the Centre





Appendix II: Manning Table - [illegible]

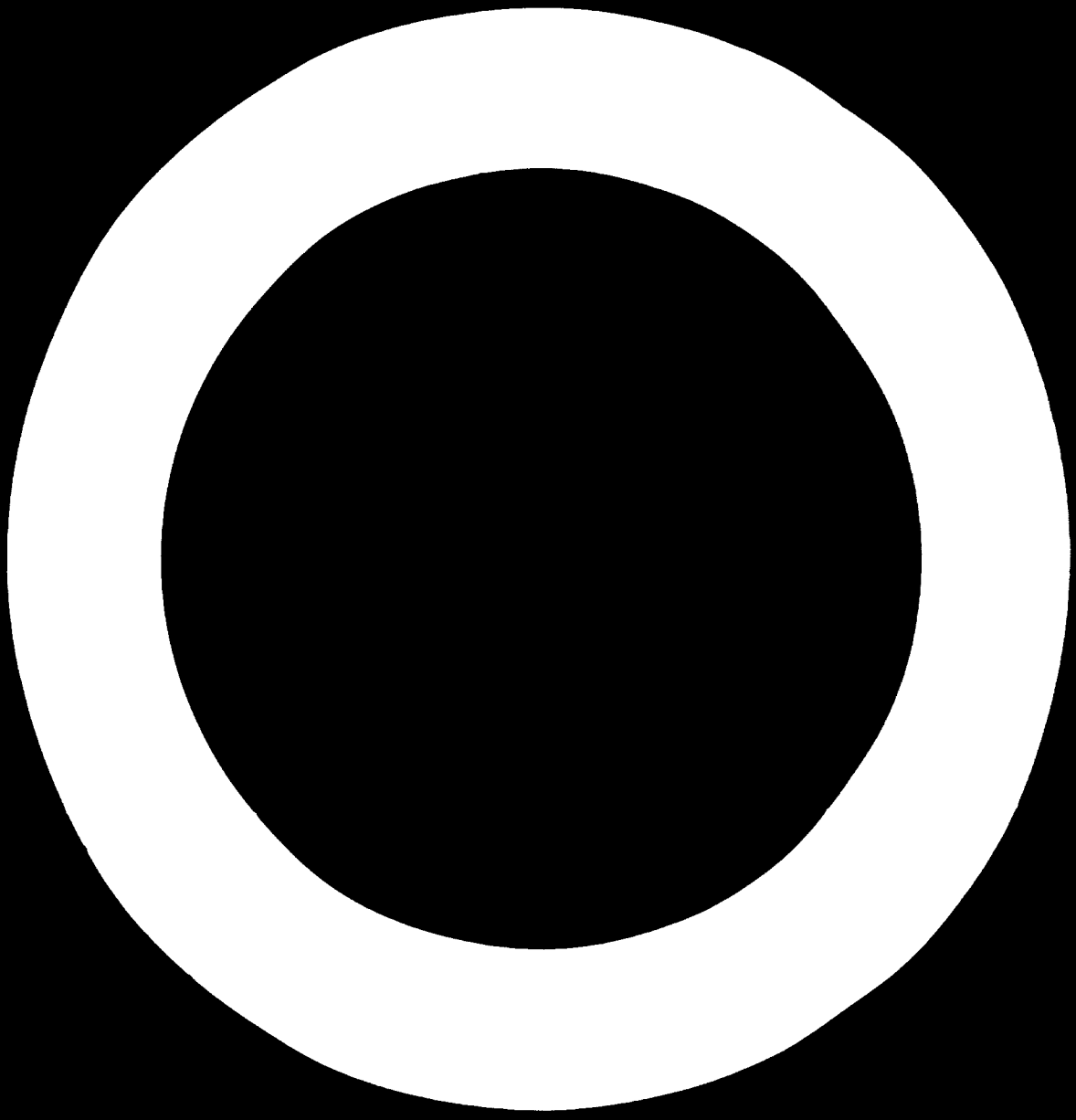
	Total m/m	[illegible]	[illegible]	[illegible]	[illegible]
Industrial Programming Data/ Project Manager	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Industrial Programming Date/EDP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Industrial Planner/Economist	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Industrial Engineer	[illegible]		[illegible]	[illegible]	[illegible]
Industrial Planner/ Econometrician	[illegible]		[illegible]	[illegible]	[illegible]
Documentation Expert/Librarian	[illegible]		[illegible]		[illegible]
Short-term Consultants	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	
Costs (in $)		[illegible]	[illegible]	[illegible]	[illegible]
Associate Expert/ Programming Data	[illegible]	[illegible]		-	-
Associate Expert/ Documentation	[illegible]	[illegible]	[illegible]	-	-



Appendix III: Fellowships

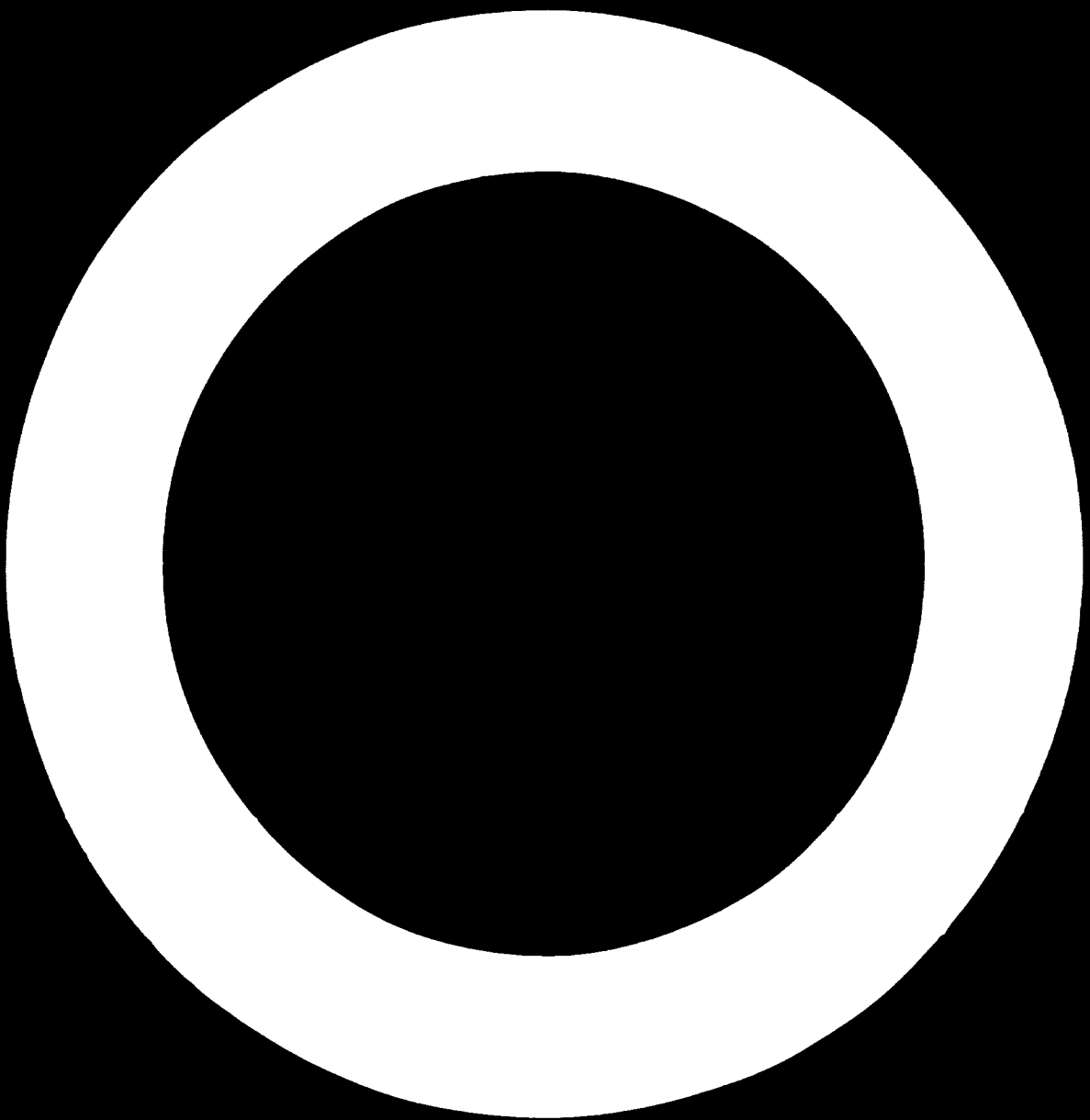
	Number	1972	1973	[illegible]	Total m/m	Costs (in $)
Data Banks/Data Processing	4	4	8	8 + 4	24	13,600
Industrial Economics/Planning	4	6	12	6 + 6	30	16,000
Econometrics	1			12	12	5,000
Economic Statistics Statistical Methods				6	6	3,400
Documentation	1				6	3,400
TOTAL	11	12	24	42	78	
Costs (in $)		6,800	12,600	22,800		42,200

The costs include $400 fellowship monthly plus $1,000 for travel.



Appendix IV: Manning Table - Counterparts

		Total m/m	[illegible]	[illegible]	[illegible]	Costs (in Baht)
Director		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Economists (4)	A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	B	[illegible]	12	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Statisticians (6)	A	[illegible]	12	12	[illegible]	[illegible]
	B	36	12	[illegible]	[illegible]	[illegible]
	[illegible]	36	12	12	12	90,000
	D	[illegible]	6	12	12	75,000
	E	[illegible]		6	12	45,000
	F	6			6	15,000
Data Processing (2)	A	[illegible]	6	12	12	75,000
	B	[illegible]		6	12	45,000
Editor		6			6	15,000
Economists (3)	A	36	12	12	12	90,000
	B	30	6	12	12	75,000
	C	6			6	15,000
Engineers (2)	A	24		12	12	60,000
	B	6			6	15,000
Econometricians (2)	A	18		6	12	45,000
	B	18		6	12	45,000
Statistician		18		6	12	45,000
Librarian		24		12	12	60,000
Documentation Expert		30	6	12	12	75,000
TOTAL		570	114	198	258	
Costs (in Baht)			317,000	525,000	675,000	1,515,000



Appendix V

Request from the Government of Thailand

JOB DESCRIPTION

(UNIDO/..)

Post title: Industrial Programming Data Expert (Project Manager)

Duration: One year, with possibility of extension up to three years

Duty station: Bangkok

Purpose: The Ministry of Industry plans to establish a Centre of Industrial Information and Studies, the core of which will be a Data Bank Unit. The expert should assist in the establishment and operation of the Centre. At the same time he should act as Project Manager for assistance provided to the Centre by UNIDO/SF).

Duties: The expert will be expected to:

1. Advise on inventory and analysis of the need for data on industrial establishments with ten workers and more, particularly on:

   a) need of agencies dealing with industrial firms for elementary data (primarily for administrative and operational purposes);

   b) need of Government agencies (for planning and policy-making purposes) and of private decision-makers for aggregated data.

   The Expert should define priorities among the needs and indicate further potential uses of data;

2. Advise on inventory and analysis of available data on the above mentioned industrial establishments (collection of all forms and questionnaires being filled in by industrial establishments; enumeration and description of administrative and operational records on those establishments; description of each datum in terms of contents, accuracy, frequency of collection, classification in regard to possible coding and system of storing; classification of individual data by confidentiality);

3. Advise on the concept of the information system, taking into account the experience gained during the pilot project. Particular attention should be paid to the establishment of a register, to the integration of available records with the register, to a flow chart of data records and to a system of storing and processing data;

4. Assist in building up the data bank (supervision and evaluation of actual inflow of data and of their processing, determining procedures and frequency of inquiries processing, especially for individual data and for statistical tabulation);

5. Advise on utilization of the data bank and on the promotion of its services (evaluation of inquiries submitted to the Centre; training the users applying core study approach; publishing regularly some data, research studies and information on possible uses of the data bank);

As Project Manager, the expert will be expected to:

1. Prepare and supervise the provision of the UNIDO/UNDP(SF) assistance to the Centre (experts, fellowships, some equipment and books);

2. Co-ordinate the work of experts;

3. Report to the Executing Agency (UNIDO) about the progress of the project.

Qualifications: An industrial statistician/economist experienced in establishing data banks for industry and, if possible, in industrial planning. Managerial abilities would be an additional asset.

Language: English

Annex

List of persons met during the mission's stay in Thailand

1. Ministry of Industry

Professor Yos Bunnag, Under secretary of State for Industry

Dr. Vichitvong Na Pombhejara, Director, Industrial Economic and Planning Division

Mr. Samnao Chulkarat, Chief, Industrial Project and Planning Division

Mr. Pratuan Meesang, Industrial Economics and Planning Division

Mr. Thawansak Sukhawan, Office of the Director

Mr. Ankura Yuad-Yong, Industrial Economics and Planning Division

Mrs. Tawiwan Kriengkripetch, Office of the Director

Col. D. Hedden (USAID), Adviser, Industrial Economics and Planning Division

2. National Economic Development Board

Mr. Vera Ostananda

Mr. Staporn Kavitanon

Mr. Pathai Metharom

Mr. Vinai Tanskul

Dr. Forrest Cookson, Adviser

3. Board of Investment

Dr. Amnu Virawan, Secretary General

Mr. Cheera Panuponse

Mr. Pongsak Angsupun

4. Customs Department

Mr. Kamchorn Sathirakul

5. Revenue Department

Mr. Vit Tantiyakul

Mr. Jaru Srichalumpa

Mr. Warath Koosakul

6. Labour Department

Mr. Tien Ashakul, Director General

Mr. Porn Udompanse, Deputy Director General

Mr. Vichit Samgtong

7. Industrial Finance Corporation of Thailand
   Mr. Tos Pantumsen, Assistant General Manager (Operations)

8. Bank of Thailand
   Mr. Tam Guntrakul, Chief, Department of Economic Research
   Mr. Chavalit Thanachanan, Senior Economist
   Mrs. Ltol Hatasiok
   Mr. Huang M. Senivongse, Bank Examination Dept.

9. Association of Thai Industries
   Mr. Tawee Bunyaketu, President
   Mr. Prakaipet Indhusopon

10. Applied Scientific Research Corporation of Thailand (ASRCT) and
    Technological Research Institute (T.I)
    Mr. C.L. Trenshall, Acting Project Manager
    Mr. Norman Wake, Industrial Economist

11. ILO-Bangkok Office
    Mr. J.G. Van der Laan

12. United States Operations Mission (USOM)
    Mr. Donald C. Marsden, Acting Chief, Private Enterprise Division
    Mr. Ong-Arj Kriengkripetch

13. Centre for Development Planning, National Planning Association,
    Washington, D.C.
    Mr. Alex Rozenthal

14. National Statistics Office
    Dr. Niyom Purakhum

Annex 1

Draft Job Description

Special Industrial Services

POST TITLE: Industrial Development Programmer (Adviser)

DURATION: 6 months, with possibility of extension

DATE REQUIRED: As soon as possible, but not later than 1 January 1971

DUTY STATION: Bangkok

DUTIES: The expert will be attached to the Ministry of Industry and advise the Director of the Industrial Economics and Planning Division (IEPD) on the future preparation of the forthcoming Industrial Development Plan 1971 - 1976. The expert will be expected to assist in connection with the meetings of the Working Group of the National Economic Development Board (NEDB), chaired by the Director of the IEPD, and in the promotion of close co-operation between all public and private parties concerned with the preparation of the Plan. Such co-operation might be manifested in the form of inter-agency working teams. In particular the expert will be expected to

1. Advise on policy guidelines for various industrial sectors taking into account local raw material resources, local demand, export possibilities, existing capacities and other relevant data.
2. Assist in the establishment of inter-agency working teams and advise them on projections for various industrial branches, project evaluation and investment needs, data requirements, manpower and education, infrastructural needs and regional development.
3. Advise on the overall structure of industry. The expert will be expected to work in close co-operation with all relevant units of the NEDB, the Board of Investment, the Ministries of Finance and Economic Affairs, the Bank of Thailand, the Department of Labour, the Industrial Finance Corporation of Thailand and the National Statistical Office.

QUALIFICATIONS: Economist or industrial economist with extensive experience in industrial planning and policy formulation in developing countries. Experience in inter-agency co-ordination is highly desirable.

LANGUAGE: English

BACKGROUND: The 1971 - 1976 Development Plan is presently being prepared by the NEDB. The IDP of the Ministry is responsible for the preparation of the section related to industrial development. A Working Group of the NEDB, chaired by the Director of the IDPD and composed of members from the Ministries of Finance and Economic Affairs, the Board of Investment, the Bank of Thailand, the Department of Labour, and the Association of Thai Industries has so far tried to outline a brief draft version of the Industrial Development Plan. This work has been reviewed and extended in September 1970 by an UNIDO Advisory Mission. New guidelines how to continue the preparatory work as well as concrete proposals mainly with regard to policy measures have been laid down in the mission's report. The inauguration of the Third Development Plan finds the industrial sector much stronger than 5 years ago, though very far yet from its normal role in an industrialized economy. The Plan indicates that a substantial additional increase of industry in the economy can be expected. The share of manufacturing industries in GDP will rise accordingly from 15.8 per cent in 1968 to 21.7 per cent in 1976.

Despite the satisfactory overall increase in output the direction of this growth poses a dilemma. Thailand is gradually moving into a balance of payments problem which tends to indicate that industry will have to carry an increasing share of this burden. While most industrial development in the past was oriented towards import substitution, this is expected to become more and more costly in terms of needed protection. The only feasible answer to this problem points, therefore, in the direction of industrial exports.

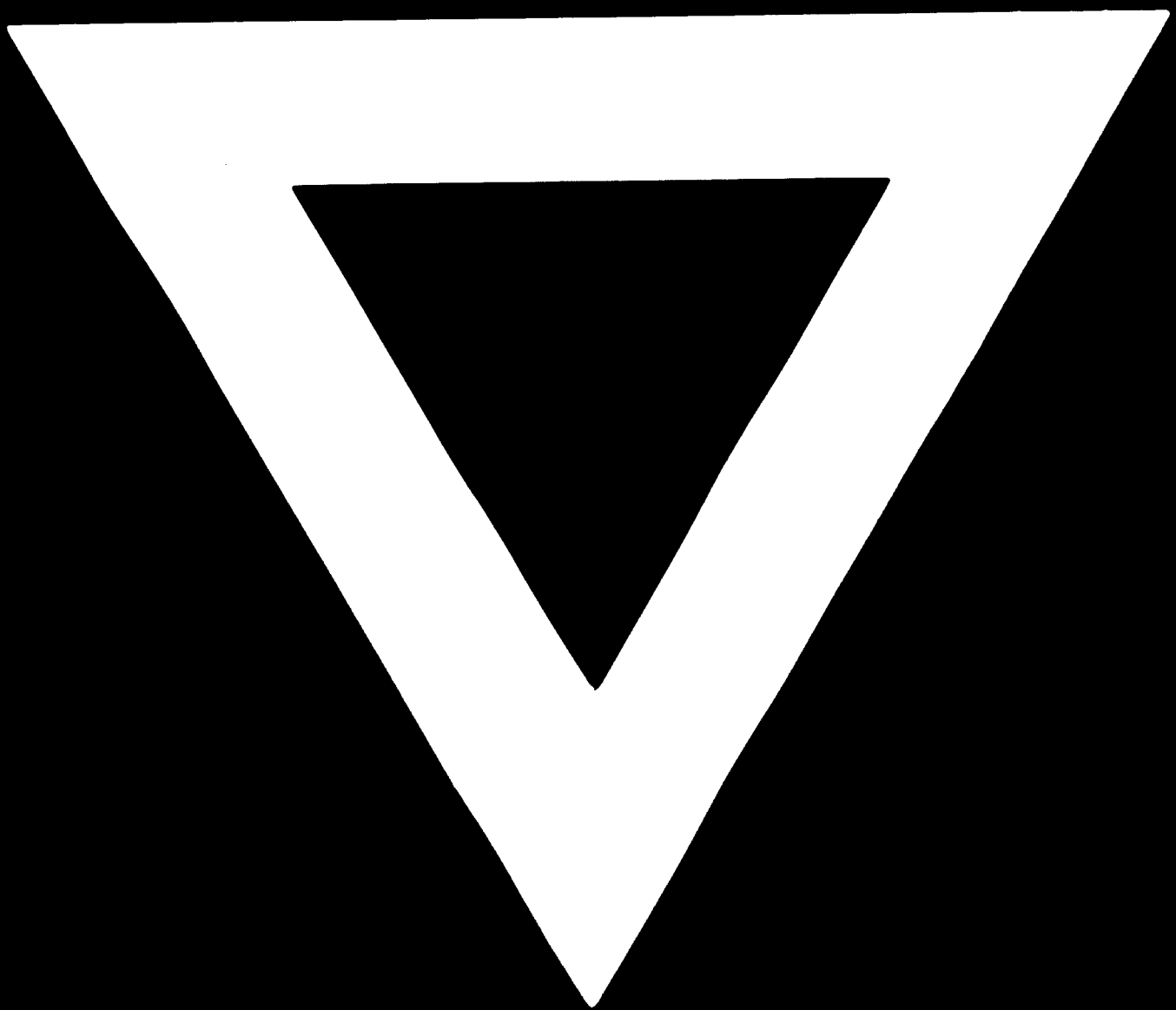
Accordingly does the Third Development Plan for industry propose a drastic change in policy to make this dynamic increase in exports possible. Policy adjustments would be necessary in the

field of investment promotion, fiscal policy, credit policy and a wide range of infrastructure services for the industrial sector which are essential for such an export programme.

The time schedule for the preparation of the industrial plan is dictated by the beginning of the fiscal year and the needs to discuss drafts at the NEDB and the Cabinet.

Approximate dates are

First draft for discussion by NEDB	end February 1971
Final draft for discussion by NEDB	mid June 1971
Discussion by NEDB	mid June - July 1971
Discussion in the Cabinet	August - September 1971
Commencement of implementation	1 October 1971 .



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