

Technical Information and Exchange Services in Thailand *

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1. Country Background

The Country

1.01 The Kingdom of Thailand covers an area of about 514,000 km² which is approximately the size of France. The country extends for a maximum of 1620 kilometres from north to south and 755 kilometres from east to west. The country is divided into five regions : the fertile Central Plain, the mountainous North, the semi-arid Northeast, the natural resource-rich East and the topographically diverse South.

1.02 The population consists of about 54 million with about 80% living in rural area. In the late 1960s concern about the rapid population growth rate of around 3.2% a year led to an official national family planning programme. By 1981 the growth rate has fallen to about 2.2%. At present it is about 1.6% a year and is projected to fall to 1.3% by 1991.

1.03 Since 1932, when a revolution saw the end of absolute monarchy, Thailand has been governed by a constitutional monarch who exercises sovereignty through a parliament, a cabinet and the courts. The present monarch, King Bhumibol Adulyadej, who has been on the throne since 1946, is widely regarded as the most beloved Thai ruler since King Chulalongkorn, his grandfather. On July 2, 1988 he became Thailand's longest reigning monarch, overtaking his grandfather. The King's authority lies not with the constitution but with respect in which he is held by the Thai people. He has tapped a well of affection over many years by travelling tirelessly around the country supporting irrigation projects and similar schemes. The affection has therefore in large part been inspired by his involvement with his subjects, a concern evidenced by the multitude of projects he has initiated on their behalf.

The Economy

1.04 From 1960-80 Thailand experienced a rapid and sustained economic growth rate. GDP growth was remarkably high at 8.4% p.a. in the 1960s and 7.2% p.a. in the 1970s. However, during the first half of the 1980s, the economy was somewhat affected by the global economic recession, high interest rates, unstable exchange rates, and the collapse of commodity prices, Thailand, together with other ASEAN countries, appeared to have lost some of the growth momentum. The GDP growth rate fell to 4.1% in 1982 and 3.5% in 1986. However, the year 1987 could be described as new economic era after 4-5 years of perseverance and sacrifice, and the economic growth for the year was about 7%. The growth rate for 1988 was approximately 10%.

1.05 Apart from relatively favourable rate of economic growth over the past two decades. Thailand's economic structure has undergone a dramatic change. The share of agriculture in GDP has fallen sharply from 30% in 1975 to 17% in 1986 while the share of the manufacturing sector has risen from 18% to 21% over the same period. During this period an even more dramatic change was observed in the share of manufactured exports. In 1986, for the first time. Thailand exported more manufactured goods than agricultural products. The share of agriculture products fell from 48% in 1981 to 34% in 1986 while the share of manufactured products rose from 36% in 1981 to 55% in 1986. A number of relatively new exports also emerged in recent years including sport shoes, gems and jewelry, toys, artificial flowers, motor cars, farm machinery and machine tools, to name a few.

The Industrial Structure

1.06 For the past two decades Thailand has accelerated its industrialization programme which as a result has witnessed the birth and development of several important major industries. These include textiles and garments, electrical appliances and parts, electronic chips and circuit boards, auto parts and accessories, machine and hand tools, ceramics, plastic and rubber products, cement, chemicals, food processing, and metal industries, just to mention a few of the rapidly expanding ones.

1.07 In the Sixth National Economic and Social Development Plan (1987-1991), the government through

close consultation with private sectors will aim to encourage the manufacturing industrial sector and the service sector to invest in rural areas with development potential so as to create employment opportunities. Small-scale industries are to be promoted, and high priority basic and heavy industries such as petrochemicals, sponge iron, soda ash, and fertilizers, will be developed where economically viable.

1.08 Industrial activities are highly concentrated in the Central Region. In terms of value added, industrial production in Bangkok and neighbouring provinces accounted for 25.1-67.1% of Gross Provincial Product in 1986, while for the other provinces the average value was 8.7%.

1.09 In 1987 there were 87,221 registered factories, out of these 46,637 were rice mills. 17,056 factories (19.6%) were situated in Bangkok Metropolis and 5,614 (6.4%) were in five provinces around Bangkok. Excluding rice mills 53.9% of these registered factories were in Bangkok Metropolis and the five neighbouring provinces.

Small-Scale Industry

1.10 There are two criteria to define small enterprise of small-scale industry in Thailand. One criterion is based on the size of capital, i.e. not more than 5 million baht (US \$200,000) registered capital. The second criterion is based on employment size, i.e. a factory employing fewer than 50 workers is regarded as a small industry, and one employing less than 200 workers is a medium industry.

1.11 More than 60% of registered factories employ less than 10 workers, and small industries account for over 90% of all manufacturing and processing enterprises. In 1984, 98.4% of registered factories were small-scale and medium-scale. In Bangkok Metropolis, 63.7% of registered factories employ less than 10 workers, and 31.1% employ between 10-49 workers, excluding rice mills.

1.12 New producers increase considerably in the last few years. In 1987, 2,790 new factories were registered, an increase of 16.76% compared to 1986 and demand for new labour force was 71,496 persons. In 1988, 40% new factories were established compared to 1987, with 2.5 times increase of capital investment and 100% increase of work force.

1.13 It is without doubt that small and medium scale industries occupy a very important position in Thailand's economic and industrial structure. Small industries also study an important role in Thailand's exports. A recent study concluded that exports by small industries exceed in value those by their large counterparts.

1.14 A large majority of small industries are owner-managed. These entrepreneurs mostly design and develop their own technology based on past experience. It is not surprising then that a number of independent surveys have consistently pinpointed the following problem area faced by small industries : shortcomings in managerial capabilities ; problems concerning availability, reliability and price stability of raw materials; lack of skills in marketing, technology, product development and diversification, quality control, etc; scarcity of skilled workers, technicians and engineers; and shortage of capital, lack of access to regular financial institutions for investment funds and promotional privileges.

1.15 The government's policies on the promotion and development of small industries and realized and coordinated through various government agencies, e.g. the Department of Industrial Promotion (DIP) under the Ministry of Industry ; the Thailand Institute of Scientific and Technological Research (TISTR), and the Department of Science Service under the Ministry of Science, Technology and Energy (MOSTE); Institute of Food Research and Product Development under Kasetsart University; and Engineering Institute of Research and Development under Chulalongkorn University and King Mongkut's Institute of Technology. These agencies conduct research and development in the field of energy, material, agriculture machinery, construction, electronics, other industrial products, crops as raw material for agroindustry, etc. They provide extension and information services to entrepreneurs and interested persons; and also provide technical, managerial and entrepreneurial development trainings.

1.16 There are several measures envisaged in the Sixth Plan, e.g. promulgation of Promotion of Small and Medium Scale Industries Act, strengthening of coordination between public and private sectors, increasing financial and new business creation supports and adjusting the role of the Ministry of Industry etc.

2. Information and Small Industries

Information Needs

2.01 The Technological Promotion Association (Thai-Japan) or TPA conducted a survey on the needs of industrial information in 1987. Target groups were 300 enterprises within metal working, electrical-electronics, plastic and food processing industries. The study findings were similar to the result of seminar held in January 1988 organized by Unesco and MOSTE.

2.02 Information needs are classified into 3 main groups:

- 1) Technological information consists of production technique, product standards and testing, energy

saving technique, high and advanced technology, research and development articles, machine and equipment directories, and sources for technology transfer.

2) Industrial economics information consists of raw material cost, economic conditions, local market, exports and imports, consumer index, financial sources, manpower availability, labour cost and industrial linkages.

3) Management information consists of productivity improvement and cost reduction, production management, repair and maintenance, legal and tax matters, codes and regulation.

Information Services

2.03 The individualistic Thais like diversity. It shows in their cuisine, which tosses together a large number of ingredients to give a subtle mix of flavours. Similarly, Thailand appears to have ample diversify traditional information services organized in various academic and public libraries, in information units of government agencies, and in financial institutions. The usage of these institutions is relatively high, and largely free of charge. The existence of public, electronic information services is, however, an exception, to be found in a few agencies that occasionally have access to a foreign database vendor; and in a small number of governmental agencies which are connected on line to the National Statistical Office.

2.04 The functions of most information units cover usual activities ranging from information collection, classification and dissemination. The difference will be the specific objectives relevant to their functions. One example is primary role of Rural Industrial Information services Unit (ISU) Project, under the Department of Industrial Promotion (DIP), which is to assist rural entrepreneurs by supplying them with various technical and management information related to their businesses. Mostly this involves processing specific information requests which ISU receive from individual entrepreneurs, e.g. names and addresses of suppliers of raw materials of equipment, details on how to obtain government financial of other services, data on prices, etc. In addition, ISU publishes and distributes information materials providing useful information about industry conditions and trends in Thailand. ISU's information services are intended to help entrepreneurs make better decisions about their businesses which can lead to expanded production and employment. ISU also serves as a clearing house for other groups seeking information on the problems and opportunities of rural industries in Thailand.

Issues and Problems

2.05 For the evaluation of the Fifth Plan, problems and issues concerning information system were identified as follows :

- 1) There was a lack of systematic and continuous data collection with the consequence that information was scattering among various public and private agencies
- 2) There was duplication of technology transfer from abroad by private enterprises which caused increase of trade deficits.
- 3) Services of technical information were not systematic causing ineffectiveness and inconvenience for users.
- 4) There was a lack of S & T information system
- 5) There was no national agency coordinating various technical information units.

3. Description of Information System

3.01 At present, a national technological data bank has not been established but there are information systems with specific science and technology component in several ministries organizations as follows.

Ministry of Industry (MOI)

3.02 ASEAN Technology Information System (ASTIS). The objective is to create communication links for the exchange of information on technology transfer among ASEAN countries. Industrial Technology Information Unit (ITIU) of the Industrial Economics and Planning Division under MOI acts as a national coordinator.

3.03 Ministry of Industry Information Centre (MIIC) of the Industrial Economics and Planning Division collects industrial statistics and disseminates them in the form of quarterly publication.

3.04 Business Opportunities Centre of the Industrial Development Centre (IDC), Department of Industrial Promotion (DIP) provides the following information for Thai investors: information on promising industrial products, import, export foreign joint-venture, technology and production processes.

3.05 Metal working and Machinery Industries Development Institute (MIDI) under the DIP provides a wide range of services in support of the metal working and machinery industries including research and development, product testing, and dissemination of technologies and production techniques to entrepreneurs through training, seminars and consultancy services.

3.06 Rural Industry Information Services Unit (ISU) Project under the DIP matches the inherent strengths of the DIP with the inherent weaknesses of rural entrepreneurs who tend to be isolated-by distance, language, culture and education-from the rest of the world and generally not able to readily access information and services relevant to their specific marketing financial, technical of other problems. At the same time, outside groups that have the potential to benefit rural enterprises are often unaware of the problems and opportunities facing rural enterprises. ISU thus attempts to serve as a two-way communication link between rural entrepreneurs and other groups, facilitating greater contact between them for mutual benefit.

3.07 The Thai Industrial Standards Institute (TISI) is responsible for specification of standards of locally produced industrial goods as well as for the implementation of the industrial standards. The institute also certifies local industrial goods which have passed quality standard tests. TISI produces regularly TIS and buyers' guide.

Ministry of Science, Technology and Energy (MOSTE)

3.08 The Department of Science Service has as its role to conduct research and development on natural resources and industrial products, in order to increase the value added of these natural resources and products. It also renders technological information service to the entrepreneurs and interested persons.

3.09 The Thailand Institute of Scientific and Technological Research (TISTR) has the task of coordinating applied scientific research programmes among government agencies and institutions, foreign and international agencies, as well as in executing research contract between private industries. It also provides specific assistance to Thai enterprises as well as guidance to the industrial sector regarding its potential development e.g. through effective local resource utilization, and appropriate use of technological advances like genetic engineering and biotechnology, microelectronics and solar energy.

3.10 The Technology Transfer Centre (TTC) under Office of Permanent Secretary. MOSTE has the responsibility for developing and transferring technologies as well as acting as core organization in co-ordinating international technology transfer, in order that technology development in Thailand will be accelerated by utilizing appropriate technology transfer. TTC publishes quarterly document on "Technology" monthly technology transfer newsletters on "Industrial Technology" and "Rural Technology", annual report on "The status of Thailand imported technology transfer through contractual arrangement", and monograph on "Science and Technology".

Office of the Board of Investment (BOI)

3.11 The BOI promotes foreign technology transfer through the promotion of foreign direct investment and the Investment Promotion Acts. BOI has established a Computerized Information System with one of its objective to provide quick and reliable reports and information on BOI's activities to other agencies or organizations, and to the investors themselves.

The Federation of Thai Industries (FTI)

3.12 FTI is a private organization with the objective to bring together top Thai industrial decision makers for building up industrial, economic and trade sectors' role in overall social-economic plans of the country. One of its policy is to promote international transfer of technology and development of indigenous technology in order to help Thai industries reach international standards and be competitive at the world market level.

The Technological Promotion Association (Thai-Japan)

3.13 TPA is a non-profit organization which has actively been involved in the promotion of technology transfer, particularly from Japan, by various means e.g. translation of texts and industrial manuals from Japanese to Thai, and provision of seminars and training courses. TPA is establishing a Technological Information Centre for Small and Medium Scale Industry Development to disseminate information as a vital mechanism for TPA to communicate not only with its members but also with other nonmember entrepreneurs.

The Science and Technology Development Board (STDB)

3.14 STDB was formed in 1985 to promote the role of science and technology in the growth of the agricultural and industrial sectors of Thailand. STDB is concerned with the development of in-country research and development capabilities, as well as with the ability to acquire needed technologies and assimilate them into the scientific and industrial base of the country. The STDB programme is a joint effort of the Royal Thai Government and the U.S. Agency for International Development.

3.15 Unlike the S & T community of some countries, Thai scientists, engineers and industrial

decision makers

already possess awareness of the utility of problem-solving information services that provides a routine and efficient interface to the two vast stores of man's knowledge : the expertise and experience of humans, and the repositories of organized data and documents. In Thailand this interface, which depends heavily on electronic facilities and global communications, remains to be strengthened and sustained.

3.16 In the short run, the proposed four-year STDB information programme intends to establish quickly a focal point for coupling the Thai S & T community in industry, government and academia to domestic and global data and information resources. The primary objective, however, is a long-term one, ie. to catalyze and assist the development, within this community, of an S & T information service sector capable of serving its clientele directly and fully.

3.17 To realize the objective, STDB proposes some activities e.g.

- 1) Establishment of a **Technical Information Access Centre (TIAC)**, as an electronic information service prepared to serve the S & T community as soon as possible on an evolving basis;
- 2) Establishment of a cooperative network of selected existing information service organization in industry government and academia, for the purpose of assisting them, gradually and without charge, to a) establish compatible electronic information services b) upgrade their facilities, and c) train their personnel.

Conclusion

3.18 To summarize, Thailand is at the verge of embarking on a broadly based, not yet adequately coordinated, activity of public-sector database building. These databases are valuable sources of problem solving S & T information, and should be available to the scientific and industrial communities of Thailand. More economical means are also becoming available to access the vast resources of foreign electronic information. So far, however, Thailand possesses only sporadic modern S & T information services-those mediating access to and provision of information in electronic form. A network emerged from CITIES could be linked with the STDB information services programme and other information systems in Thailand which could be beneficial for all concerned.

*àÊ'Íã' Regional Conference on Improving Technical Information and Exchange Services (Cities)-Õè Small Business Promotion Project, Kathmanthu, Nepal àÁ×èÍà'×Í'ØÁÀÒ¾Ñ',i 2532

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