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Summary Report of the NAS - NRC Workshop on
SCIENCE PLANNING AND POLICY IN THAILAND

Bangkok, Thailand

3 - 6 July 1972

Jointly Sponsored by the

National Research Council
Thailand

and

The National Academy of Sciences
United States of America

This report is a staff-prepared summary of the workshop, "Science Planning and Policy in Thailand," held in Bangkok 3 - 6 July 1972, under the joint auspices of the Board on Science and Technology for International Development of the National Academy of Sciences and the National Research Council of Thailand. This report is submitted to the Agency for International Development under contract AID/csd-2584, Task Order 1, Project No. 28.

A final report of the workshop has been prepared by the National Research Council of Thailand and is transmitted as an appendix to this report.

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. CONCLUSIONS AND RECOMMENDATIONS	5
III. AGENDA AND PANEL MEMBERS	8
IV. HIGHLIGHTS AND COMMENTS	11
APPENDIX A. NAS Panel Briefing Meeting	17
APPENDIX B. Workshop on Science Planning and Policy in Thailand, 3 - 6 July 1972, Final Report . .	[separately paged and stapled]

I

INTRODUCTION

The U.S. National Academy of Sciences - National Research Council of Thailand (NAS - NRC) Workshop on "Science Planning and Policy in Thailand," held in Bangkok, July 3 - 6, 1972 is the first such cooperative endeavor undertaken by the two institutions, although not the first scientific workshop in Thailand in which the National Academy of Sciences has participated. The workshop was one of a series of bilateral and regional workshops and advisory panels that the NAS has undertaken in East Asia.

A major aim of NAS programs carried out by the Board on Science and Technology for International Development (BOSTID) is to bring together distinguished U.S. specialists with their counterparts in developing countries, joined by senior government officials from planning and technical departments, as well as leaders from the educational, industrial, and other interested communities, to discuss significant problem areas in the relationship of science and technology to economic and social development. Aside from the valuable exchange of information and experience inherent in such gatherings, there are joint deliberations on the formulation of various alternative policies that might usefully be considered by the participating developing countries, as well as external-assistance agencies.

The application of science and technology to development is an issue of great relevance to Thailand. The country has a population of over 35 million people, with an annual population growth rate of about 3.3 percent a year;

this increase partially offsets a relatively fast-developing economy, which had an average increase of 8 percent per year in gross national product between 1960 and 1970. Moreover, the economic growth of the country has been spurred by U.S. military spending in Southeast Asia, and a decline in military activity will inevitably affect the economy. Internally, the economy is based on agriculture; rice is the major export. Because the world market for rice is declining, Thai agriculture will need to become much more diversified.

As a country with a largely rural population, rapid population increase, relatively low per capita income, and an agricultural economy, Thailand needs sound planning for social and economic development. Science and technology are potentially important tools in this national development process, but the potential has not been fully exploited. The purpose of the NAS - NRC workshop was to identify points at which these tools should be put to work in the national interest and to suggest ways in which they might be strengthened and used more effectively.

Although the workshop described in this report was the first one in Thailand directly co-sponsored by the NAS, there has been previous scientific cooperation between Thai organizations and the Academy. In late 1970, the Academy selected a panel of U.S. nutritionists and food technologists to participate in a Seminar on Protein Food Promotion. The seminar, organized and sponsored by the Institute of Food Research and Product Development at Kasetsart University, the Department of Health of the Ministry of Public Health, and USAID/Thailand, prepared recommendations concerning national nutrition policy and programs, which were approved by the Thai Cabinet and given to appropriate government agencies for implementation.

The next important contact between the NAS and the Thai scientific community occurred in July, 1971, when Dr. Pradisth Cheosakul called on NAS Foreign Secretary, Harrison Brown, in Washington, D.C. to discuss the interest of the Thais in developing a national science policy and the possibility of convening a bilateral workshop to help identify key problems and issues and suggest possible solutions.

In describing the potential value of a workshop, Dr. Pradisth provided background on the existing apparatus for science planning in Thailand. At present, planning and operational control of research and programs to apply scientific and technological knowledge to economic and social development are carried out on a fragmented, agency-by-agency basis. The National Research Council considers matters of science and technology in relation to national development programs, but the large Council includes both the social and the natural sciences and acts in an advisory capacity without any authority for decisions. In practice, priorities and allocation of funds for science and technology are set by the National Economic Development Board.

Dr. Pradisth suggested that Thailand critically needs much greater scientific contributions to the identification of national scientific and technological needs, priorities, and consequent decisions on the allocation of human and financial resources. The proposed workshop should elaborate ideas for alternative mechanisms by which this scientific input might be made. Another objective would be to broaden understanding, in government offices, of the issues by bringing together scientists and technologists with government planners and policy makers.

In December, 1971, Dr. Victor Rabinowitch, BOSTID Staff Director, visited Thailand to follow up the Washington discussions with Dr. Pradisth. After

this visit, the Office of Science and Technology of AID asked the NAS to formulate plans for a workshop on science policy and planning. A BOSTID staff member visited Bangkok in March, 1972, to confer with the NRC on tentative program details, and the Governing Board of the NAS approved the workshop proposal in April, 1972. Further planning for the workshop was facilitated by the June, 1972, visit of Dr. Pradisth to Washington.

After consultation with the Thai planning committee, the NAS selected an eight-member panel of specialists to participate in the workshop. Dr. Harrison Brown agreed to serve as panel chairman. Members of the panel, assisted by staff officers John Hurley and Noel Vietmeyer, spent about 1 week in Bangkok for the workshop, which met July 3 - 6, 1972. Over half the panel had previous professional experience in Thailand.

Two weeks before the workshop, the NAS panel gathered in Washington for a one-day briefing session. Presentations were made by representatives of the World Bank, the Department of State, AID, and Dr. A. K. Solomon, author of a 1970 UNESCO report on science policy in Thailand. The meeting provided an excellent opportunity for the panel members to get a broad perspective on Thailand's social, political, and economic situation as seen by experienced eyes. The agenda of the briefing meeting is attached as Appendix A.

The proceedings of the Bangkok workshop have been reported in detail in a Final Report prepared by the Thai NRC. The report contains daily agendas, lists of participants and observers, texts of major addresses, and recommendations of the workshop and five sectoral working groups. The Final Report of the Thai NRC accompanies this report as Appendix B.

This report is limited to highlights and essential information of interest to AID.

II

CONCLUSIONS AND RECOMMENDATIONS

The final plenary session of the workshop, presided over by Prof. Insee Chandrastitya, Chairman of the NRC Executive Committee, adopted a statement of findings and recommendations aimed at broad national needs for science policy and planning. Each of five sectoral working groups also prepared recommendations relevant to their assigned sector. The workshop participants decided that it would be inappropriate to endorse formally each of the five sectoral reports, since there was not enough time for all participants to join in the specific sectoral discussions. The statement on plenary recommendations calls attention to the sectoral reports and points out that they indicate the range of problems in each sector and provide a number of possible solutions.

The workshop participants agreed that science and technology have a major role to play in the economic and social development of Thailand. They further agreed that "Thailand lacks well-defined policy, adequate financial support, and appropriate organizational mechanisms for the development and maximum utilization of its manpower and material resources in science and technology."

In light of this assessment, three major recommendations were described as "absolutely essential" for strengthening the existing weaknesses:

1. The government should appoint a committee to conduct a thorough study of the structure of science and technology in Thailand and to make

proposals for an effective governmental administrative structure that can define, plan, and implement national policy in science and technology to accelerate economic, educational, and social development.

2. Without regard to any future organizational changes, current planning for science and technology should be based on adequate analysis. Existing capability and expertise in appropriate government agencies should be used to perform detailed analyses of the problems related to science, technology, and national development. The results of these studies should be integrated in the Third National Economic and Social Development Plan as early as possible to contribute effectively to the welfare of Thailand during the next 5 years.

3. Urgent attention should be given to improving present personnel policies, including policies on salaries, promotion and reward systems, and career opportunities, particularly for young scientists, technologists, and technicians. Current personnel policies relating to careers in science and technology limit, and would continue to limit, the advancement of science and technology and their effectiveness in meeting the needs of the country.

Since the precise structure and authority of a governmental science policy and planning agency involves political as well as administrative and technical issues, the workshop participants did not attempt to formulate its exact dimensions. Their strategy, rather, was to utilize the unanimous recommendation of virtually the entire Thai scientific community; its impact should convince the government that there is an urgent need to create a coordinating
r science and technology. If this recommendation is accepted, the
ional details can be worked out next.

Recommendations 2 and 3, cited earlier, are complementary to the first. Regardless of any future organizational changes, the linkage between social and economic development and the scientific and technological capability of Thailand should be strengthened, first, by using more effectively the analytical and planning capability that already exists in a number of governmental organizations and, second, by making scientific and technical careers more attractive to young people. Present advancement in scientific posts follows civil service guidelines based on seniority, thereby rewarding age more than accomplishment.

The recommendations of the working groups deal in considerable detail with the needs of five sectors that rely heavily on scientific and technical inputs. The working group topics were

1. Industry and Engineering
2. Natural Resource Utilization
3. Agricultural Production
4. Medicine, Public Health, and Environmental Quality
5. Academic Sciences

The detailed workshop recommendations and recommendations of the working groups are in the Final Report of the NRC, attached as Appendix B. These recommendations have been submitted to the National Executive Council for their consideration and approval.

III

AGENDA AND PANEL MEMBERS

AGENDA

Following is the schedule of the workshops; detailed agendas of the plenary sessions and working groups are contained in the attached Final Report prepared by the NRC (Appendix B). Monday, July 3, was devoted to meetings of the U.S. panel with representatives of various Government of Thailand agencies. The actual workshop meetings began on Tuesday, July 4.

Monday, July 3, 1972

MORNING Meeting of all NAS panelists at National Economic Development Board

Separate visits by panel members to:

Ministry of Public Health; Ministry of Industry;
Ministry of National Development; Kasetsart University

AFTERNOON Separate visits by panel members to:

Medical faculties of Mahidol University; Royal Forest Department; Applied Scientific Research Corporation of Thailand; Office of Atomic Energy for Peace

Meeting of all NAS panelists at National Research Council

Tuesday, July 4, 1972

MORNING Opening ceremony

Remarks by Dr. Pradisth Cheosakul
Secretary - General, National Research Council of Thailand

Remarks by Dr. Harrison Brown
Chairman, NAS delegation

Remarks by Mr. William Littlewood
Associate Director, Office of Science and
Technology, AID

Keynote address:

Lt. General Boonruan Buacharoon
Under-Secretary, Office of the Prime Minister,
representing the Chairman, National Executive
Council

AFTERNOON Working Groups I - V in session concurrently

Wednesday, July 5, 1972

MORNING Working Groups I - V in session concurrently

AFTERNOON Plenary session

EVENING Drafting committee; Preparation of workshop recommendations

Thursday, July 6, 1972

MORNING Final plenary session

AFTERNOON Continuation of final plenary session

Closing ceremony

NAS PANEL MEMBERS*

Harrison S. Brown, Panel Chairman
Foreign Secretary
National Academy of Sciences
Washington, D.C.

Brewster C. Denny
Dean, Graduate School of Public Affairs
University of Washington
Seattle, Washington

Arnold B. Grobman
Dean, Rutgers College
Rutgers University
New Brunswick, New Jersey

William A. W. Krebs
Vice President
Arthur D. Little, Inc.
Cambridge, Massachusetts

John P. Milton
Scholar
Woodrow Wilson International Center
Washington, D.C.

NAS Staff Officers

John G. Hurley
Professional Associate, BOSTID
Office of the Foreign Secretary
National Academy of Sciences
Washington, D.C.

Howard A. Minners
Chief, Geographic Medicine Branch
National Institute of Allergy and
Infectious Diseases
National Institutes of Health
Bethesda, Maryland

Albert H. Moseman
Senior Advisor
Malaysian Agricultural Research
and Development Institute
Selangor, Malaysia

Sidney Passman
Head, Science Policy Research Section
National Science Foundation
Washington, D.C.

Noel Vietmeyer
Professional Associate, BOSTID
Office of the Foreign Secretary
National Academy of Sciences
Washington, D.C.

The NAS panel members participated in the five working groups as follows:

Group I - Industry and Engineering

Dr. Denny
Mr. Krebs

Group II - Natural Resource Utilization

Dr. Brown

Group III - Agricultural Production

Dr. Moseman

Group IV - Medicine, Public Health,
and Environmental Quality

Dr. Minners
Mr. Milton

Group V - Academic Sciences

Dr. Grobman
Dr. Passman

*Thai participants and observers are listed in Appendix B.

IV
HIGHLIGHTS AND COMMENTS

Workshop Participation

Attendance at the workshop consisted of 8 NAS panel members, 50 official Thai participants, and 15 - 20 observers from a variety of organizations such as UNESCO, AID, and the Science Policy Studies Unit of Sussex University. Although a larger group was on hand for the opening ceremony, the average attendance at most workshop sessions ranged from 50 - 75 people. Even though Thai participation included individuals at the highest level, attendance was good at all sessions.

Thai participants represented the following institutions:

1. Various departments of five government ministries, including Industry, Agriculture, Education, National Development, and Public Health.
2. Five institutions of higher learning, including the Asian Institute of Technology and Chulalongkorn, Thammasart, Kasetsart, and Mahidol Universities.
3. Research institutes, including the Applied Scientific Research Corporation of Thailand and the Institute for Population and Social Research.
4. Governmental economic and planning organizations, such as the Board of Investment, the National Economic Development Board, and the Prime Minister's Office.
5. One regional organization, the Southeast Asian Ministers of Education Secretariat.

Regretably, one category of participants was missing -- scientists and engineers from the private sector. In part, their absence simply indicates that there is not a very large scientific and technological sector in Thai industry. It also illustrates the lack of communication and coordination between the governmental science establishment and the scientific activities of business and industry.

Apart from the lack of private-sector representation, the Thai participants were an excellent selection of the key people in the country concerned with science and technology. Most government agencies were represented by their top civil servants as well as the key operational staff members of the appropriate divisions. Planners and economists were engaged in the workshop discussions along with the scientists and administrators. Younger scientists were well represented, as well as their senior colleagues, and were not reluctant to express their views. The result of this good cross-section of scientists, technologists, planners, and administrators was discussions that were realistic and candid.

The highest level of government displayed an interest in the workshop. Plans for the workshop were approved in advance by the National Executive Council, the highest executive body of the government. The Chairman of the National Executive Council (equivalent to Prime Minister) was scheduled to address the workshop participants at the opening ceremony. At the last minute, official duties prevented the Chairman from attending, but his personal representative, Lt. Gen. Boonruan, gave the address.

Workshop Structure and Organization

In working out plans for the workshop program, the NAS and NRC decided to use the working-group approach in order to give attention to important development-related sectors as well as the central, national-level needs of science policy and planning. Each of the five working groups was led by a Thai chairman who was an experienced, respected scientist or administrator in the subject field. Each chairman was assisted by a rapporteur. Both the NAS and Thai participants were assigned to a particular working group for the entire workshop. English was the working language of the meetings.

Several months before the workshop, the NRC invited some local participants to prepare background papers for each working group. The papers provided necessary information on the policies and operations relevant to the sector to be discussed, and commented on major problems and issues. A considerable amount of effort was put into the preparation of this background material, and it was extremely useful in helping to focus the discussions.

Throughout, the workshop emphasized discussion rather than academic presentations. The absence of formal papers and the fairly small size of the working groups encouraged maximum involvement in discussions by all participants.

The workshop meetings took place at the offices of the National Research Council - Applied Scientific Research Corporation - National Documentation Centre about 5 miles outside Bangkok. The meeting facilities were satisfactory. Plenary sessions were held in the spacious library of the Documentation Centre, and working groups met in conference rooms in two buildings of the office complex. Sound equipment was available, and fast typing and mimeograph service was provided. A staff cafeteria on the premises was available for lunches.

A large secretariat, composed of NRC staff members, performed a necessary and difficult job with efficiency and great kindness. Their help was invaluable and greatly appreciated.

Perhaps one organizational fault that appears in retrospect was that the workshop schedule was too crowded. Although lengthening a conference often dissipates some of the vigor with which the work is approached, another day for exploring the issues in greater depth would probably have been useful.

Press Coverage

The local press covered the workshop, particularly the opening ceremony which was also covered by television news reporters. Several stories and photographs appeared in Thai-language newspapers during the week of the meeting.

Consultations

Five of the eight NAS panel members have continuing professional contacts in Thailand. Their acquaintance with Thai colleagues made available extra background information and insights on the workshop subjects and enabled Thai scientists and officials to hold numerous informal consultations with the NAS panelists on particular scientific or departmental matters.

In the week before the workshop, the NAS staff officer conferred in Bangkok with NRC officials, the UNESCO science policy advisor to Thailand, the program officer of the AID mission, and the director of the Regional Economic Development Office.

Perspective

The Government of Thailand is now in a political transition; the previous cabinet and parliament have been abolished, and leadership is provided by a small National Executive Council. It is likely that the governmental power will be widened and normalized in the near future, but this transition has been a time of considerable reorganization.

In this political backdrop, the Workshop on Science Planning and Policy was significant for two major reasons:

The first reason was timeliness. Because political fluctuations affect the science planning and policy process, the changes should be well considered and shaped by scientists and technologists as well as politicians and administrators. The workshop initiated the important process of designing a policy and planning mechanism that integrates scientific and developmental considerations.

Second, the workshop resulted in a consensus among the scientific and technical community on both the need for and potential shape of an effective, central science policy and planning unit. This consensus, which had not been developed previously, should add force and credibility to the workshop recommendations.

In view of all the foregoing elements, it appears that the chances are good that the primary recommendations of the workshop will be accepted by the National Executive Council. If so, the workshop will have served as an important catalyst in making science and technology more relevant to the social and economic development of Thailand. The consequent organizational work will probably present program opportunities for AID and other donors of

technical assistance, and the mandate of a new scientific planning and policy unit would undoubtedly extend to coordinating aspects of existing technical assistance programs.

The Secretary - General of the NRC has already proposed a plan to implement the recommendation to use existing capability to analyze the scientific and technological components of the next 5-year plan. Further implementation of workshop recommendations should be assisted and expedited by the presence of a resident UNESCO science policy advisor who recently assumed his duties in Bangkok.

APPENDIX A

NAS Panel Briefing Meeting for
Workshop on Science Policy and Planning in Thailand

Tuesday, June 20, 1972
Room 200-B, Joseph Henry Building

10:00 AM Remarks - Dr. Harrison Brown

 Workshop background and objectives - John Hurley

 Remarks on science policy in Thailand - Dr. A.K. Solomon

 Science, Technology, and Development in Thailand -
 Mr. Anthony Neylan and Mr. Christian Merat, World Bank

 Current Political and Economic Conditions in Thailand -
 Mr. A.E. Bergesen, State Department

1:15 PM AID Interests in Science, Technology, and Development -
 Mr. William Littlewood, AID

 Workshop Agenda and Role of Panel - Dr. Brown, Mr. Hurley

 Travel and Administrative Arrangements - Mrs. Cecelia
 Allman, Mr. Hurley

3:00 Adjournment