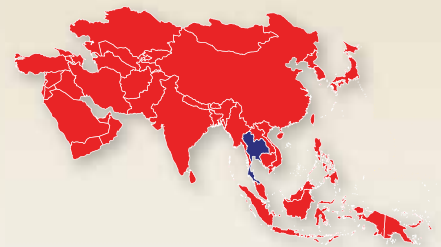
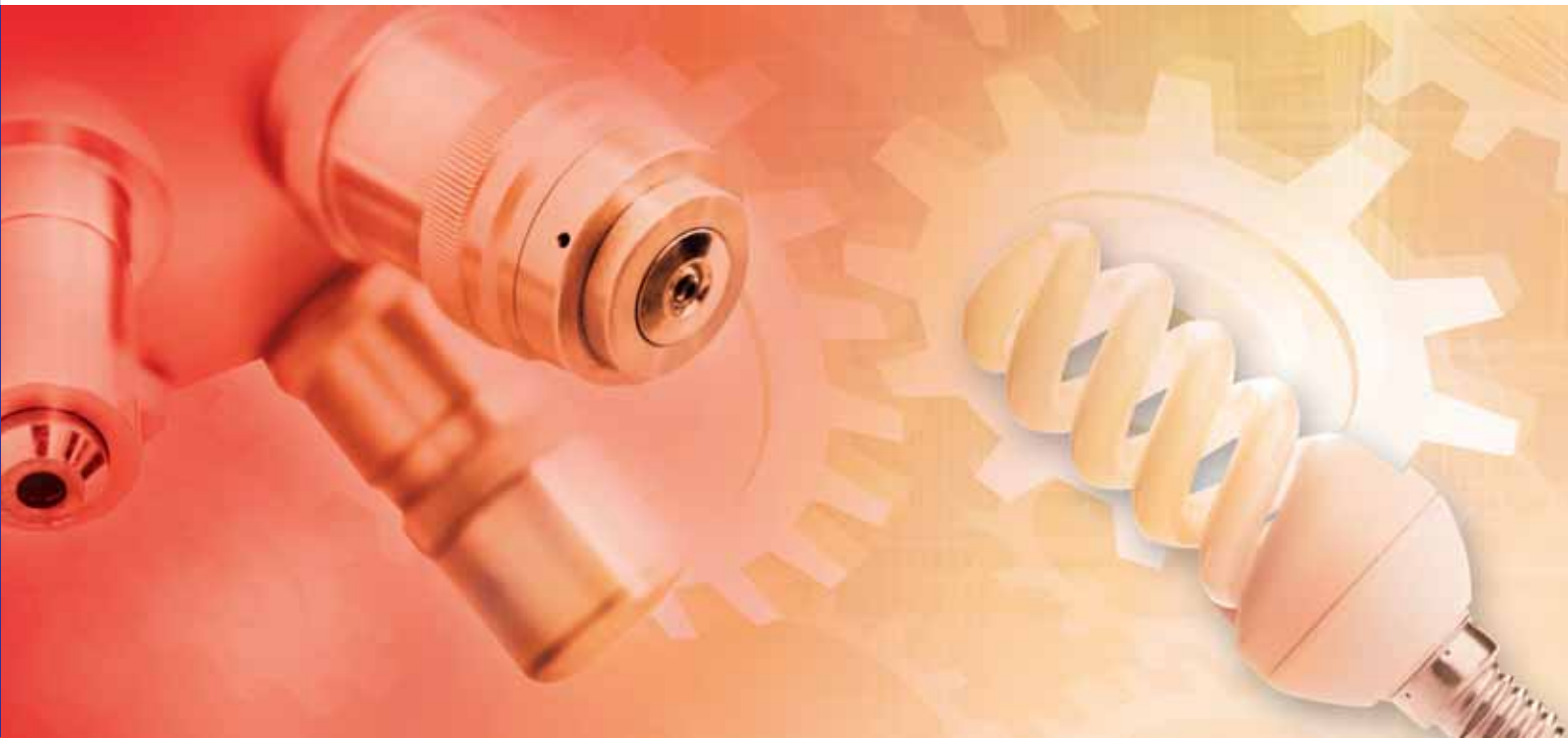




Science, Technology & Innovation Policy Review

Thailand 





Science, Technology & Innovation Policy Review

Thailand 



NOTE

The designations employed and the presentation of the material do not imply the expression of any opinion on the part of the United Nations concerning the legal status of any country, territory, city or area, or of authorities or concerning the delimitation of its frontiers or boundaries.

Material in this publication may be freely quoted or reprinted, but acknowledgement is requested, together with a copy of the publication containing the quotation or reprint to be sent to the UNCTAD secretariat.

This publication has been edited externally.

Symbols used in some of the tables denote the following:

Two dots (..) indicate that data are not available or are not separately reported.

Use of a dash (-) between dates representing years (e.g. 2008–2010) signifies the full period involved, including the beginning and end years.

Reference to “dollars” (\$) means United States dollars, unless otherwise indicated.

Details and percentages in tables do not necessarily add to totals because of rounding.

PREFACE

The Science, Technology and Innovation Policy (STIP) Reviews prepared by UNCTAD aim to contribute to the development of national capacities in this field in order that national STI plans and programmes better contribute to development strategies and to improve the competitiveness of the productive sectors. These reviews are intended to serve as an analytical instrument which examines a set of proposals from an external and neutral perspective, and to make some suggestions for action. They are not a rating mechanism.

The STIP Review of Thailand has three fundamental goals: to offer an up-to-date assessment of the framework conditions and interactions that characterize Thailand's national innovation system; to provide a number of recommendations for strengthening policies and measures in order to improve national technological capabilities and encourage innovation; and to offer more detailed assessments in two areas critical for Thailand's development, namely supporting innovation in small-scale agriculture and promoting the development of human resources in STI.

The STIP Review of Thailand was conducted in response to a request by the Government of Thailand, and received the support of the Ministry of Science and Technology and of the National Science, Technology and Innovation Policy Office. It was undertaken by a team of experts which carried out two missions in Thailand, in October 2013 and June 2014. It involved more than 70 interviews with representatives of government bodies, research institutions, universities, professional associations and chambers of commerce, business incubators and technology licensing offices, companies and non-governmental organizations. An initial draft of this document was discussed with more than 80 experts and national stakeholders at a workshop held in Bangkok on 12 December 2014. The comments and suggestions made there have been taken into account in the preparation of the final draft.

This Review would not have been possible without the cooperation of the National Science, Technology and Innovation Policy Office and, in particular, H.E. Pichet Durongkaveroj (Secretary-General and, since August 2014, Minister of Science and Technology) and Kanchana Wanichkorn (Director of the Department of International Affairs and national focal person for this Review). A special thanks is owed to Puangrat Asavapisit, Sakarindr Bhumiratana, Naksitte Coovattanachai, Krisda Monthienvichienchai, Thanin Pa-Em, Damri Sukhotanang, Chachanat Thebtaranont, Orapong Thien-Ngern and Kan Trakulhoon, members of the National STIP Review Steering Committee that provided guidance to this project. A special thanks is also owed to Pongthep Akratanakul, Panee Boonyagukul, Nakorn Chantasorn, Akarawit Kanchana-opas, Thaweesak Koanantakool, Chen Namchaisiri, Kitipong Promwong, Piniti Ratananukul, Saowaruj Rattanakhamfu, Morakot Tanticharoen, Carmela Torres and Chaicharn Wongsamun, who also provided substantive inputs and comments to the review. Gratitude is also extended to all participants in the national workshop and to the persons and entities, too numerous to be listed, that generously contributed their comments and ideas.

The assessments, opinions and conclusions expressed in this document are entirely those of the UNCTAD secretariat.

ACKNOWLEDGEMENTS

This STIP Review was prepared under the overall direction of Anne Miroux, Director of the Technology and Logistics Division of UNCTAD, and under the direct supervision of Ángel González Sanz, Chief of the Policy Review Section (UNCTAD). Marta Pérez Cusó (UNCTAD) has coordinated the Review. Jean-Eric Aubert and Kathryn Stokes contributed two background reports, on the national system of innovation and on the agricultural innovation system respectively. Thanaphol Virasa participated in the first field mission. Michael Lim (UNCTAD) provided valuable comments throughout the review process.

The manuscript was copy edited externally by Praveen Bhalla and typeset by Stéphane Porzi. Nadège Hadjemian designed the cover.

CONTENTS

Note	ii
Preface	iii
Acknowledgements	iv
Abbreviations	ix
Executive summary	xi
CHAPTER I GENERAL CONTEXT OF SCIENCE, TECHNOLOGY AND INNOVATION IN THAILAND	1
A. Key socio-economic trends	2
B. Science, technology and innovation performance in Thailand.....	7
1. STI inputs	7
2. STI outputs	9
3. Overview of firms' innovation activities	11
CHAPTER II THAILAND'S INNOVATION SYSTEM: CRITICAL OBSERVATIONS AND POLICY RECOMMENDATIONS	17
A. The rationale for fostering innovation	18
B. The innovation climate: Trends and issues.....	19
1. Framework conditions	19
2. The productive sector.....	20
3. Public research and technology organizations	22
4. Educational and training establishments	24
5. Intermediary organizations.....	25
C. Government policies: Initiatives and shortcomings	26
1. Institutional arrangements and national STI plans	26
2. Governance issues.....	27
3. Innovation promotion schemes.....	29
4. Tax Incentives.....	30
5. R&D programmes.....	30
6. Science parks	32
7. Human resources, education and culture	32
8. Patents and licences	33
9. Conclusions	34
D. Policy recommendations: Ten strategic thrusts for change	34
1. Moving leaders and institutions out of their comfort zone	34
2. Mobilizing stakeholders for common goals and aspirations.....	35
3. Balancing social, environmental and economic objectives	36
4. Strengthening STI governance and management	36
5. Improving resource management	38
6. Linking innovation actors	39
7. Supporting decentralization	40

8. Expanding international connections	41
9. Taking advantage of megaprojects	41
10. Prioritizing the agenda: Short-term perspectives and long-term developments	42
Annex 1. Organizational structure of the science, technology and innovation policy system of Thailand	47
Annex 2. Excerpt from the National STI Policy and Plan (2013–2021)	48
CHAPTER III SMALLHOLDER FARMING IN THAILAND’S AGRICULTURAL INNOVATION SYSTEM	51
A. Introduction	52
B. Overview of agricultural production.....	53
C. The policy environment	56
1. National development policy.....	57
2. Agricultural policy	57
3. Energy policy.....	58
4. Environmental policy.....	58
5. STI policies.....	58
6. Strengthening policies to promote innovation in agriculture.....	59
D. The agricultural innovation system	60
1. Farmers and farmers’ organizations.....	60
2. Major sources of new knowledge and information for small-scale farmers	61
3. Key issues for policy.....	66
E. Recommendations	66
1. Policy recommendations	66
2. Policy research needs	67
CHAPTER IV ENHANCING THE AVAILABILITY AND QUALITY OF HUMAN RESOURCES IN STI	71
A. The context of STI-related human resource development.....	72
1. Key education trends	72
2. Overview of the education system	74
3. Education policy	75
B. STI-related human resources development in Thailand: Key issues	79
1. Developing human resources in STI to keep pace with an increasingly sophisticated economy	79
2. Enhancing the overall quality of STI education and training	83
3. Fostering effective linkages between universities/research institutions and industry.....	84
4. Leveraging more HRD and technology transfer from TNCs.....	88
5. Maximizing international and regional collaboration and mobility for HRD.....	88
C. Conclusions and recommendations	89
References	95

Boxes

2.1	Building technological and innovative capabilities within firms: The case of the Industrial Technology Research Institute (ITRI), Taiwan Province of China	24
2.2	King Mongkut's University of Technology Thonburi (KMUTT)	25
2.3	The Hard Disk Drive Institute	26
2.4	Finland's innovation policy: Key features	29
2.5	Centex Shrimp: An example of effective R&D collaboration	31
2.6	Comprehensive support for the development of the bioplastics industry in Thailand.....	31
2.7	Ongoing discussions for reform of STI in Thailand.....	35
2.8	Basic principles to guide STI policy design, governance and evaluation in Thailand	36
2.9	How Sri Lanka's public procurement effectively expanded the domestic information technology (IT) services sector	38
2.10	Promoting regional STI policies and programmes: The case of Peru	41
2.11	Recommendations: Strategic thrusts and suggested actions.....	43
4.1	Private sector initiatives to address shortages of management, technical and scientific skills	75
4.2	National policies that include support to STI-related human resources development.....	76
4.3	STI-related scholarships provided by Thai public agencies.....	78
4.4	Human resources development for the railway system megaproject: Addressing the challenge...	81
4.5	The Mechai Pattana School (Bamboo School)	82
4.6.	Engineering Practice Schools at KMUTT	84
4.7.	Thai initiatives aimed at promoting the mobility of researchers.....	85
4.8	Business incubation in knowledge institutions.....	86
4.9	The challenge of commercializing university research	87

List of box tables

4.1	Estimates of human resources required for the railway project	p. 81
4.2	Technology licensing offices in Thailand	p. 87

Tables

1.1	Key economic indicators, 1990–2013	3
1.2	Relative level and impact of published research, selected Asian countries, 2013.....	9

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_9566

