

**THE UNITED NATIONS COMMISSION ON SCIENCE AND TECHNOLOGY  
FOR DEVELOPMENT**

**18<sup>th</sup> SESSION**

**4–8 May 2015**

**Geneva**

**Item 4: Presentation of reports on science, technology and innovation policy reviews  
6 May 2015**

**Contribution by**

**UNCTAD**

**Science, Technology and Innovation Policy Review:**

**Thailand**

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The views presented here are the contributor's and do not necessarily reflect the views and the position of the United Nations or the United Nations Conference on Trade and Development

The background of the slide features a close-up of a silver microscope lens on the left and several interlocking white gears of various sizes in the center and right, all set against a light grey background with a fine grid pattern.

# **Science, Technology & Innovation Policy Review**

## **Thailand**

*Geneva, 6 May 2015*

Marta Pérez Cusó  
Policy Review Section  
Division on Technology and Logistics



Ministry of Science and Technology  
National STI Policy Office  
UNCTAD STIP review team  
National STIP review committee

**2** fact-finding missions  
**1** videoconference  
**+70** interviews  
**+100** stakeholders have participated  
**1** national consultation workshop

**Today:** International presentation

**Forthcoming:**

National presentation (July 2015)  
Customised workshop for policy makers

**Already:**

National action on recommendations

# Thailand's National innovation system



STI Performance

Critical issues

Policy suggestions

## Moderate performance in STI



### LOW R&D EFFORT

Gross Expenditure on R&D: 0.25% GDP  
Private sector 41% of R&D effort

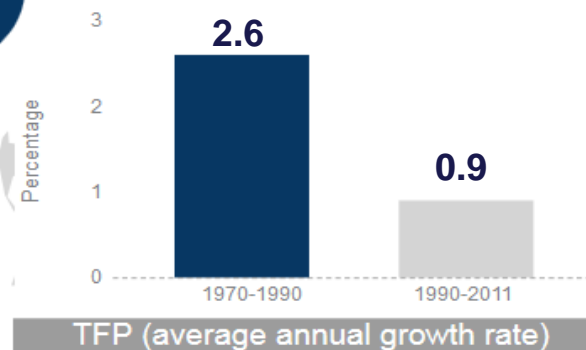


### WEAK INNOVATION & PATENT PRODUCTION

Only 5% of patents granted to residents  
Less than 30% firms conduct innovation activities



### DECLINING PRODUCTIVITY GROWTH RATE

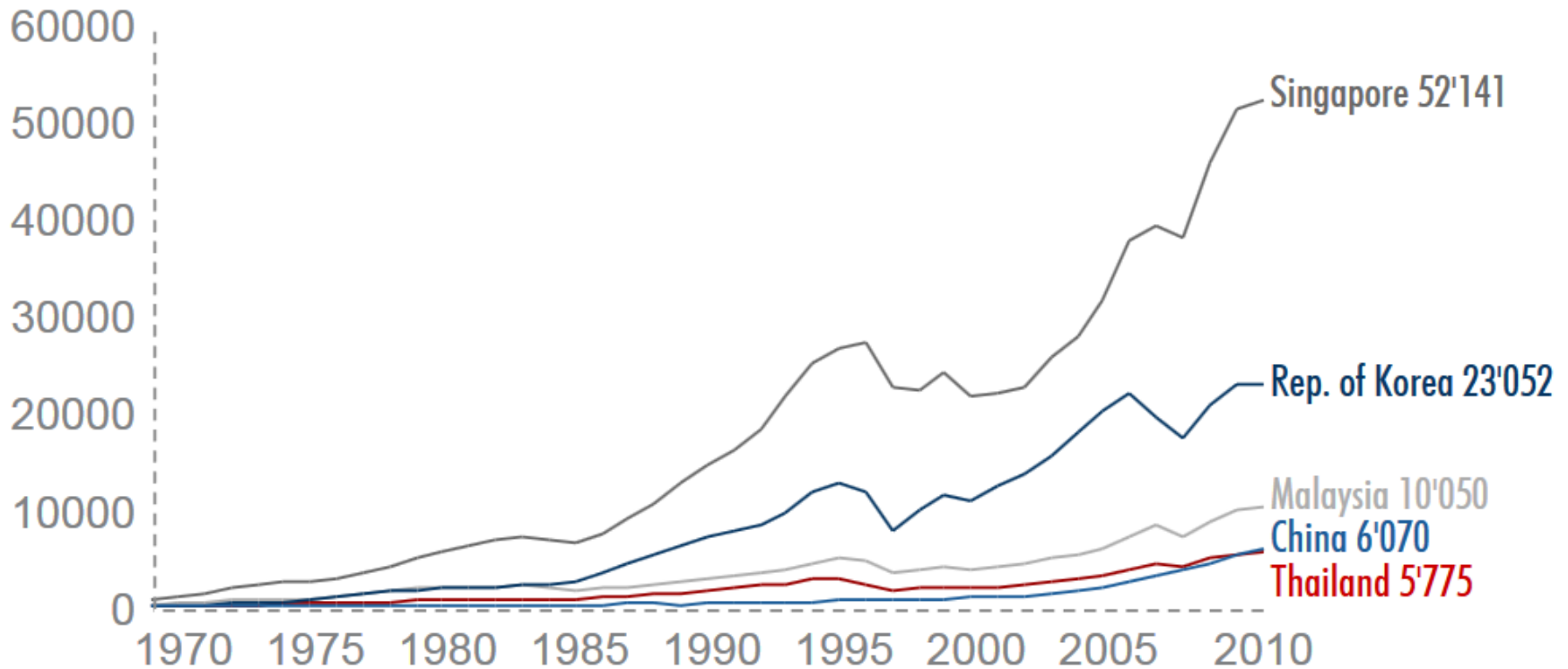


## IS IT A PROBLEM ?

- ✓ REASONABLE ECONOMIC GROWTH RATE
- ✓ VERY LOW UNEMPLOYMENT
- ✓ POSITIVE TRADE BALANCE (or in low deficit)
- ✓ INTERNATIONALLY COMPETITIVE & ATTRACTIVE to FDI



## ... difficulties to get out of the middle income trap



GDP per capita (\$)





# STRONG BASE FOR AN INNOVATION ECONOMY

SIGNIFICANT KNOWLEDGE INFRASTRUCTURE

GOOD BUSINESS CLIMATE







**STRONG BASE FOR AN  
INNOVATION ECONOMY**



**IMPORTANT REGIONAL DISPARITIES**



## CHALLENGES

**No shared perception of urgency to innovate**

**Inadequate STI institutions and system governance**

**Weak linkages with broader sector policies**

**R&D dominance**

**Limited impact of innovation incentives & programmes**



## POLICY RECOMMENDATIONS



ENHANCE STI  
GOVERNANCE &  
MANAGEMENT



STIMULATE  
INNOVATION  
EFFORTS



UPGRADE THE  
EDUCATION  
SYSTEM

# Enhance STI governance & management

## RATIONALISE THE R&D STRUCTURE

Merge overlapping institutions, suppress those that overlap  
Audit R&D agencies



## ESTABLISH CLEAR DIVISION OF ROLES & RESPONSIBILITIES AND HIERARCHY

National STI Policy Committee leading role  
Policy committee effectively chaired by PM  
Include representatives of wider society  
NSTIPO focus on policy advice & evaluation



## CLARIFY THE RESPECTIVE ROLES OF R&D BODIES

Separate funding from performing organisations



## DECENTRALISE STI POLICY & INFRASTRUCTURE

Set up STI offices throughout Thailand  
Upgrade regional S&T parks  
Build local awareness & capacities for STI policies



## Stimulate innovation efforts

### MATCHING FUNDS

Use matching funds to support collaborative R&D

### MEGAPROJECTS

Take full advantage of megaprojects to build domestic technological capabilities

### TAX INCENTIVES

Review current tax incentives for R&D and innovation & their impact on SMEs

### UNIVERSITY - INDUSTRY COLLABORATION

Provide incentives for university industry collaboration: progressively increase % of budget funded from contracts, value researches collaboration with industry for the advancement of their careers

### BRIDGING SCHEMES

Scale-up bridging schemes and organizations that operate at the interface between sources of knowledge and clients seeking knowledge

# Enhance STI education & training

## PROVIDE SUFFICIENT BUDGET



For training teachers in STI, developing STI materials, upgrading equipment, supporting linkages with industry

## MAKE EDUCATIONAL INSTITUTIONS ACCOUNTABLE



Redress underperforming institutions  
Adjust quality criteria to value collaboration  
Raise performance standards

## OVERHAUL TECHNICAL & VOCATIONAL EDUCATION & TRAINING



Make TVET an important mechanism for training skilled workers  
Upgrade teachers' qualifications, teaching methods and resources  
Enhance relevance of non-formal TVET

## REINFORCE EDUCATION-BUSINESS LINKAGES



Programmes that expose students, teachers and academics to work in the private sector should be reinforced and scaled up.





## Smallholder farming innovation

**Agricultural development success**

**35% labour force**

**Labour-intensive farming  
small holdings  
rain-fed production**

**4 MAJOR CHALLENGES:  
land fragmentation  
water management  
soil quality  
labour force**

**Long term plan needed**

**Small-holders remain key &  
require adequate policy support**





## KEY FINDINGS

**STI activities can be better linked to long-term planning in agriculture**

**No central policy / institution to ensure cohesion in R&D and Diffusion.  
Limited monitoring and evaluation**

**Concentration of resources in Bangkok  
Weak central-local linkages**



## RECOMMENDATIONS



*Articulate innovation roadmap*

**Develop soil improvement strategy**

*Consider national biosafety regime*

## FURTHER RESEARCH



*Level of STI awareness at the local level*

**Best practices for establishing local links**

*Options for enhancing agriculture extension services*

**Monitoring & evaluation of R&D**





# POLICY RECOMMENDATIONS



ENHANCE STI  
GOVERNANCE &  
MANAGEMENT



STIMULATE  
INNOVATION  
EFFORTS



UPGRADE THE  
EDUCATION  
SYSTEM

## SUCCESS STORIES



KMUTT



BAMBOO SCHOOL



THAILAND SCIENCE PARK



CENTEX SHRIMP



BIOPLASTICS



iTAP

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