Thailand’s Contribution of STI in achieving SDGs 2030: The community well-being

Ministry of Science and Technology (MOST) - Thailand
May 2018

Outline

1. Overview of Sufficiency Economy Philosophy (SEP)
2. Science, Technology, and Innovation (STI) to support SEP
3. STI for SEP to achieve SDGs
4. MOST Thailand projects
SUFFICIENCY ECONOMY PHILOSOPHY (SEP):
Thailand’s Home-Grown Approach to Sustainable Development

Sufficiency Economy Philosophy (SEP) was introduced in 1974 by His Majesty the late King Bhumibol Adulyadej. SEP is an approach for sustainable development which espouses moderation, reasonableness and prudence as development framework based on knowledge and virtue. The Philosophy attaches great importance to human development at all levels and emphasizes the need to strengthen community’s capacity to ensure a balanced way of life and resilience, with full respect for the environment.

SEP shares ultimate common principles and objectives with SDGs, seeking to eradicate poverty and reduce inequality as a means to achieve sustainable development, and strike the right mindset towards the balance among three dimensions of sustainable development.

The concept of SEP aligns with many goals and targets across the 2030 Agenda for Sustainable Development, some of the more prominent applications of the SEP in our sustainable development endeavor include poverty eradication, food security, sustainable economic growth, sustainable industrialization and sustainable consumption and production. As an approach and mindset framework, SEP can be applied with all 17 SDGs and therefore could support and complement the successful implementation and realization of the 2030 Agenda on Sustainable Development.

Ways and Means of Sufficiency Economy Philosophy (SEP)

Simplify/Simplicity

Sufficiency means to live a reasonably comfortable life, without excess, or overindulgence in luxury, but enough.
Path to Sustainable Development: Thailand’s Experience

SEP founded in 1974

Since the 1997 economic crisis, SEP has become guiding light and Thailand’s development compass

Thailand proves to be the least miserable economy, ranked by Bloomberg (2015-2017)

SEP has become a new rural development strategy in Thailand since the 9th Plan of Socio-economic Development since 2002
How SEP works (Diversify)

Land and Water

30-30-30-10

30 = Mixed Crops
30 = Water Source
30 = Rice Field
10 = Residence animal farms and rice barns

SEP and the Modern World
Thailand 4.0 is an economic model that aims to develop Thailand into a valued-based economy and unlock the country from several economic challenges, including "a middle income trap".

**Objectives of Thailand 4.0**

- **Economic Prosperity**: Positioning local companies for greater growth
- **Social Well-being**: Create a society that moves forward through developing the potential of all members of society and smart farmers.
- **Raising Human Values**: To shift • Life expectancy • Education • Per capita income • Human development
- **Environmental Protection**: • Low carbon society • Livable cities • Etc.

**Transformative Shift**

- Traditional Farming → Smart Farming
- Traditional SMEs → Start Ups
- Traditional Services → High Value Services
- Unskilled Labors → Knowledge worker/High Skilled Labors
- Buy Technologies → Make Technologies

**SEP for SDGs**

- **Agricultural sector**: SEP encourages a holistic farm management system
- **Healthy communities**: SEP promotes well-being of people, environment, society and culture
- **Human capacities and capabilities**: SEP fosters good business practices, good governance
- **Water resources**: SEP highlights the importance of improving water quality, restoring water-related ecosystems
- **Climate change**: SEP promotes green production and conserving ecosystems
- **Economic stability**: SEP encourages risk management becoming resilient to uncertainties
- **Strong government institutions**: SEP inspires enlightened leadership and encourages people-centred development
- **Partnerships towards sustainable development**: SEP is a guiding light at TICA
Mechanisms to promote SEP4SDGs

National ▶▶▶ Regional ▶▶▶ Global

National Committee for Sustainable Development (CSD) chaired by Prime Minister

The 20-Year National Strategies (2017-2036)

The 12th National Economic and Social Development Plan (2017-2021)

SEP for SDGs Partnership

Thailand as ASEAN’s coordinator on sustainable development

Thailand is Prime Mover in ACD and CICA to promote sustainable development

Thailand presented Voluntary National Review (VNR) in June 2017

Global Partnership for Sustainable Development – SDG 17

17 PARTNERSHIPS FOR THE GOALS
TICA’s Partners

Thailand

by TICA
Thailand International Cooperation Agency

Development Partners

Partner Countries
including LDCs, landlocked and small island developing states

SEP for SDGs Partnership Projects

SEP Partners (10 countries)

Future SEP Partners (13 countries)
### Partners for SEP for SDGs Partnership

<table>
<thead>
<tr>
<th>Developing countries with SEP projects</th>
<th>Developing countries agreeing to cooperate with TICA for implementing SEP projects</th>
<th>Development Partners (developed countries and int’l organisations) implementing/to implement SEP projects under trilateral cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesotho</td>
<td>Togo</td>
<td>Germany (GIZ)</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Senegal</td>
<td>South Korea (KOICA)</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>Kyrgyz</td>
<td>UN Volunteers (UNV)</td>
</tr>
<tr>
<td>Chile</td>
<td>Madagascar</td>
<td>UN Office for South-South Cooperation (UNOSSC)</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>Benin</td>
<td></td>
</tr>
<tr>
<td>Tonga</td>
<td>Niger</td>
<td></td>
</tr>
<tr>
<td>Fiji</td>
<td>Costa Rica</td>
<td></td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Burkina Faso</td>
<td></td>
</tr>
<tr>
<td>Mozambique</td>
<td>Tajikistan</td>
<td></td>
</tr>
<tr>
<td>Mongolia</td>
<td>Paraguay</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vanuatu</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Philippines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bhutan</td>
<td></td>
</tr>
</tbody>
</table>

### Science, Technology, and Innovation for SEP

**1988 – 1997**

Science and Technology for Sustainability

"...Science and technology are important factors for development of a country. We should seriously support an invention of technology that is suitable for the needs and conditions of our country. The more we can invent, the more we can save, and the invented technology can be applied in a wide variety of works."

Royally Addressed by His Majesty King Bhumibol Adulyadej, Given at the National Science and Technology Fair, 1 August 1988
UNCTAD Science, Technology and Innovation Policy Review

THAILAND

Moderate performance in STI

LOW R&D EFFORT
- R&D Expenditure is 0.22% of GDP
- Private sector 4% of R&D effort

WEAK INNOVATION & PATENT PRODUCTION
- Only 3% of patents granted to residents
- Less than 5% of overall innovation activity

DECLINING PRODUCTIVITY GROWTH RATE

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

GDP per capita ($)
STI policy to support SDG

**STI for People**
- Create Science Culture
- STEM Learning
- Science Communication/awareness
- Talent Mobility

**STI for Prosperity**
- Technology reduce poverty
- Value Creation and Demand Driven/Productivity through STI Network
- Support One Tambon One Product (OTOP), SMEs
- Smart Farmer
- 3 informatics technology (Hydro/Bio/Geo)

**STI for Power**
- Support Startups
- STI Infrastructure Development
- STI to increase competitiveness
- Innovation-Driven Enterprises (IDE)
- Information Technology Service

**Core STI Strategies**
- Building Wisdom Society
  - Science inspiration
  - STI Capacity Building

People preparedness for the 21st Century
- Gap Reduction

Thailand towards developed Country
- The creation of Innovation Economy
- Technology Frontier
- Wisdom Infrastructure

No one is left behind
- STI Driven for Society and Grassroot Economy
- Opportunities for development through Regional Science Park
Science Preparedness for the 21st Century (Journey)

Inspiration

1. Science Expo
   - 4 region

2. S&T Caravan
   - 2 + 1 routes

Science Square
- Pre-Futurium & Maker space
- 1 BKK + 3 regions

Science Idol
- PM award

Futurium
- STI/Career of the Future

PLEARN PLAY+LEARN

3. Science Square

4. Code.org
   - Learn Programming

5. Science Contest
   - Robotics & Maker competition

6. Science School
   - Total 30 science School
   - (+6)
   - 900 students (+180)

7. Fabrication Lab for STEM @ school
   - 150 schools

STEM LEARNING SYSTEM

Science Idol/PM award
- STI/Career of the Future

Science & Digital Confident

Systematic Learning

JRIST/STI/Advance Science & Digital Confident

Science Scholarship

Junior S&T Program JSTP

Science Square @ Private corporation
- e.g., SCG, PTT, TME, ThaiBev

Science & Digital Confident

Science School
- Total 30 science School
- (+6)
- 900 students (+180)

Fabrication Lab for STEM @ school
- 150 schools

Science Contest
- Robotics & Maker competition

Code.org
- Learn Programming

Science Expo
- 4 region

S&T Caravan
- 2 + 1 routes

PLeon LEARN

Outcome

Science Museum

Mega World (Innovation Museum)

Natural museum

Rama 9 museum

Science Square

Junior S&T Program JSTP

Systematic Learning

Outcome

Science Museum

Natural museum

Rama 9 museum
National Science week

Science Camp

Science Caravan

Science Show

National Astronomical Research Institute of Thailand

Infrastrucuture

Chil, China, USA and Australia
Gap Reduction (Journey)

**A**  
STI Driven for Society and Grassroot Economy

1. **Phase 1**
   - **1 Ampur/1 Agri-Innovator**
   - **OTOP for 10 Provinces**

2. **Phase 2**
   - **1 District/1 Agri-Innovator**
   - **Start-Up helps OTOP**
   - **OTOP for 35 Provinces**

**Outcome**
- **Smart SME/OTOP**
- **Smart Farmer**

**B**  
Opportunities for development through Regional Science Park

1. **Phase 1**
   - **Talent Mobility @ Science Park**
   - **Tech-based Startups (Innovation Hub)**

2. **Phase 2**
   - **Tech-based Startups (Innovation Hub) Region**
   - **Food Fabrication Pilot Plant (Chiang Mai)**

**Outcome**
- **Regional Development**
- **Smart Farmer**

---

**STI for Smart Agriculture**

**Smart Farmer**

1. **Phase 1**
   - **OTOP for 10 Provinces**
   - **OTOP for 35 Provinces**
   - **Start-Up helps OTOP**

2. **Phase 2**
   - **Tech-based Startups (Innovation Hub) Region**
   - **Food Fabrication Pilot Plant Expansion (Region)**

**Outcome**
- **Smart SME/OTOP**
- **Smart Farmer**
- **Regional Development**

---

**STI for Smart Agriculture**

**Smart Entrepreneur**

1. **Phase 1**
   - **OTOP for 10 Provinces**
   - **OTOP for 35 Provinces**
   - **Start-Up helps OTOP**

2. **Phase 2**
   - **Tech-based Startups (Innovation Hub) Region**
   - **Food Fabrication Pilot Plant Expansion (Region)**

**Outcome**
- **Smart SME/OTOP**
- **Smart Farmer**
- **Regional Development**

---

**STI for Smart Agriculture**

**Smart Village**

1. **Phase 1**
   - **OTOP for 10 Provinces**
   - **OTOP for 35 Provinces**
   - **Start-Up helps OTOP**

2. **Phase 2**
   - **Tech-based Startups (Innovation Hub) Region**
   - **Food Fabrication Pilot Plant Expansion (Region)**

**Outcome**
- **Smart SME/OTOP**
- **Smart Farmer**
- **Regional Development**