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Bio-Circular-Green Economy model:

Resilient and Sustainable Development Initiatives for Regional Collaboration

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THAILAND'S BIO-CIRCULAR-GREEN ECONOMY (BGC) MODEL

Bioeconomy

Involves the production of renewable biological resources and the conversion of these resources into value added products

Circular economy

Aims at reusing and recycling resources

Green economy

Determines to keep economy, society and the environment in balance, leading to sustainable development

FOOD AND AGRICULTURE

MEDICAL AND WELLNESS

ENERGY, MATERIAL AND BIOCHEMICAL

TOURISM AND CREATIVE ECONOMY

BIODIVERSITY ⟵ ⟶ **CULTURAL DIVERSITY**

01 **Policy and Management**

02 **Science, Technology and Innovation**

03 **Participation from ALL Sectors**

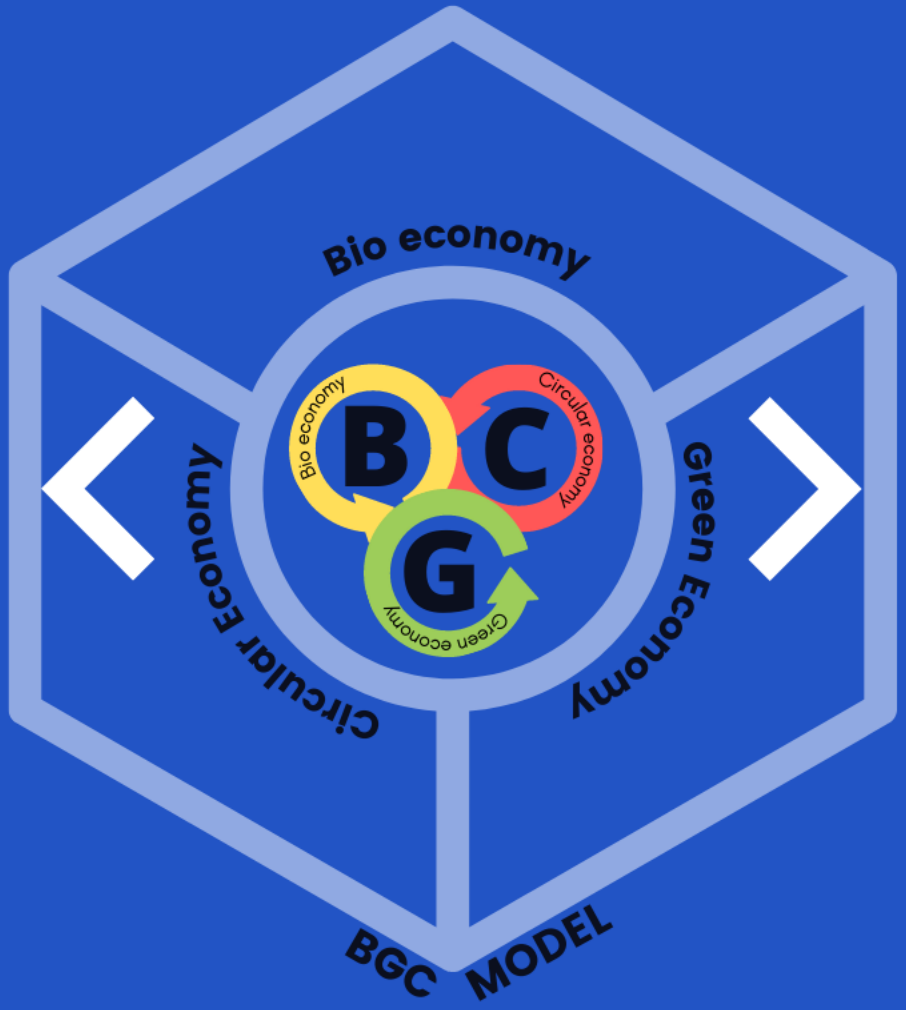
ADOPTING BCG MODEL FOR SUSTAINABLE DEVELOPMENT OF THAILAND

Thailand's 20-Year National Strategy (2017-2036)

Strategy 1:
Well-being of Thai people and society

Strategy 2:
National competitiveness, economic growth, and income distribution

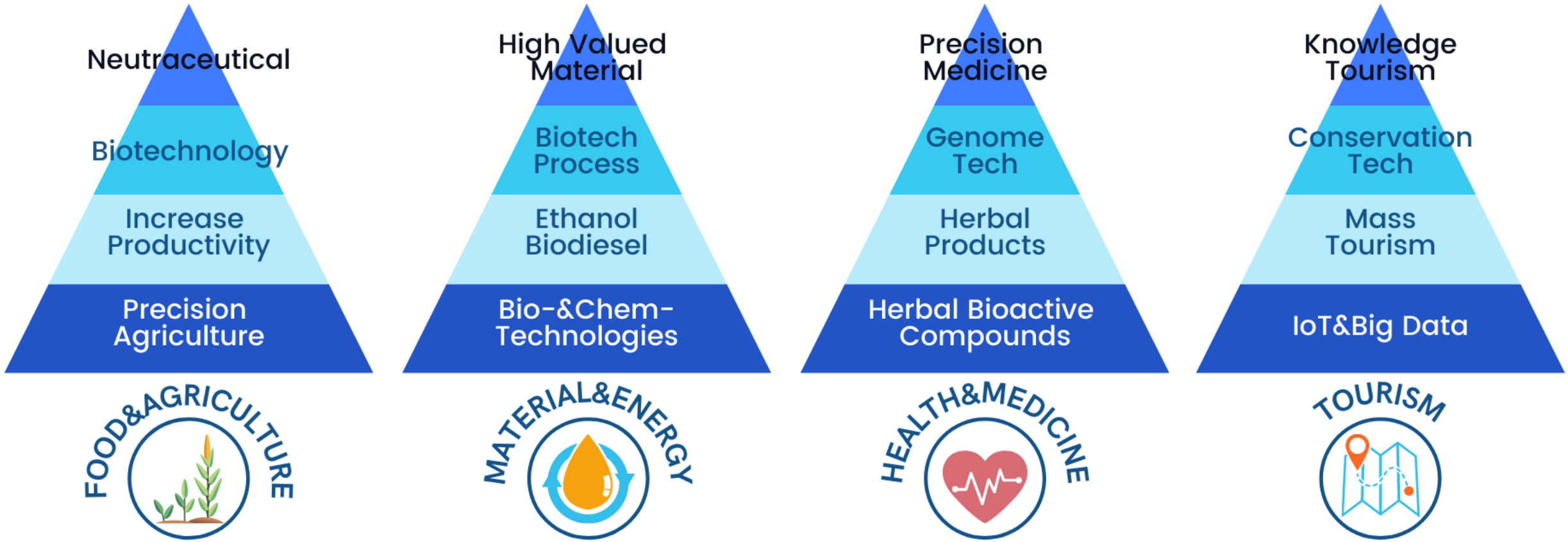
Strategy 5:
Sustainability of national biodiversity, environmental quality, and natural resources



Sustainable Development Goals (SDGs)

Inspired by Thailand Board of Investment (BOI)

VALUE CREATION



CROSS-CUTTING TECHNOLOGY--DIGITAL TECHNOLOGY

REUSE, REFURBISH, SHARING, RECYCLE, UPCYCLE

MAXIMAL LIFE CYCLE USAGE

ZERO-WASTE

2021 - 2027 BCG ACTION PLAN

VISION Growth of sufficiency and quality economy with STI
raise income/life quality/conserve, restore, manage, utilize and increase biodiversity

01

Building the sustainability of natural resource and biodiversity

02

Strengthen local economy

03

Create ability to respond for changing

04

Enhance sustainable competitive for BCG industrial level

THE COMMITTEE OF BIO CIRCULAR GREEN ECONOMY

Executive board Committee

- The Chairman: H.E. General Prayut Chan-o-cha
- The Vice Chairman: H.E. Don Poramudwinai
- The Vice Chairman: H.E. Anek Laothammatas
- Secretary of Committee: Dr.Narong Sirilertworakul (NSTDA)

National BCG Driving Committee

- The Chairman : H.E. Anek Laothammatas
- The Vice Chairman: Prof. Sirirurg Songsivilai
- Secretary of Committee: Dr.Narong Sirilertworakul (NSTDA)

01 Law Sector

Chair: Secretary General of Office of the Council of State

02 Tourism and Creative Economy Sector

Chair: Mr. Kalin Sarasin (Chairman, The Thai Chamber of Commerce and Board of Trade of Thailand)

03 Agricultural Sector

Chair: Mr. Yukol Limlamthong (Former Deputy Prime Minister and Former Minister of Agriculture)

04 Biodiversity Sector

Chair: Mr. Sanit Aksornkoae (Chairman, The National Economic and Social Development Council)

05 Food Sector

Counsellor: Mr. Sakarindr Bhumiratana (Former President of King Mongkut's University of Technology Thonburi (KMUTT))
Chair: Mr. Thiraphong Chansiri (President and CEO of Thai Union Group Pcl.

06 Medical Devices Sector

Chair: Mr. Pairash Thajchayapong (Senior Advisor and Specialist, the National Science and Technology Development Agency (NSTDA))

07 Capacity Building and Human Development Sector

Chair: Mr. Supachai Pathumnakul (MHESI) (Deputy Permanent Secretary of Ministry of Higher Education Science Research and Innovation)

08 Innovation and Infrastructure Sector

Chair: Mr. Isara Vongkusolkit (Honorary Chairman of Mitr Phol Group)

09 Energy Material and Chemical Biology Sector

Chair: Mr. Tawin Wongwanich (Petroleum Authority of Thailand (PTT) Chief Executive Officer)

10 Medicine and Vaccine Sector

Chair: Mr. Piyasakol Sakolsatayadorn (Former Minister of Public Health of Thailand, Chairman of Mahidol University Council)

11 Circular Economy Sector

Chair: Mr. Wijarn Simachaya (President of Thailand Environment Institute)

EXPECTED OUTCOME OF BCG MODEL IN 2027

Sustainability of resources and the environment

- 1/4 reduction in natural resource consumption
- 20% reduction of greenhouse gas emissions
- add at least 0.5 million ha of forest area

Socioeconomic prosperity

- improve income inequality of 10 million people
- reduce the proportion of undernourished population to 5%
- increase health inequality of at least 300,000 people
- increase the number of energy self-sufficient communities by 20%.

Sustainable economic growth

- economic value of the BCG industries up by 1 trillion THB
- 20% increase in the proportion of high-value products and services
- at least 50% more income to the grassroots

Self-reliance

- at least 1 million workers are retrained
- 1,000 new startups and IDEs
- improve negative technology balance of payment by at least 20%
- 20% reduction in medical and health supplies import

Why?:

Thailand should move towards "Circular Economy"

Low Resource Effciency

- During the past 10 years, Thailand's domestic material consumption (DMC) per capita has increased by 28%
- Resource effciency is only 1.3$/kg

Future Economic Value

- Opportunity for changing "waste" to "Secondary raw materials"
- Opportunity for new business models-CE such as CE Platform and Sharing Business

Waste Problem

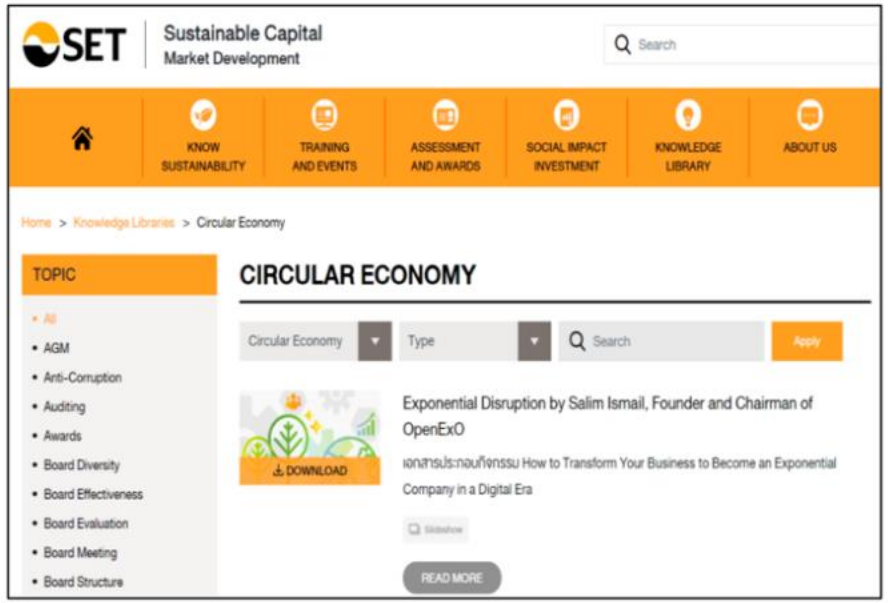
- Recycle rate is only ~30%
- 77% of municipal solid waste disposal facilities are improperly managed
- Marine debris negatively affects marine life

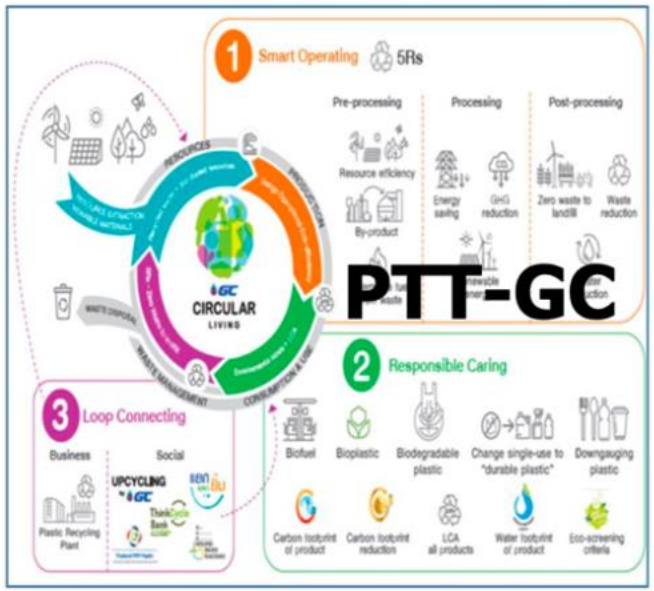
Responding to SDGs

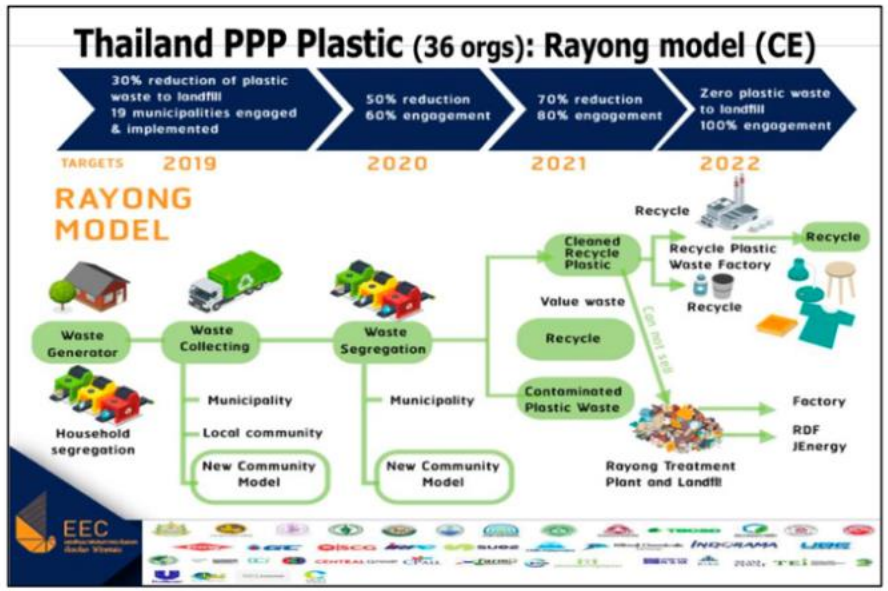
- SDG targets on natural resource (climate change, marine resources, terrestrial ecosystems) show slow progress comparing to other SDG targets

Credit: Dr.Thumrongrat Mungcharoen

Thai business and industries are very active on CE







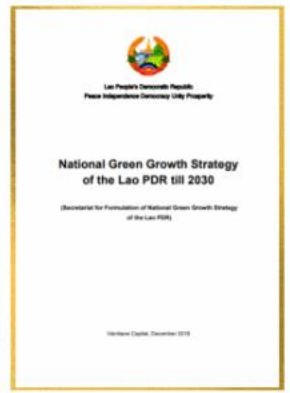
BCG initiatives in ASEAN

SINGAPORE

MALAYSIA

MYANMAR

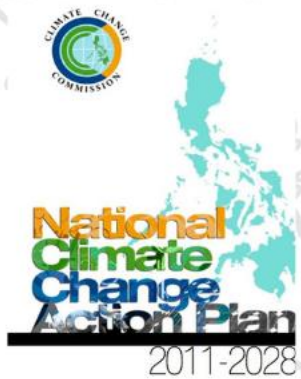
LAO PDR



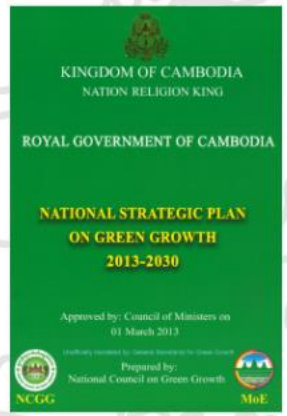
VIETNAM

INDONESIA

PHILIPPINES



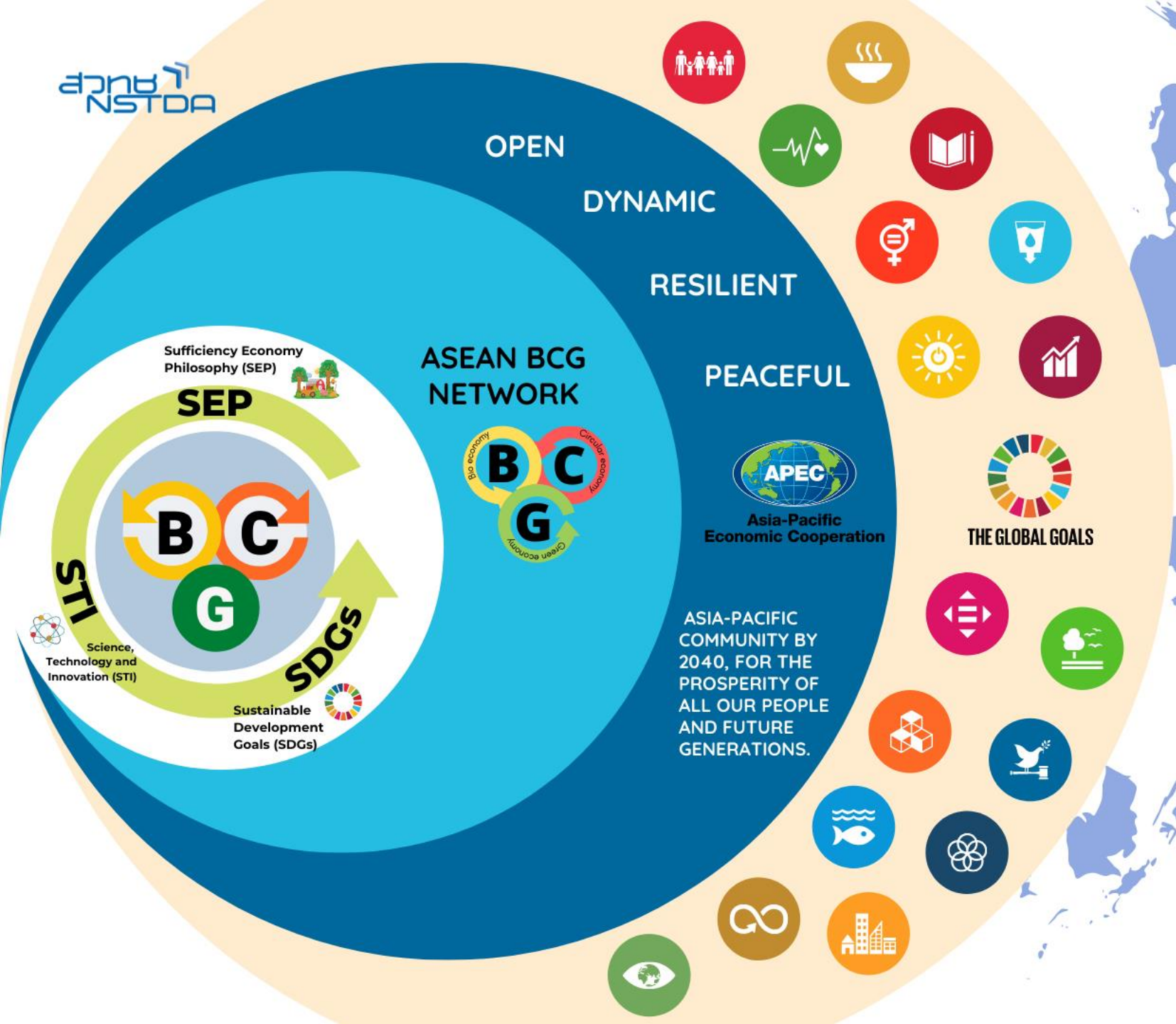
CAMBODIA



BRUNEI

ASEAN Collaboration relevant to BCG

- ASEAN Economic Community (AEC) and ASEAN Socio-Cultural Community (ASCC) as main pillars.
- ASEAN 2025: Forging Ahead Together.
- APEC 2022: Thailand as host country
- "ASEAN Green Agenda", address by HE Gen Prayut Chan-o-cha in 38th Summit, Oct 2021, promoting sustainable and environmentally-friendly economic growth for the region's future
- ASEAN Ministerial Meetings on Science, Technology and Innovation, and on the Environment and subsidiary bodies.
- ASEAN Agreement on Transboundary Haze Pollution
- ASEAN Smart Cities Network
- ASEAN Centre for Sustainable Development Studies and Dialogue (ACSDSD)
- ASEAN Circular Economy Stakeholder Platform, EU-ASEAN Dialogue Instrument (E-READI)



INTERNATIONAL COLLABORATION

Biden's Executive Order on Tackling Climate Crisis at Home and Abroad

Canada Linking recovery to climate goals

EU Green Deal

Japan pledged to be carbon neutral by 2050

South Korea's Green New Deal, with the goal of net-zero emissions by 2050

China pledged to reduce net carbon emissions to zero by 2060

ASEAN BCG Network

ASEAN BCG Network is a coalition of public, private and non-government organizations in ASEAN with strong interest in BCG.

Aiming to strengthen ASEAN capacity in research, development and technology diffusion to enable the adoption of applicable technologies for sustainable development.

The Network will serve as a gateway to catalyze collaboration within ASEAN as well as other non-ASEAN organizations in research, technology demonstration, technology localization and commercialization on BCG.

Upcoming Activities:

BCG Seminar

1st Official Meeting

ASEAN BCG Network

Activities

Website

- BCG-related policy / projects / activities
- Network projects and activities
- News and announcements
- Member organizations and contact info

Project

- Joint research, technology demonstration, technology localization and technology transfer

Event

- Workshops and seminars
- Tech companies to showcase

Share Infrastructure

- Access to BCG infrastructure in Thailand, other ASEAN countries, outside ASEAN

Planning

PHASE I (2021 - 2022)

- Building Awareness
- Calling for member
- Setting up framework or mechanism

Framework/ Mechanism

PHASE II (2022 - 2023)

- Capacity Building
- Link to dialogue partner
- Exchange information

Capacity building program for AMS

PHASE III (2023 - 2025)

- Technology Transfer
- Capacity Building

Collaborative projects among AMS and with dialogue partners

ASEAN Benefits

Researchers and Innovators

- Exchange info from scientific seminars and workshops
- Collaboration with non-ASEAN researchers
- External funding will be made possible through non-ASEAN partners

Businesses

- New business opportunities for new type of business arising from BCG e.g. clean tech, upcycle etc.
- Potential partner with in ASEAN and non-ASEAN tech enterprises

Policy Maker and Regulator

- Learn and exchange info
- Move forward together with ASEAN plan

Examples of seminars/activities from ASEAN BCG network

ASEAN Moving Forward with BCG at 11th ASEAN Science, Technology and Innovation Week (ASTIW-11) 16 June 2021

ASEAN BCG Network officially launched at ASEAN Innovation Roadmap Forum 17 January 2022

ASEAN BCG knowledge sharing webinar introducing general concept of Bio-Circular-Green Economy 14 March 2022

Upcoming activities

The first official meeting

27 June 2022
@Bangkok, Thailand

BCG Day

28 June 2022
@Bangkok, Thailand

ASEAN BCG researcher development program

July 2022
@Bangkok, Thailand

Join us!

Contact:
aseanbcg@nstda.or.th

More Information

https://www.nstda.or.th/en/about-asean-bcg-network

Application form

https://forms.gle/yNRR3PvWbdwZ2Dt99

COLLABORATION FOR IMPACT

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