



Bio-Circular-Green (BCG) Economic Model and Regional Opportunities

Office of National Higher Education, Science,
Research and Innovation Policy Council

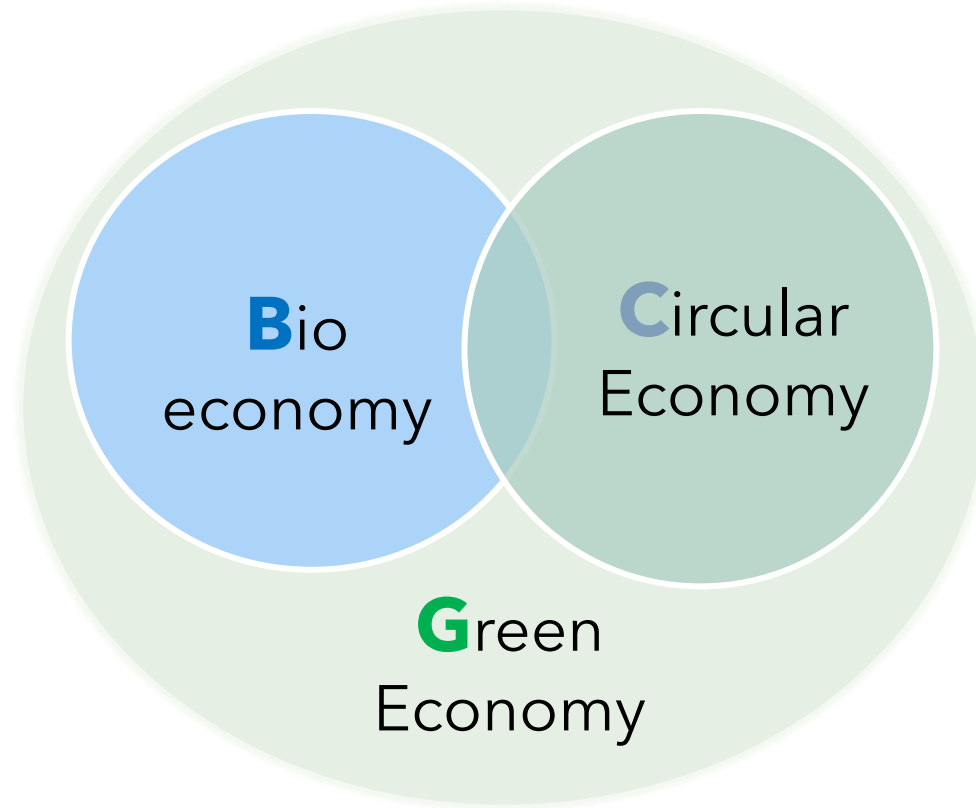
22 Feb 2022

12th High Level Seminar on Sustainable Cities



Bio-Circular-Green Economy

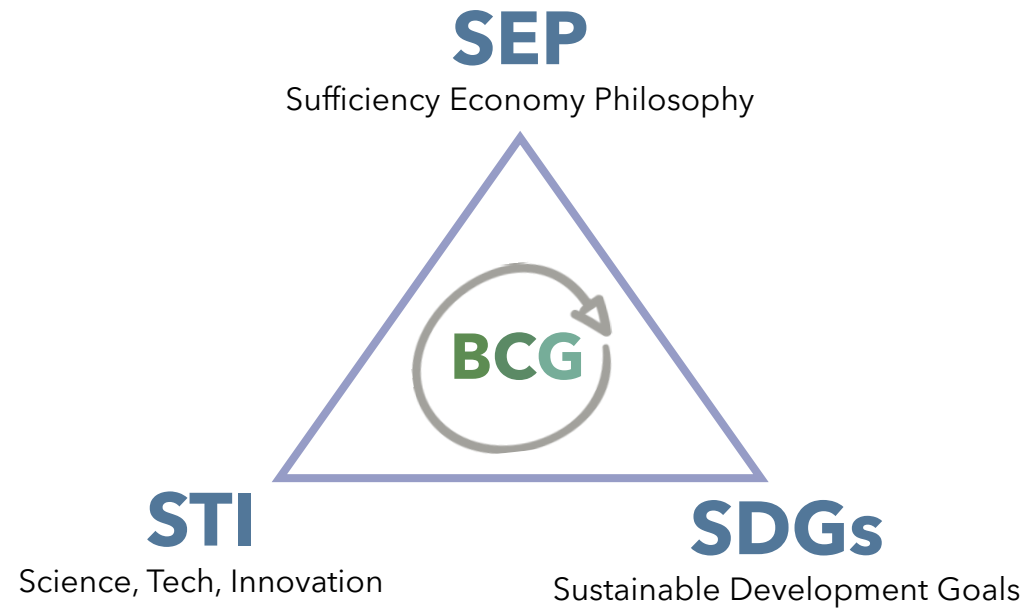
Bioeconomy
Value Creation in bio-based
manufacturing and service
sectors



Circular Economy
Loop of sustainable resource use

Green Economy
Environment-friendly production

The principle of BCG Model



01 Prioritize R&D

02 Strategic investment

03 Quadruple Helix + Global Partnership

Driving Strategies and Plan



How of BCG in action



1

นายยุคล ลิ้มแหลมทอง
Agricultural Sector



2

นายธีรพงศ์ จันศิริ
Food Industry



3

ศ. (คลินิก) เกียรติคุณ นพ.ปิยะสกล สกลสัตยาทร
Medicine & Vaccine



4

ศ. ดร.ไพรัช รัชชพงศ์
Medical Device



5

นายเทวินทร์ วงศ์วานิช
Bio Energy
Material & Chemical



6

นายกlinik สารสิน
Tourism and Creative
Economy



7

ดร. วิจารย์ สีมาฉายา
Circular Economy



8

ศ.ดร.สนิก อักษรแก้ว
Biodiversity



9

นายอิสระ ว่องกุศลกิจ
HVA bioproducts



10

นายปรณ นิลประพันธ์
Law & Regulation



11

ศ.ดร.สมคิด เลิศไพฑูรย์
Human Resource
Development

Government investment in BCG

Northern Economic Corridor (NEC)



- food safety and agricultural health standards
- agro-industry and food processing
- the integration of “Lanna Culture” into the products and services

Central Economic Corridor



- waste management
- innovation for ageing-society

Eastern Economic Corridor (EEEC)

- fruit production
- the development of future industries.



North-Eastern Economic Corridor (NEEC)

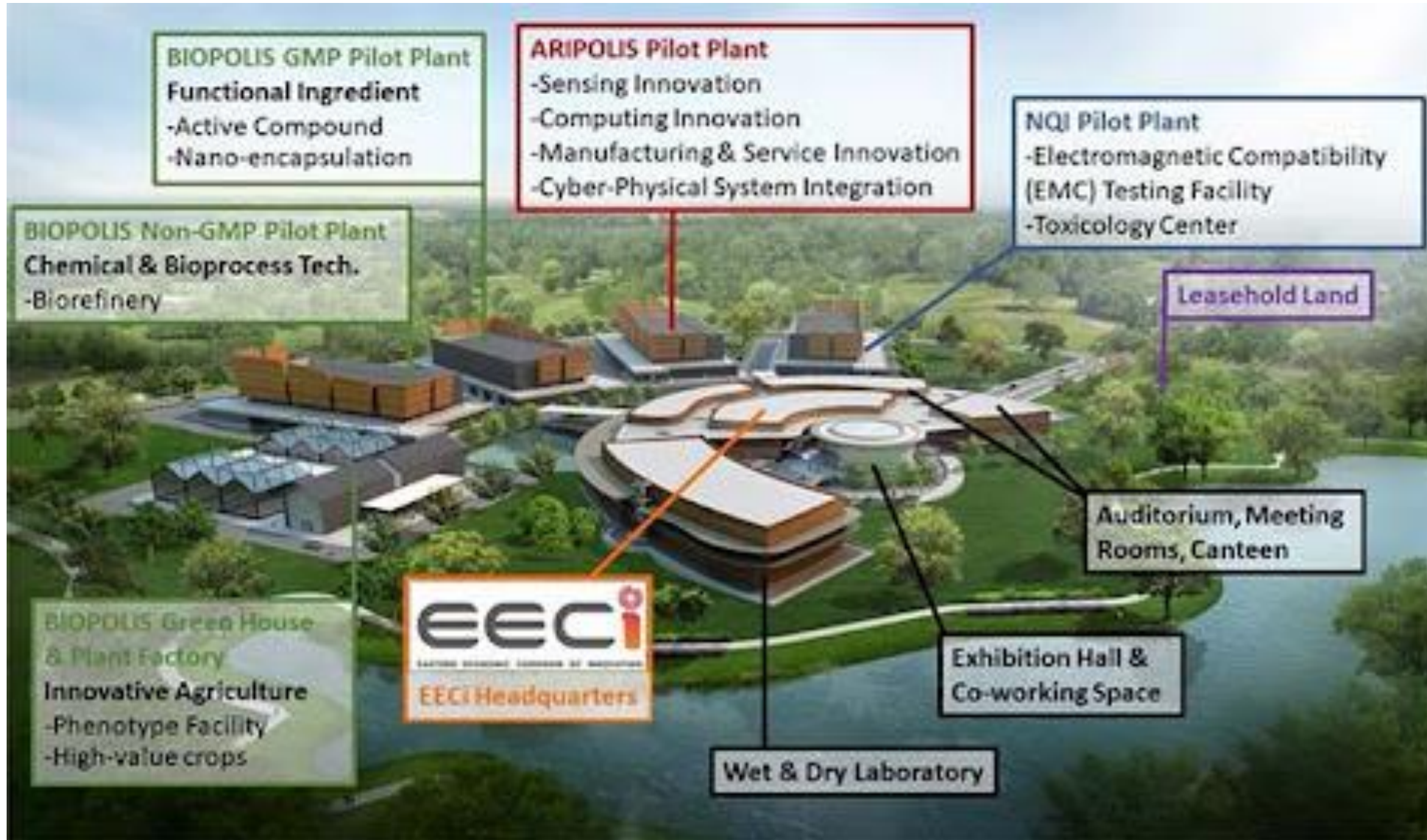
- resolving major health issues inherent to this region such as liver fluke
- promoting insect farming for an alternative protein source
- developing cultural tourism along the Mekong riverbank

Southern Economic Corridor

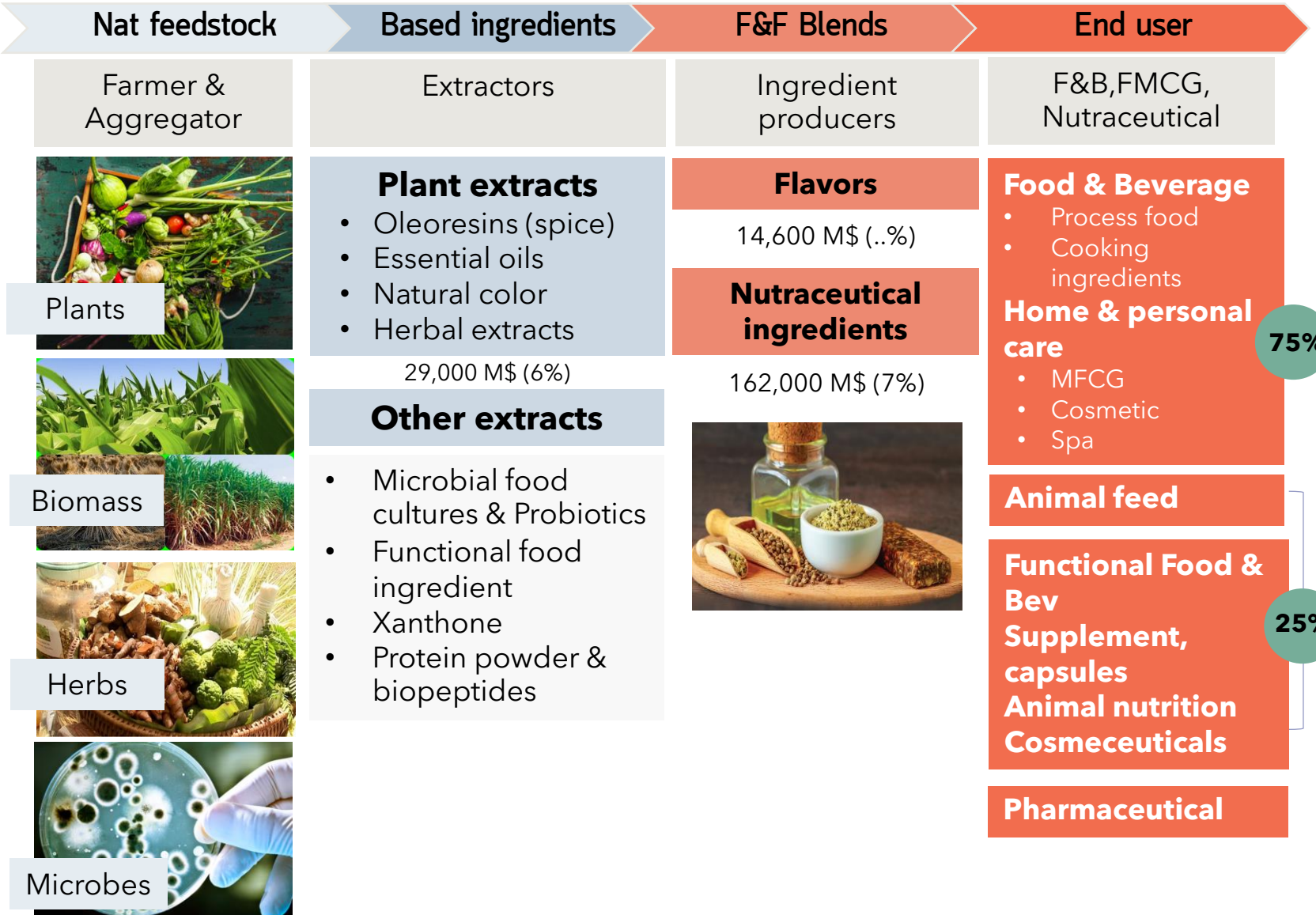
- precision aquaculture
- innovative halal food products
- development of new tourist destinations



Government investment in BCG



Opportunity from BCG: Functional Food



Strategic Target

- Competitive HVA functional ingredients industry set up and supply chain connection
- SME capability building to enter the value chain

Impact



Economic

Global Market 200,000 M\$ growth 6%



Social

BoP supply chain
Health function



Environment

Reduce agro waste

Nakhon Sawan Biocomplex

- **Phase I Bioethanol plant**
- **GGC Bio and KTIS Bioethanol**
- **Phase II Biochemicals & Bioplastic**
- **GC and Nature Work**



UPCYCLING RICE HUSK

Mosaic & Wall Surface from rice husk



<https://sonitesurfaces.com/products/husk/surface-covering>

**Enable community to access to renewable energy without subsidies
by developing appropriate technology and innovative microfinance**



Solar water pump



Biogas from manure



Solar dome for producing dried fruit

Driving BCG to regional and int'l platform



**Asia-Pacific
Economic Cooperation**

KEY
PRIORITY
01

Facilitating trade and investment

In a conducive ecosystem utilizing appropriate economic tools

KEY
PRIORITY
02

Rebooting Regional Connectivity

Particularly in the travel and tourism industry

KEY
PRIORITY
03

Advancing sustainable and inclusive growth

Focusing on alleviating inequalities and protecting the environment

BANGKOK GOALS ON BCG, 2022

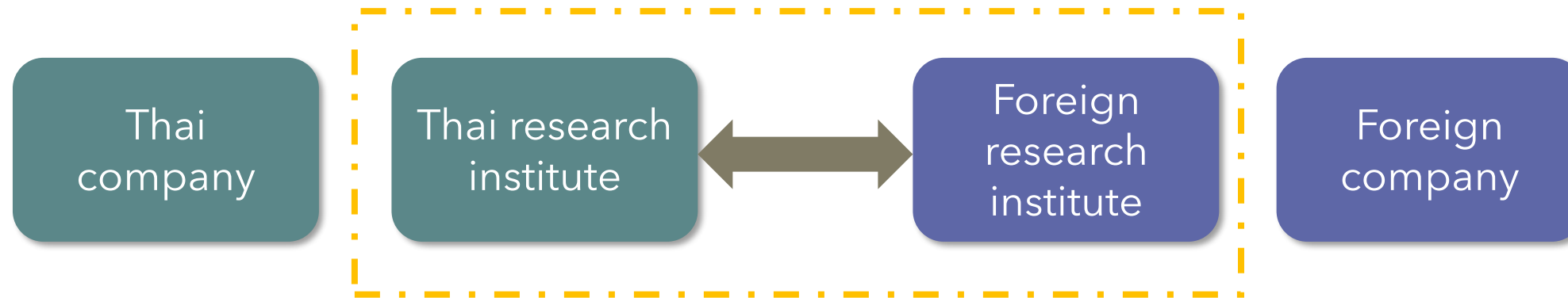
- **Zero emission** / carbon neutrality/climate change adaptation, mitigation and resilience
 - **Action area** - Energy transition, sust. transport & agri
- **Zero waste / SCP**
 - **Action area** - Circular Economy
- **Preservation and conservation** of environment and biodiversity / Sustainable management of resources
 - **Action area** - Bio-economy
- **Increase us of STI and digitalization**
 - **Action area** -Smart city, Sustainable finance
- **Social inclusion**/ human resource development
 - **Action area** - ESG, Empowering, Reskill-upskill for transition

Opportunity for collaboration



Global Partnership

Support collaborative research between Thai and foreign researchers



Specification

- Research projects between Thai research institute and foreign research institute that result in innovation in BCG sector
- Should have letter of intention from both private partners to contribute at least 10% in-cash or in-kind
- Researchers should hold technology above TRL 4
- The funding cover research expense and other activities need to facilitate the collaboration such as networking forum and workshop



nxpo
OFFICE OF NATIONAL HIGHER EDUCATION
SCIENCE RESEARCH
AND INNOVATION POLICY COUNCIL

THANK YOU

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