

# A Collaborative Approach for Regional SCP (Sustainable Consumption and Production) in Asia: co-design, regional characteristics, and COVID-19

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# “PECoP-Asia Project” for SCP in Asia

PECoP-Asia

- “**P**olicy Design and **E**valuation to Ensure Sustainable **C**onsumption and **P**roduction Patterns in **A**sian Region”
- **5-year research project** starting **from FY 2016**
- Strategic research project (S-Project) of Environment Research and Technology Development Fund (JPMEERF16S11600).
  - Topics strategically important for Ministry of the Environment of Japan.

<http://www.susdesign.t.u-tokyo.ac.jp/s-16/>

11 PECO P members (universities and research institutes)

My group's collaborators



# Outcomes of the PECoP-Asia: Policy brief for SDG 12 (SCP)

- 4 policy directions & 12 opportunities to advance SCP policy in Asia were put forward.
- Published in July 2018 at a governmental side event of UN HLPF (High Level Political Forum) on SDGs (hosted by Indonesian, Thai and Japanese governments)

[Available on the web](#)

PECoP SCP policy brief



Policy Brief

## Reconfiguring Consumption and Production in Asia and the Pacific

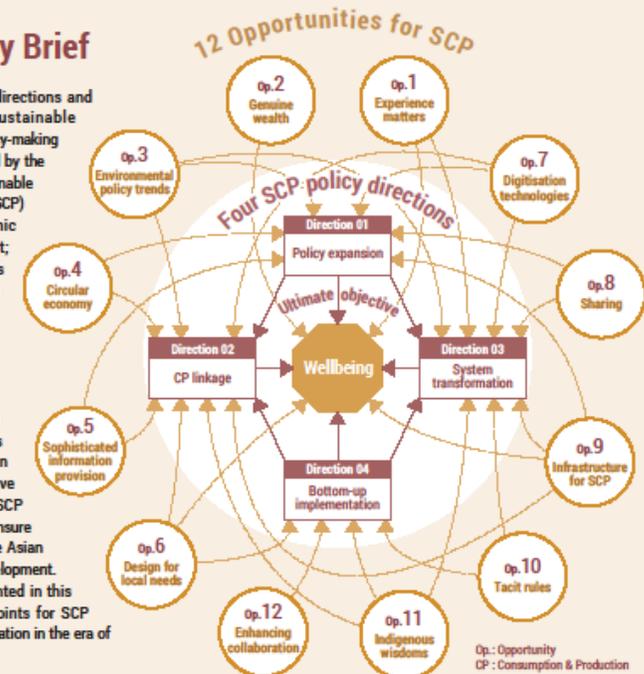


12 Opportunities for Accelerated Achievement of SDG 12

### About this Policy Brief

This policy brief presents four directions and 12 opportunities for SCP (Sustainable Consumption and Production) policy-making in Asia and the Pacific put forward by the Asia Pacific Roundtable for Sustainable Consumption and Production (APRSCP) and PECoP-Asia (Asian academic research consortium-led project; refer to the last page). It reflects their Asian views on SCP policy in line with Agenda2030.

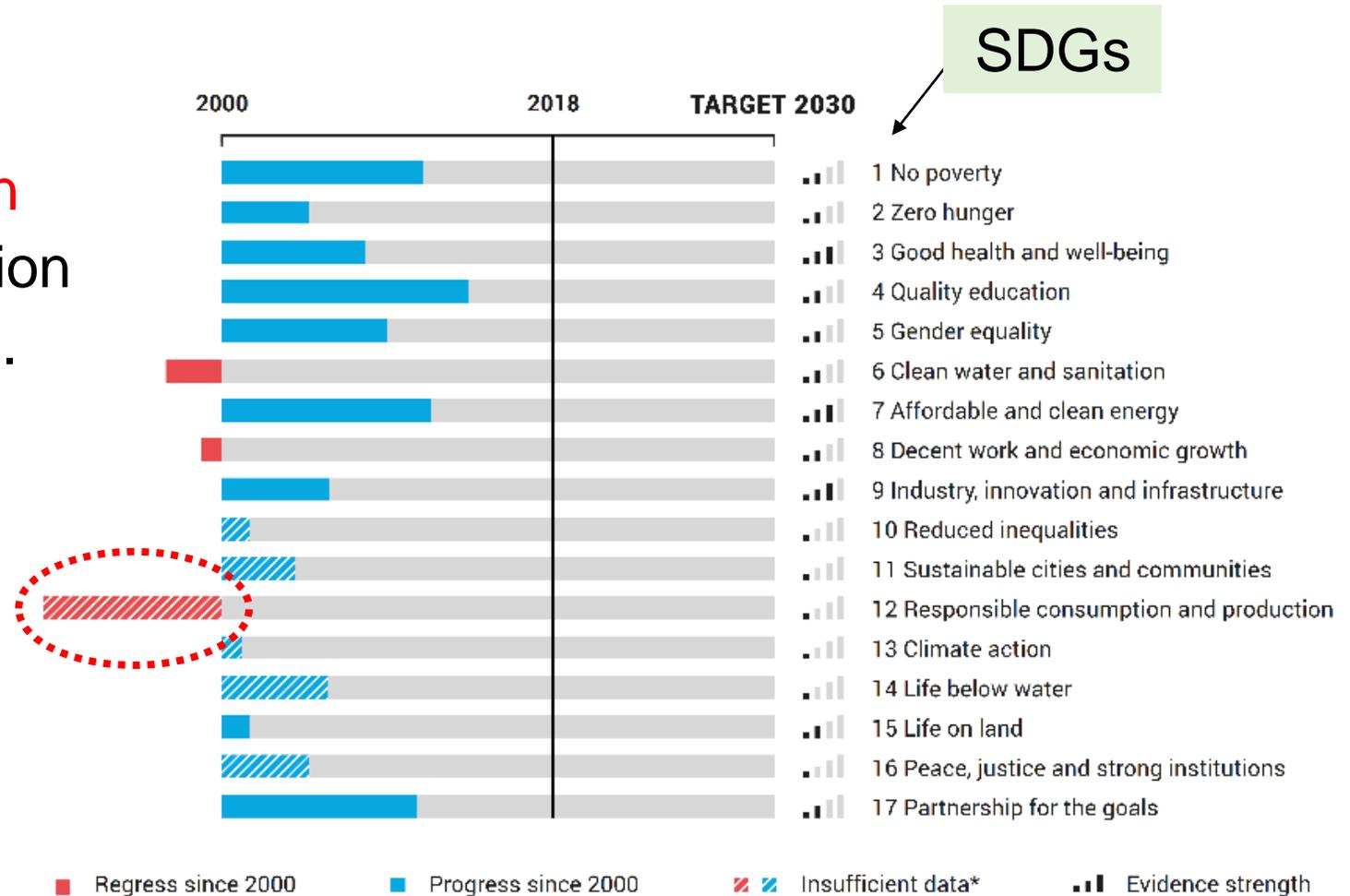
The brief addresses the idea that delivery of SDG 12 should largely depend on taking advantage of emerging forces in Asia including new business models, drivers of wealth, wellbeing and human development, urbanisation, disruptive technologies, and digitisation. SCP innovations are therefore crucial to ensure that these forces do not divert the Asian region away from sustainable development. All of the 12 opportunities presented in this brief indicate promising entry points for SCP policy development and implementation in the era of the Paris Agreement and SDGs.



# Background: Asia far from SCP

*Economy in Asia*

- Asia is the center stage of the world economy today.
- Among the SDGs, **progress on SCP (Goal 12) has fallen the most in the region** (UN ESCAP, 2019).



# Contents

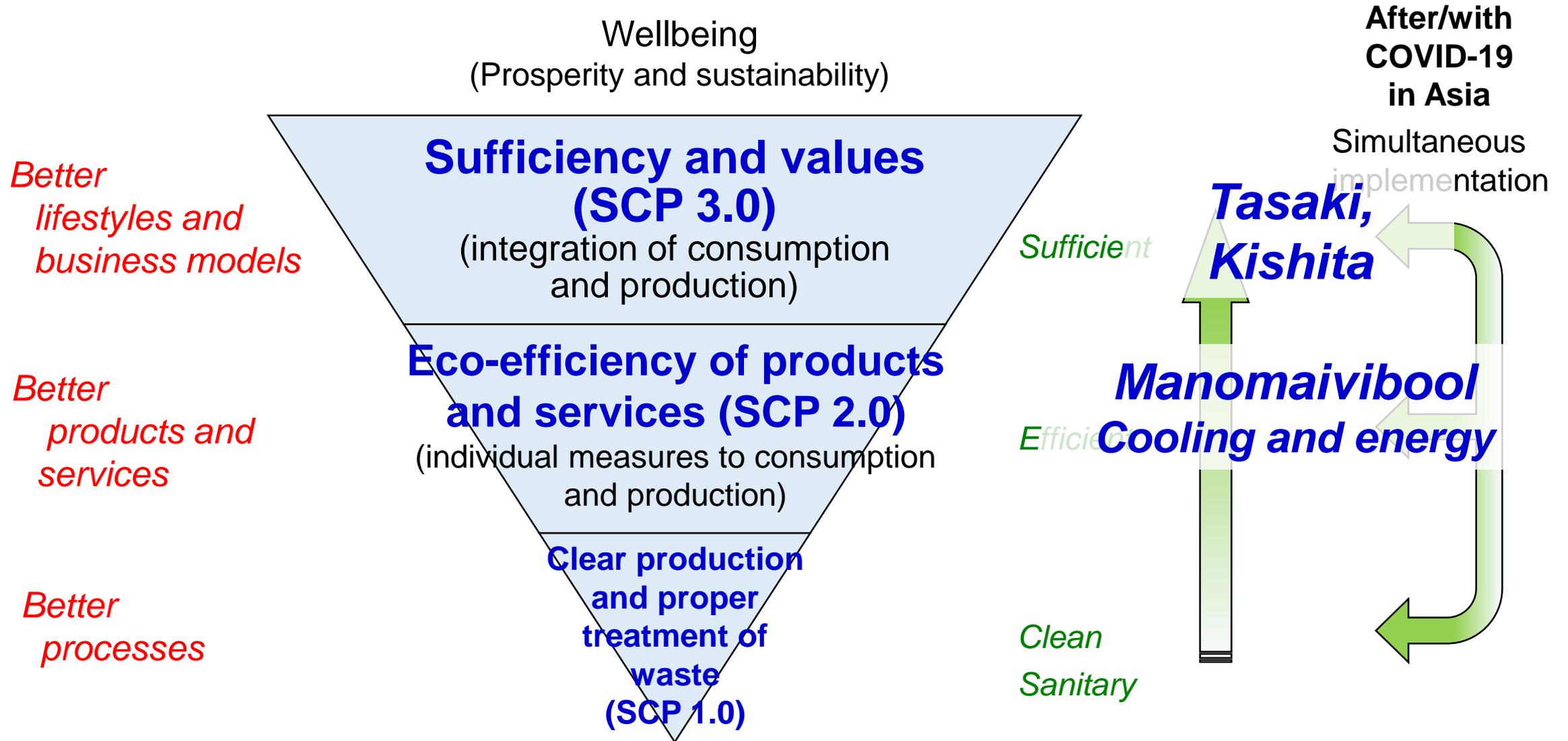
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- 1) New phase of SCP policy in Asia—Context and challenge
- 2) Method and results of co-design workshops
- 3) A COVID-19 workshop in Japan

# 1) New phase of SCP in Asia

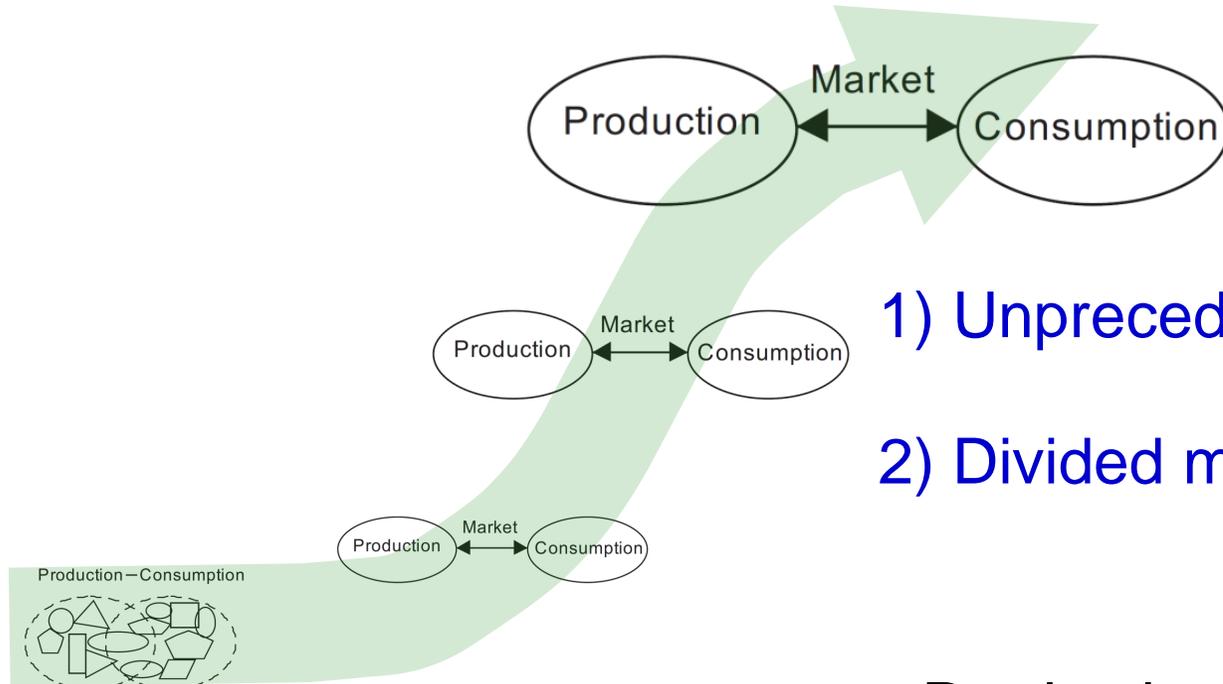


# Evolution of SCP policy





# Two mega trends causing systemic imbalances



1) Unprecedentedly rapid economic growth

2) Divided mass consumption and mass production

Production (supply) > Consumption (demand)

Production > Infrastructure for consumption

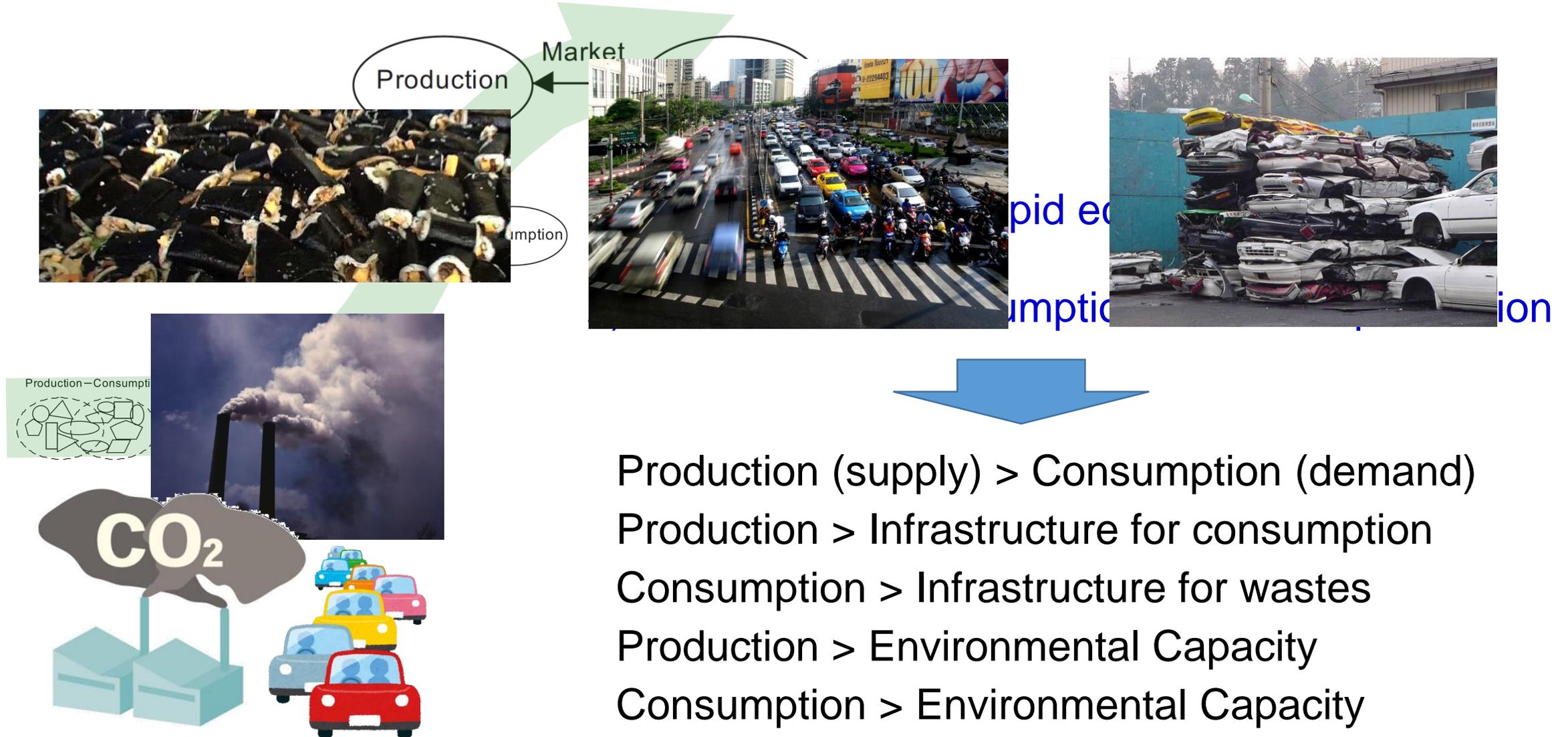
Consumption > Infrastructure for wastes

Production > Environmental Capacity

Consumption > Environmental Capacity

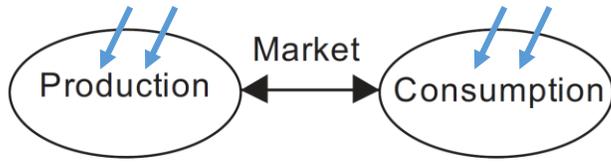


# Two mega trends causing systemic imbalances





# Three SCP positions

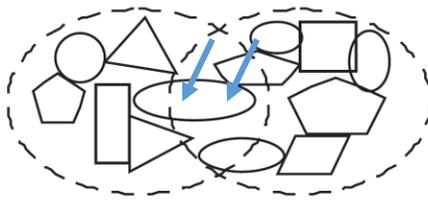


Reformist position

## SCP policy for improvement

(Address individual **elements** such as pollution prevention & eco-efficiency of products and services)  
**SCP1.0 & 2.0**

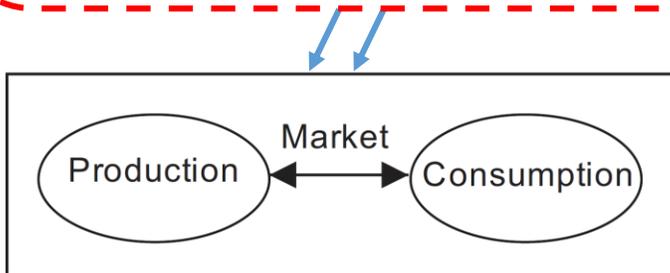
Production – Consumption



Reconfiguration position

## SCP policy for transition

(**Systemic** approach for consumption and production (CP) patterns)  
**SCP3.0**



Revolutionary position

## SCP policy for revolution

(such as de-growth and post-capitalism)

↙ Indicates policy intervention points.

# How can we advance transition-oriented actions?

(with a reconfiguration view integrating  
consumption and production more)

# Policy making in the era of “transition”

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## Evidence-Based Policy Making (EBPM)

*Retrospective*



## Envisioning-Based Policy Making (New EBPM)

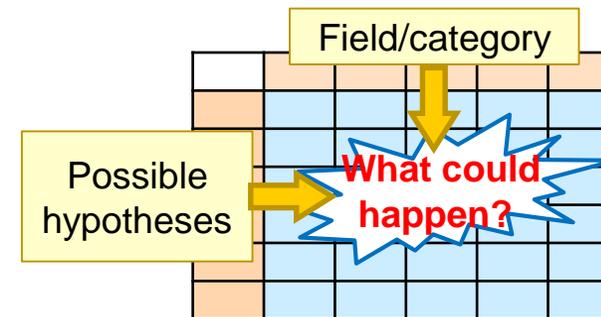
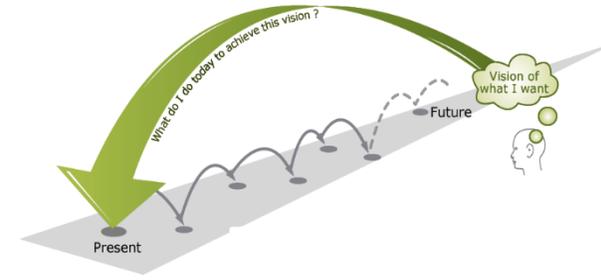
*Prospective, experimental*

Think together  
(Multistakeholders)



# Beyond the conventional thinking: *Think together*

- **Scenario analysis:**  
**Backcasting**  
Kishita et al. (2018)  
Procedia CIRP
- **Creative methods:**  
**Constrained idea generation**  
SusLife project (NIES 2011-2015)  
PECoP-Asia project (2016-2020)
- **Views of future generations**  
“Future Design”, etc.



## 2) Method and results of co-design workshops



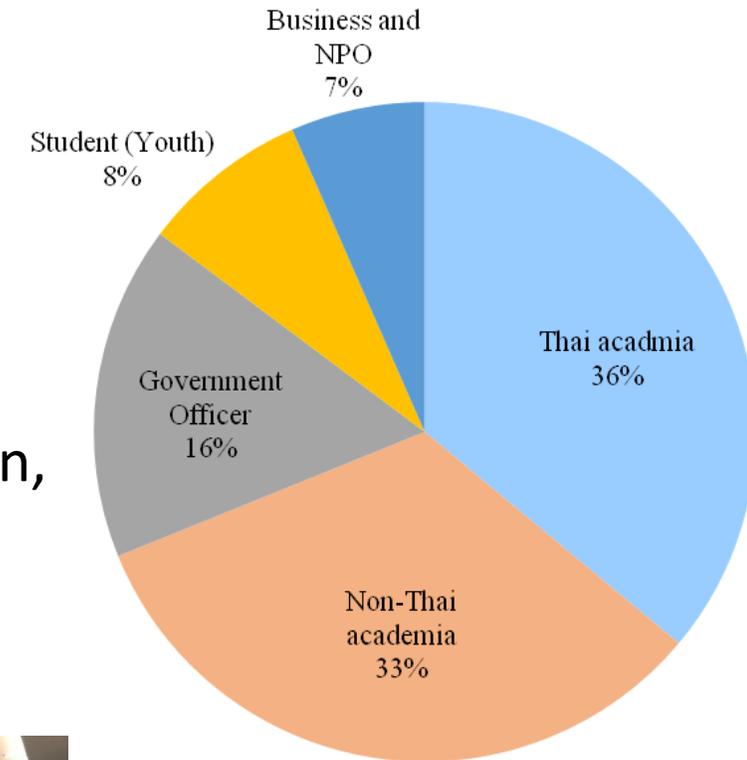
PECoP-Asia

# 2019 Thai WS (below) & Japan WS on SCP in Asia



Approximately 70 participants gathered from Thailand and Japan, including academia, government officials, business persons, environmental NPO, the young (students), etc.

Group works (3 hrs) Reporting & Discussion (3hrs)



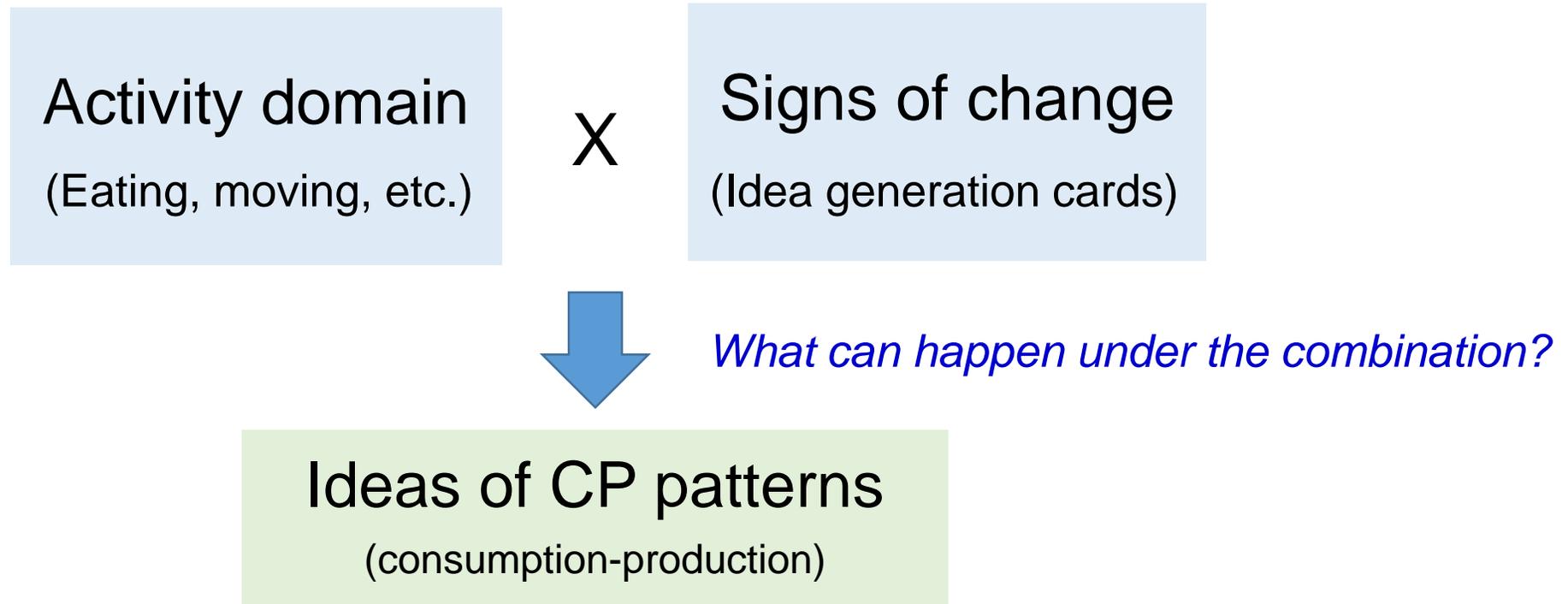
# Method 1: Idea generation

<Divergent thinking>  
Guilford (1967)

A creative process utilizing acquired knowledge and inspiration.

A variety of methods have devised (Takahashi 2002)

- Free-style idea generation (e.g., brainstorming)
- **Constrained idea generation** (e.g., morphological analysis)





# SCP idea generation cards

SCP idea generation card #3

**Change infrastructure or rules**

Relating to SCP Opportunities 9 & 10

Consumption and production (CP) patterns and people's lifestyles are often framed by infrastructures (hardware) and rules (software). By changing them, we can make our CP patterns into more sustainable one.

*Example: Renewablizing electricity, introducing a bypath, "cool-biz", changing rules of the shelving and best before periods of food product*

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\* 24cards (=8x3) were used for each group

#1

Make an existing product/service green

Op. 3&4

#2

Fully use a product and its parts/materials (lifetime extension, repair, etc.)

Op. 4

#3

Make a new product/service to meet the needs

Op. 6&11

#4

Change the use pattern of a product/service by utilizing information

Op. 5&7

#5

Change infrastructure or rules

Op. 9&10

#6

Use the function (sharing, servicising)

Op. 1&4&8

#7

Eliminate a product/service itself

Op. 1

#8

Change one's lifestyle/business practice

Op. 1&2

\* The card number upper right should be written on sticky notes.

\* "Op." represents the opportunities in the PECoP-Asia and APRSCP's policy brief (2018).





# Method 2: Structuring

<Convergent thinking>

Guilford (1967)

## Rationale of structuring

Structuring an ill-structured problem directly links to finding a solution (Miyakawa 1994)

Problems about SCP are ill-structured.

(cf. Simon 1973)

complex and involves multiple goals and multiple stakeholders

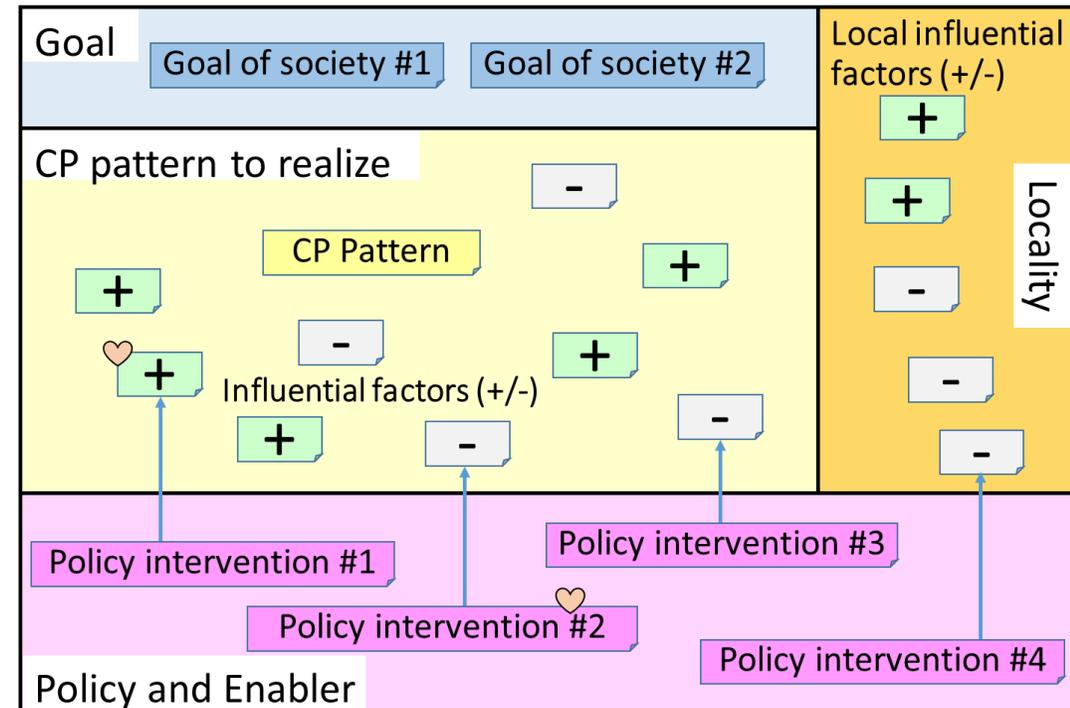
## Structuring method

A sheet on the right was devised for group discussion to structure:

- 1) Goals of society
- 2) Influential factors
  - Local and non-local
  - Promoting and hindering
- 3) Policy intervention



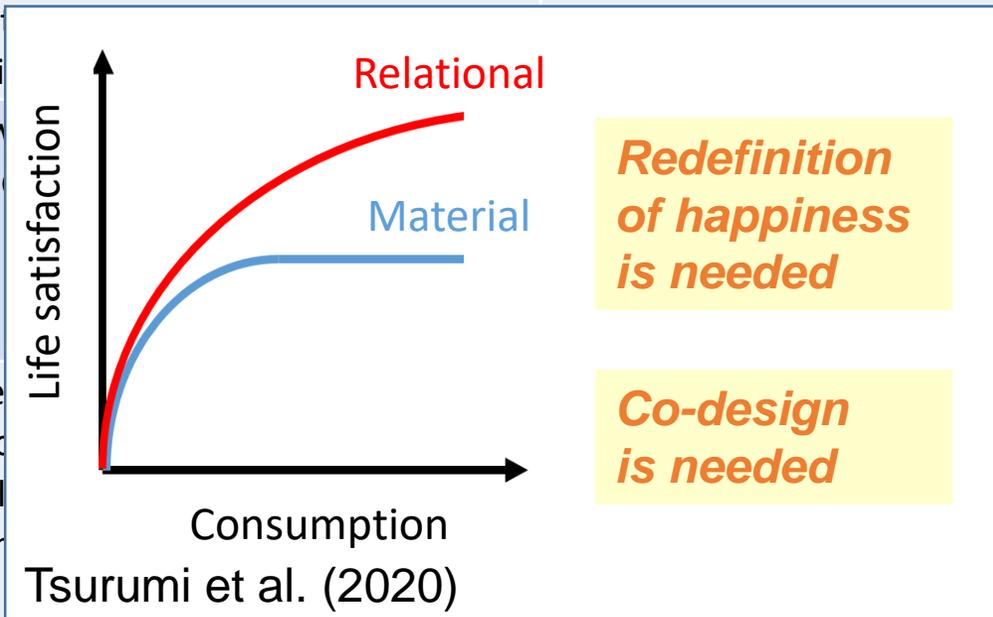
Q. What are important influential factors and potential policy interventions?





# Results of the structuring 7 SCP patterns (1/2)

Activity domain	Consumption and Production pattern	Goal of society	Important factor (+: promoting, -: hindering)	Important policy	Remark
Moving in Bangkok	<b>Online &amp; apps platforms</b> (e.g., e-learning, teleworking, online shopping)	Minimizing unnecessary activities, minimizing emission, <b>better quality of life</b>	<b>Culture to adopt new technology/innovation (+), familiarity of informal transport (+),</b> no motivation for organization (-), consumers' mindset (-)	Organization transform policy, budget allocation for technology, partnership with private sectors, cyber patrol, tax motivation policy	<b>Technology-oriented approach:</b> digitalization and platform.
Eating in Bangkok	<b>Eating Healthy</b> (Quantity/Quality) and Sustainability	Food waste reduction, promoting health, minimizing carbon footprint and resource use	Variety of the choice of tasty food and creative chefs (+), meat and flavor addiction (-), difficulty of	A <b>training</b> program to local chefs, regulation/ <b>certification</b> for <b>street food and vendors,</b>	Sufficiency approach with <b>a priority on health.</b>
Working in Bangkok	<b>Remote working, online meeting</b> and IOT	Improving productivities, improving quality of <b>work and life balance,</b> promoting green society, decarbonization	New in e-law		<b>Digitalization.</b> Transforming working rules for sufficiency.
Traveling in Thailand	<b>Responsible</b> tourism	Sustainable benefits to the environment, social and wellbeing for host country/area	Inte enfc (-), I mar		<b>Regulatory</b> and informative approaches





# Results of the structuring 7 SCP patterns (2/2)

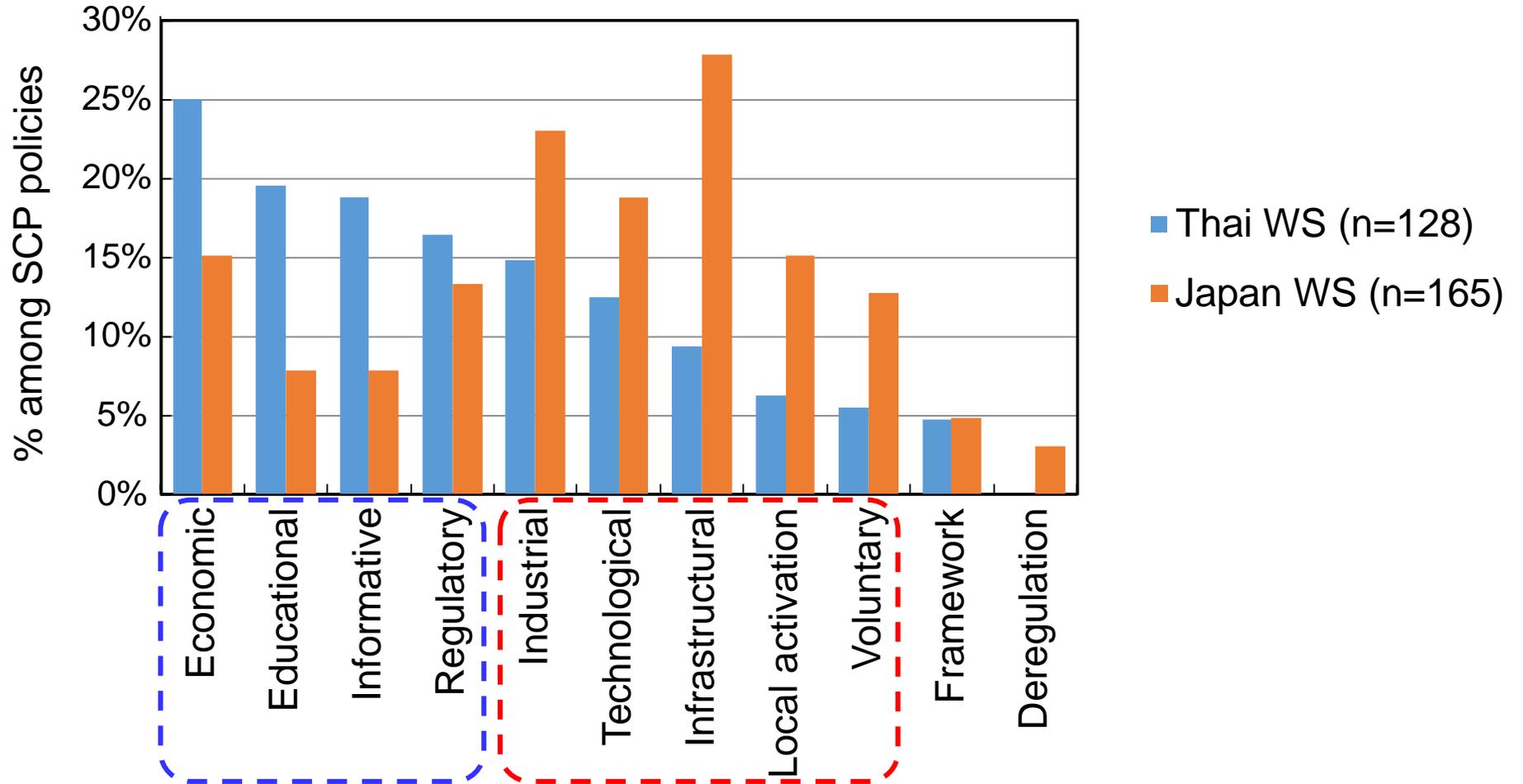
Activity domain	Consumption and Production pattern	Goal of society	Important factor (+: promoting, -: hindering)	Important policy	Remark
<b>Doing housework</b> in Bangkok	<b>Professional green housekeeping service</b> for sustainable quality of working life	Expanding green job and green service market, achieving zero-emission society, improving quality of life	Developed standard of services (+), no license to become a housekeeper (+), reasonable price of service (+), mobile application that easy to use (+), housekeeping training programme (+), low education level of housekeeper (-), lack privacy (-), expensive service (-)	Introduce <b>skill development</b> program, development of <b>license</b> housekeeping services, develop the platform to certify and give license of housekeeper service provider, give <b>award</b> to green house keeping business	Sufficiency approach by servicizing for <b>professional quality</b> of sustainable housekeeping
<b>Cooling</b> in Bangkok	<b>Smart infrastructure</b> to bridge gaps between behavior and awareness	Low-carbon, green/energy-efficient products, cheap energy cost, high awareness on the environment	Cheap & not environmentally friendly products (-), people consider cost more than environment (-)	Subsidies to <b>replace old air-conditioners</b> , social media campaign to buy green products	Transforming <b>product stock &amp; infrastructure</b> by efficiency and enlightenment approaches.
<b>Purchasing &amp; delivery</b> in Bangkok	Digitalized <b>online purchasing</b> platform	Increasing efficiency of resource/energy consumption, decarbonization, <b>accessibility</b> to good service for everyone, generating employment	Adaptability of the local shops to join (+), familiarity with no material consumption (+), a green consumer for repair/reuse (+), too much packaging (-), not so-trustworthy online platform (-), lack of digital literacy (-), increase in the number of delivery trips (-)	Environmental taxation and subsidy, information provision regarding waste/GHG emission, use of logistic planning <b>platform &amp; AI system</b> (IoT) together with the trustworthy <b>monitoring system</b>	<b>Technology-oriented approach</b> : digitalization and platform with <b>a care for digital divide</b> .

Not only what to achieve but also  
how to achieve is changing in SCP



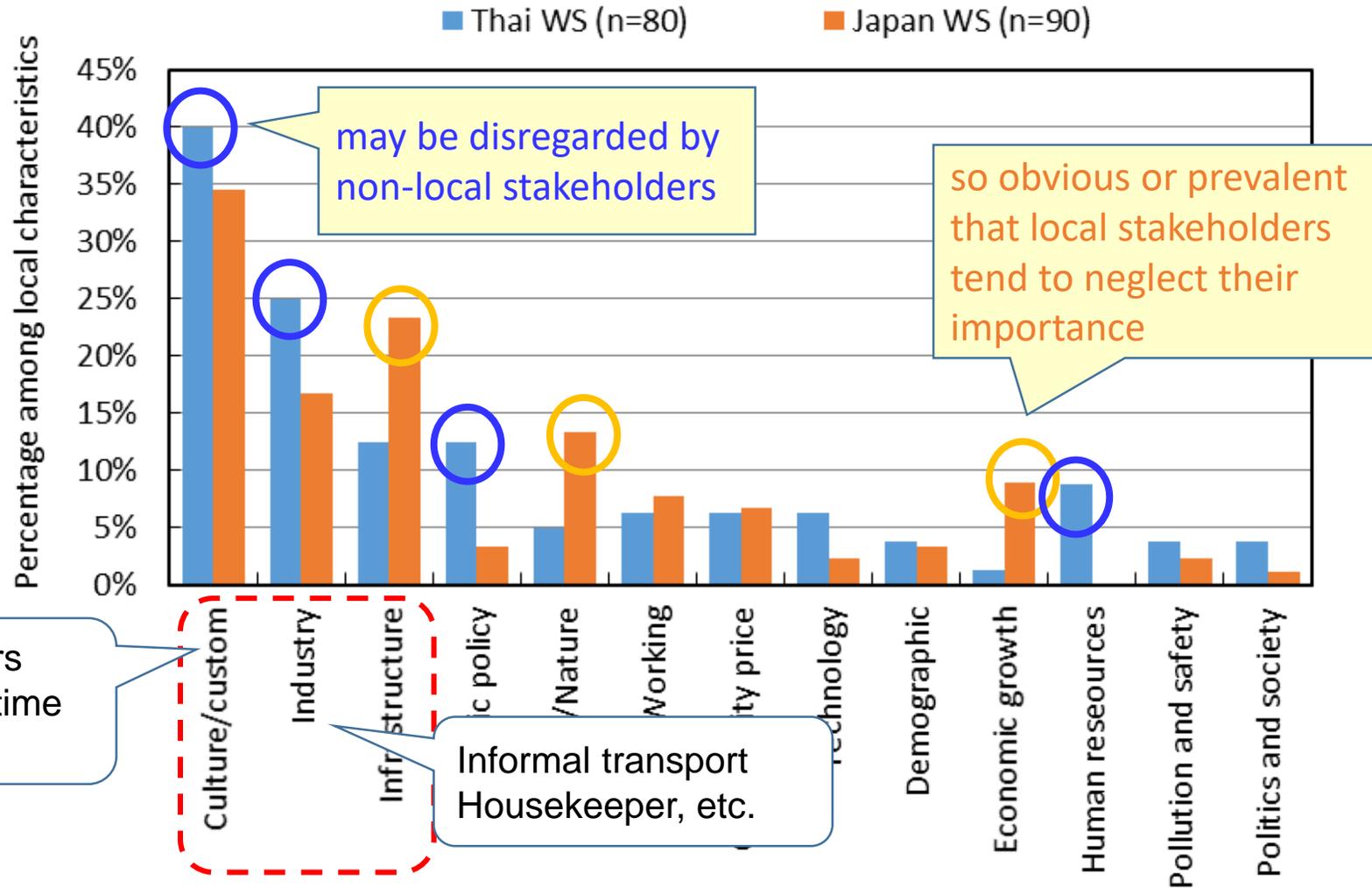
# SCP policies suggested

What kind of policies are required?



Proposed SCP policies were more related to socio-economic development with new technology and infrastructure in Japan but not in Thailand and conventional environmental policies were suggested.

# Local/regional characteristics that should be considered **for Thai SCP**



Proposed local characteristics were categorized.  
**Top 3** categories were **culture/custom, industry, and infrastructure** in common.

### 3) A COVID-19 workshop in Japan

# COVID-19 workshop in Japan

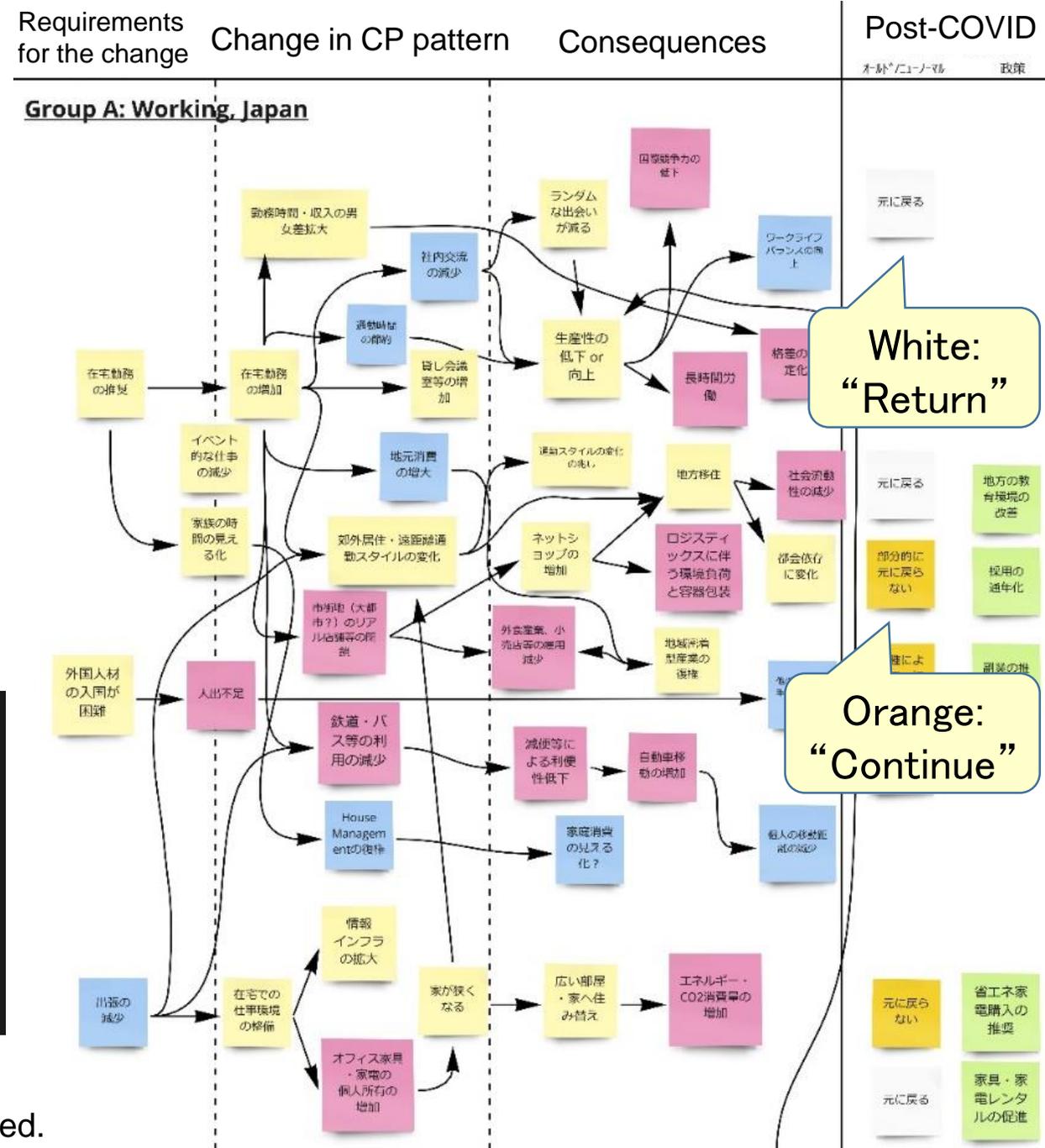
## Questions

- 1) **What have happened** to consumption and production patterns and relating factors by the spread of COVID-19?
- 2) In the post-COVID-19, **will the changes continue or return to the old-normal?**  
What policy can be important/effective?

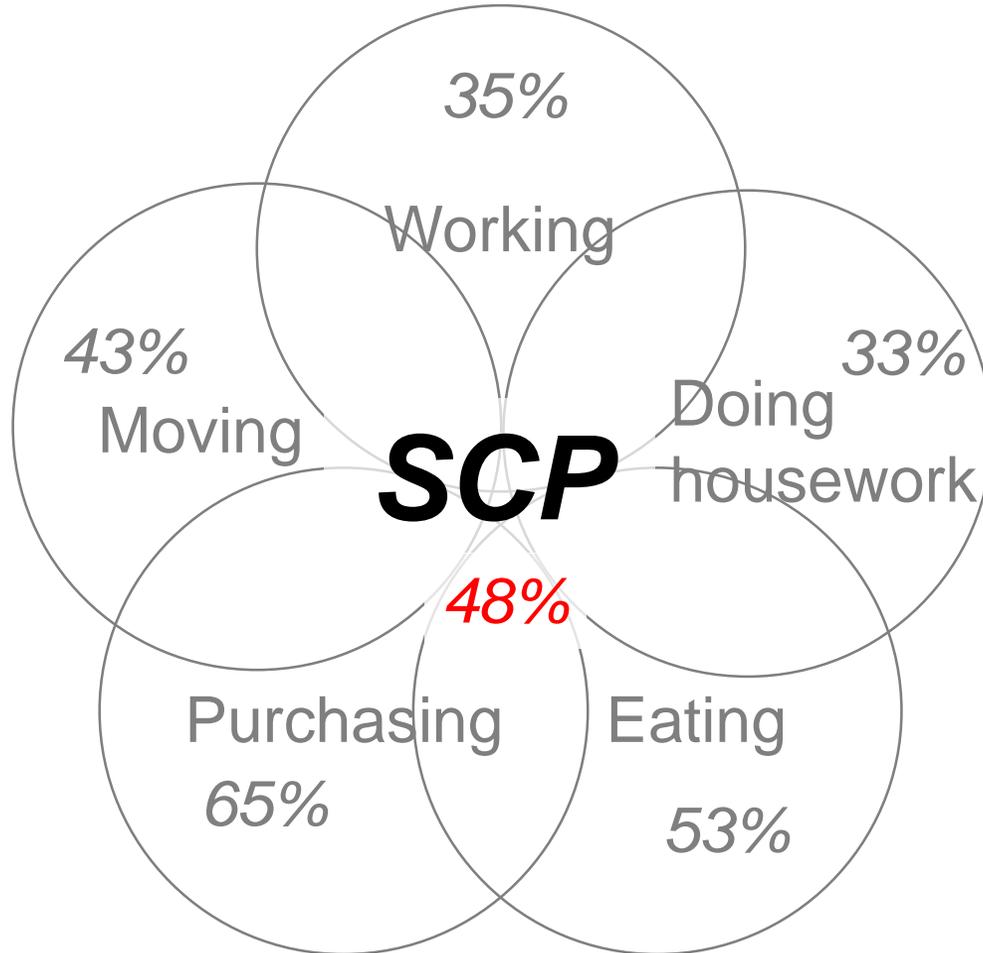
Working, eating, purchasing, moving, doing housework were discussed by 5 groups of 20 participants (in August 2020)



A web tool, *miro*, was used.



# Outcomes of COVID-19 Workshop in Japan



**%: anticipated new normal score**  
 (weighted by continue=1, partly continue and partly return=0.5, return=0)

Half of emerged phenomena won't return and will become "new normal" as of August 2020.

New rules should be made for preferable emerged CP patterns not to return.  
 (e.g., teleworking rule)



# Outcomes of COVID-19 Workshop in Japan

PECoP-Asia

Increased home working and changed office communication. Expected decrease in energy consumption. Creativity could be undermined.

Simultaneous labor shortage and increasing demand. Labor market adjustment is important

Utilization of substitutes for reduced transportation. (e.g., online meeting)

Potential changes in urban and rural power balance

Not people but products are moved, which would become a popular choice.

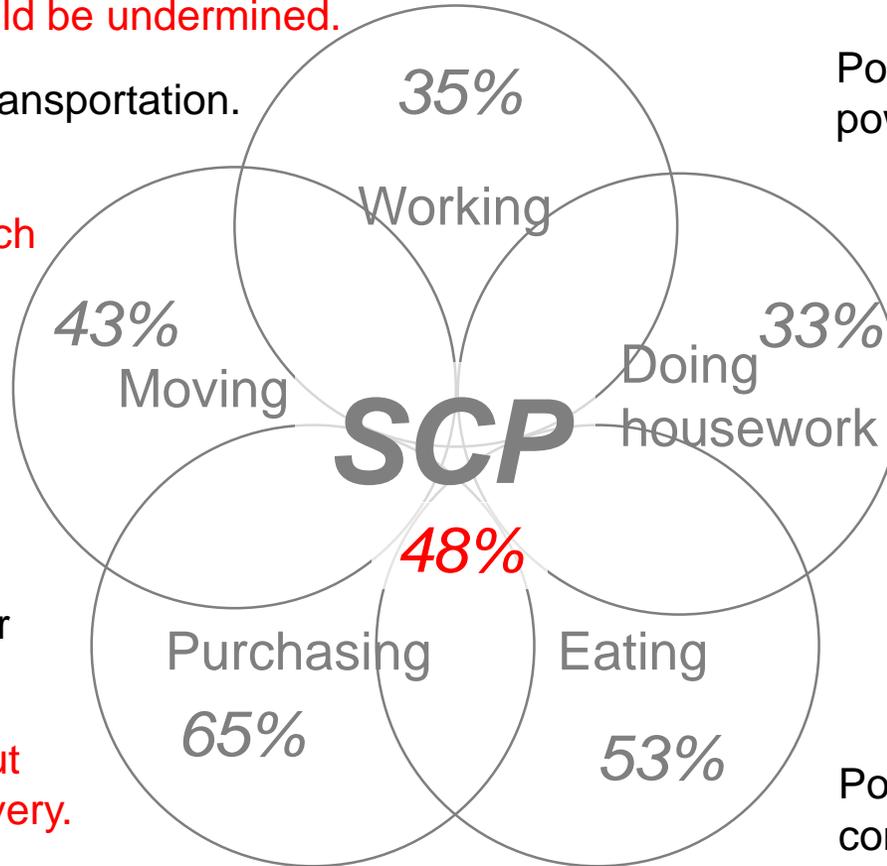
Possibility of moving to a rural area, but limited. With the convergence of the COVID, cities would revive. Concerns about tracking people's movement.

Non-owned trend reverses to owned. Concerns about increased energy for car movement.

Increased online sales. Concerns about increased energy & packaging for delivery.

Simultaneous hoarding and refraining from buying. Consumption for staying home.

Potential shift to a wealthier life at home



Longer stay at home. Spread of living facilities and products/services with high environmental performances is important.

Reduced eating out. Reduced relationships. More packaging. Primary industry shrinks in the short term due to labor shortage

Possibility of revived connection between consumption and production for safety, local and direct purchase.

Signs of fundamental changes in lifestyle



# Takeaways from my presentation

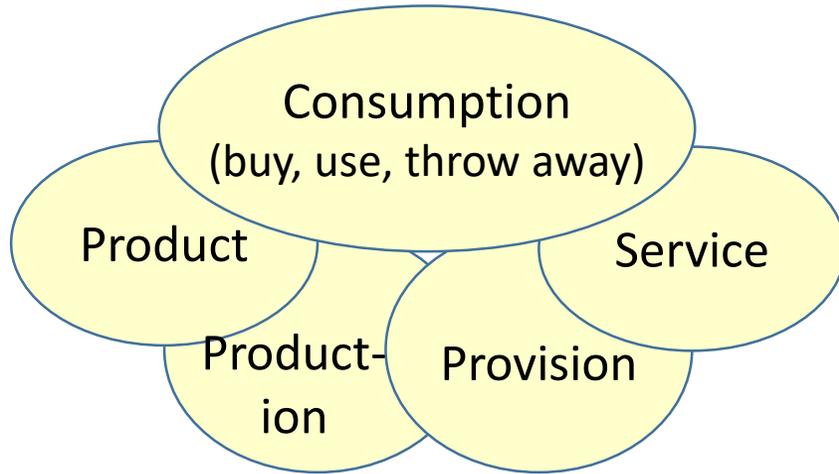
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- To create ideas of regional/local SCP patterns based on collaborative approach (co-design) with integrated thinking on consumption and production by both internal (local) and external participants.
- To introduce an approach of Envisioning-Based Policy Making and redefine well-being.
- To change our infrastructure and rules beyond conventional environmental policies for transforming consumption and production patterns.
- To change the COVID-19 crisis into opportunities and keep preferable changes by introducing measures.

Supplementary slides



# What is the “consumption and production (CP) pattern”?



## 5 components of CP pattern

### Definition:

Total (whole phenomenon) of **consuming and living patterns with the use of products and services, and the associated subsystems of production, provision, consumption, and disposal/circulation** for the products and services.

### <Examples>

Car ownership, car sharing, use of public transportation, and use of bicycle.

*SCP is not only <sustainable consumption> + <sustainable production> but also sustainable <consumption and production> (integrated).*

# What to codesign?

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~~□ “Sustainable consumption” + “Sustainable production”~~

~~Codesign each of them by splitting!?~~

□ Co-design a set of “consumption and production”  
for sustainability



# Co-design is an approach for a complex, integrated system with diversified needs

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- Co-design: developed in the fields of product/service design and city planning
  - An important approach to **fill the cognitive gaps between designers and users** (**Better idea & judgement, higher user satisfaction**, etc.; Steen et al. 2011)
  - Recently, regarded as **a key approach for sustainability of a complex society**, where an integrated, system thinking is necessary
    - **Joint framing** of challenges (Mauser et al. 2013)
    - An agent of transformation (as process) (Moser 2016)
- **“Achieving SCP is only possible with the active support and participation of all stakeholders.”** (UNEA 2019).

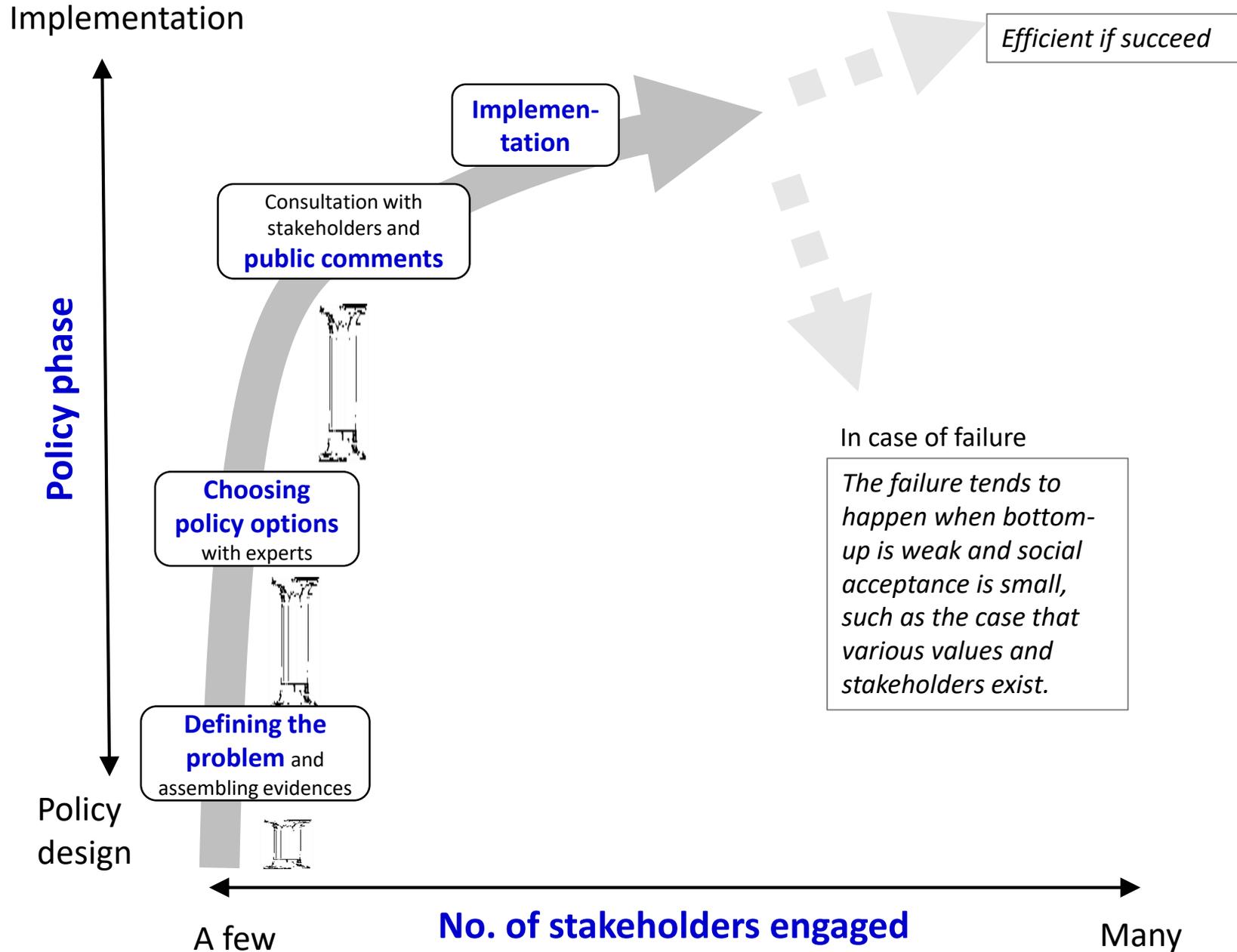
**Diversified people’s needs in CP patterns as well as those of various stakeholders cannot be considered appropriately just by traditional policy makers.**



# Comparison of participatory methods relating to SCP patterns

	Deliberative opinion poll and mini-publics	Living lab	Method of this
Target	Specific theme	Specific product/service, specific activity	Specific activity domain
Focus/feature	Citizen's opinion formulation based on accurate understanding of evidences and deep argument (avoidance of superficial understanding)	In a narrow sense, an experiment in a living space or a similar artificial space where users and experimenters collaborate	Presenting participants' inner needs and vision of a desired society (To create and discuss a consumption and production pattern that does not exist or spread)
Participant	Randomly-selected citizens (miniature of the society)	Users of target product/service for experiment (basically iterative participation)	Stakeholders of CP pattern, including governmental officers and academia
Role of experts	Information provision	Experimenters	Part of participants
Phase of SCP policy process	Around full implementation phase	Phases from conceptual design to prototyping	Conceptual design phase
Methodology	A kind of opinion poll	Not a specific method	Specific method

# Conventional government's top-down approach for SCP policies

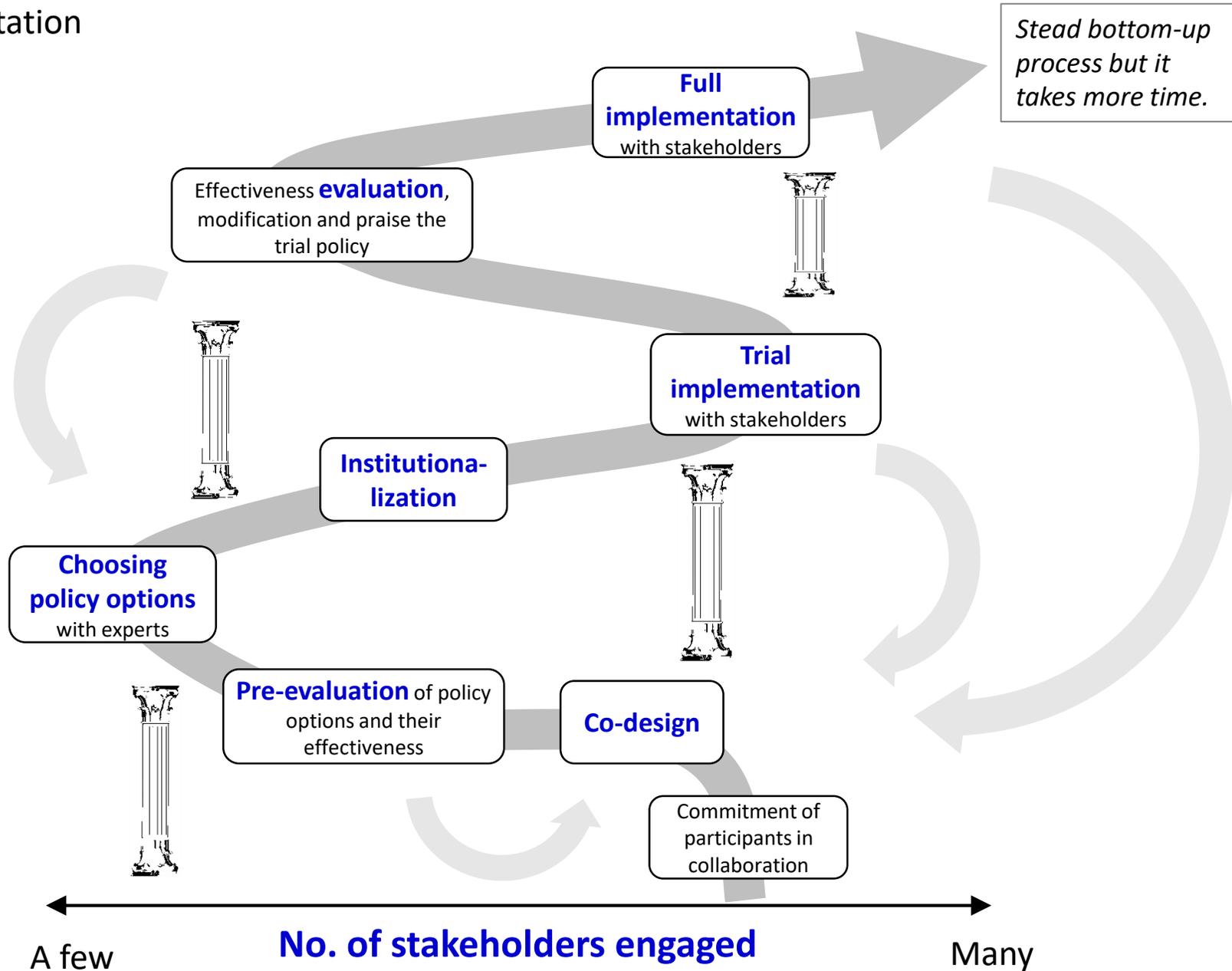


# Multi-stakeholder collaborative approach towards SCP

Implementation

Policy phase

Policy design



# Localities presented at the WS (Bangkok/Thailand, "Cultural/custom")

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Role of wife as "good cook, good housekeeper"

Working mother increase

Housekeeping + caring for elderly

Spirit of service giving

Relaxed about time

Trust among neighborhood

We can produce insects (North-East Thailand)

Alternative medicine herb

Glutamate is in everywhere and too much

Chili fish sauce is everywhere (high sodium) + seasoning

Kind people

Culture: easy going

Culture to adopt new tech./ innovation

Familiarity of informal transport

Boss' Mindset

Dangerous Driving Behavior

Break the traffic law

Some people complain about a higher temperature

Set too low temperature (e.g. 18°C)

Wear clothes

Many people aware to turn air con in 25°C by themselves

People are used to turning more than one air-con. in one room

Use of old products for long time, not energy efficient

Resistance from individuals to change

Service mind "Siam Smile"

Unique local culture variety

# Localities presented at the WS (Bangkok/Thailand, “Industry”(left) and “Infrastructure”)

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## No license to become a housekeeper

Services based on local needs

## Traditionally no delivery system

Adaptability of local shops to join

## Non-material consumption (massage etc.)

Variety of healthy food in different vegans in Thailand

Alternative medicine herb

We have veg set on the table (like south curry restaurant)

All variety of food (street food) available in Bangkok

## Easy access (Food everywhere)

Street food open for 24hrs in Bangkok

Cheap street vendors enable low income people food access

Too many food stalls (vendors) difficult to control

Some street vendors are not safe and clean

## Familiarity of informal transport

Monopoly App for private car hailing

Traditionally no delivery system

Env. greener transport for delivery

Easy access (Food everywhere)

Working support services (co-working space, free wifi)

## 5 Generation

Access to the Internet & technology

High CO2 intensity of electricity (low effects of EV)

## Bad condition of pavement

Access map & city planning of tourist destination

# Expansion/shift of the Scope of SCP in Emerging Economies



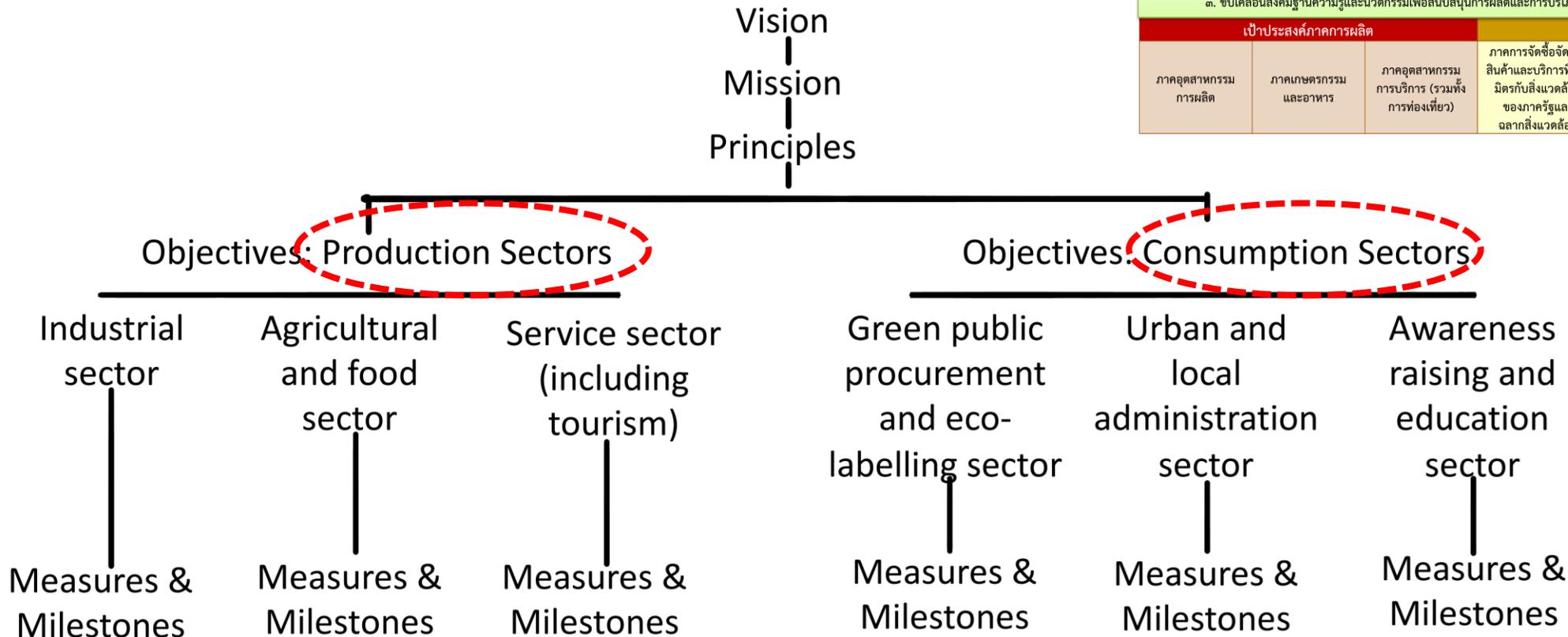
PECoP-Asia

	Conventional SCP	New SCP
Infrastructure	Infrastructure for production and waste treatment (e.g., roads, electricity, waste collection systems)	Infrastructure for specific new SCP patterns and new lifestyles (e.g., roads for walking and biking, online platforms, etc.)
Technology, innovation	Eco-products (e.g., energy-efficient)	Artificial intelligence, virtual reality, digitalization
Industry/business	Subsidization, licensing, standardization	Instruments are the same, but for new industries/businesses that support new SCP patterns (e.g., green/social businesses, online businesses)
Local development and activity	The aim is economic development of an area	The aim is regeneration of an area and community activities
Behavior/lifestyle and SCP	Individual behavior change, adjusting lifestyles	Change of rules and institutions, for lifestyles
Focus of SCP	No-coordination of the three SCP versions	More coordination of the three versions



# Current SCP policies in Thailand: sectoral approach with separation of consumption and production

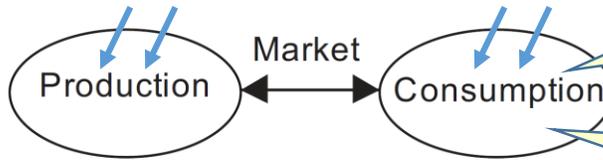
## Thailand(2017)SCP Roadmap 2017-2036



ประเทศไทยเป็นผู้นำอาเซียนด้านการผลิตและการบริโภคที่ยั่งยืน ภายใต้ปรัชญาเศรษฐกิจพอเพียง และขับเคลื่อนด้วยการบูรณาการด้านนวัตกรรมทางสังคม ภายในปี พ.ศ. ๒๕๖๔					
พันธกิจ ๑. ปรับเปลี่ยนรูปแบบการผลิตของทุกภาคส่วนในทุกพื้นที่ไปสู่การผลิตที่ยั่งยืน ๒. ปรับเปลี่ยนพฤติกรรมของประชาชนและหน่วยงานภาครัฐในทุกระดับให้มีรูปแบบการบริโภคที่ยั่งยืน ๓. ขับเคลื่อนสังคมฐานความรู้และนวัตกรรมเพื่อสนับสนุนการผลิตและการบริโภคที่ยั่งยืน					
เป้าประสงค์ภาคการผลิต			เป้าประสงค์ภาคการบริโภค		
ภาคอุตสาหกรรม การผลิต	ภาคเกษตรกรรม และอาหาร	ภาคอุตสาหกรรม การบริการ (รวมทั้ง การท่องเที่ยว)	ภาคการจัดซื้อจัดจ้าง สินค้าและบริการที่เป็น มิตรกับสิ่งแวดล้อม ของภาครัฐและ เอกชน	ภาคเมืองและ องค์กรปกครอง ส่วนท้องถิ่น	ภาคการสร้าง ความตระหนัก และการศึกษา



# Three SCP positions and **policy approaches**



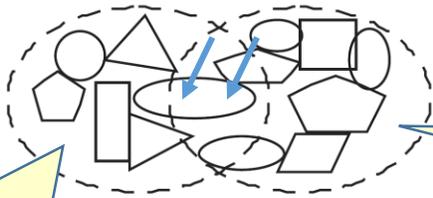
Reformist position

**Rebound** occurs

e.g., Khazzoom (1980), Greening et al. (2000), Kagawa, Tasaki, Moriguchi (2006)

**Improvement**  
elements such as  
pollution prevention & energy efficiency

Production – Consumption



Reconfiguration position (systemic approach for

Restricted people's behaviors by  
**embeddedness to social systems**

e.g., Spaargaren (2003)

**Rule change:**

e.g., cool-biz,  
reconsideration of  
the 1/3 rule for food  
products in Japan

Consumption

Revolutionary position

Sharing **without supposing  
owned products**

e.g., Belk et al. (2019), Amasawa (2020)

(such as de-growth and post-  
capitalism)

↙ Indicates policy intervention points.

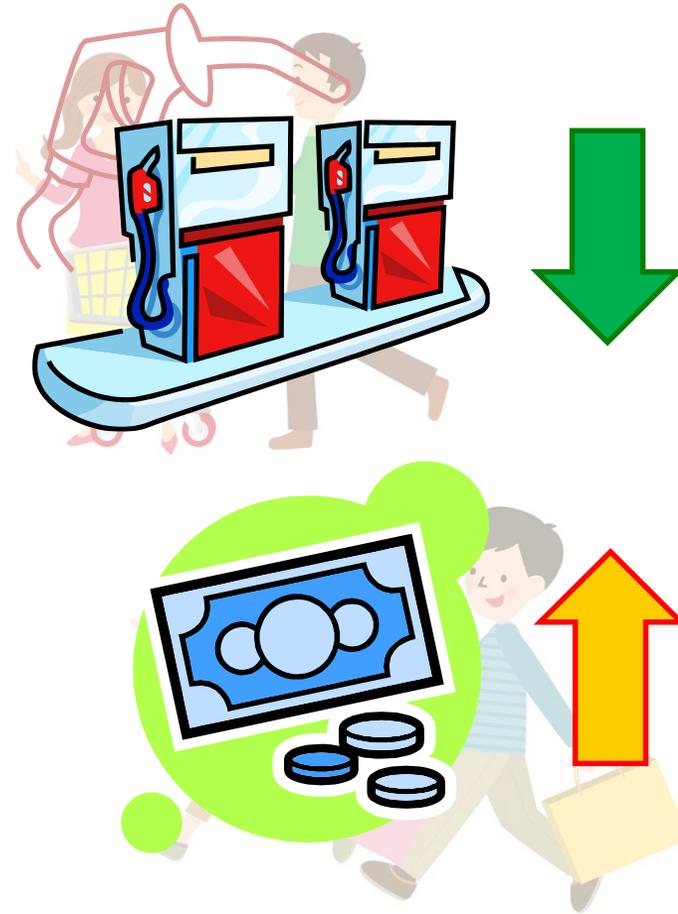
# Rebound effect

## as a consequence of improved environmental efficiency

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Eco-efficient products



Studies on rebound effects: e.g., Khazzoom (1980), Brooks (2000), Greening et al. (2000), Kagawa, Tasaki, Moriguchi (2006), Madlener & Alcott (2009).