Expansion of SCP policy domain from environmental policy to socio-economic technology policy

Yasuhiko Hotta, IGES

What is PECoP-Asia Project (S-16)?

- Strategic Research project (S-Project) under Environment Research and Technology Development Fund.

- Conducting policy-relevant studies for topics strategically important for Ministry of the Environment of Japan.

- PECoP-Asia is 16th project of the S-Project.

- 3-5 years research involving several themes with total approx. 1.5 million USD per year in total.

PECoP-Asia Project

- Focusing on "Policy Design and Evaluation to Ensure Sustainable Consumption and Production Patterns in Asian Region"

- Starting from June 2016 for 3-5 years.

- 4 themes related to SCP in the context of Asia.

- Led by University of Tokyo (Theme 1), NIES (Theme 2), IGES (Theme 3), and Keio University (Theme 4) (with 11 sub-themes)
  - Theme 1 approach: Engineering. Strengthening Relations between Consumption and Production towards Sustainability
  - Theme 2 approach: Sociology. Focusing on lifestyle and stakeholders engagement.
  - Theme 3 approach: Policy and Economics. Focusing on policy evaluation, modeling and sufficiency approach
  - Theme 4 approach: Governance and SDGs. Focusing on SDGs implementation in the context of SCP

Background of the study

❑ Growing attention of **Sufficiency Approach** – its thinking is explicitly or implicitly reflected in international policy processes: e.g. SDGs, Paris Agreement, G7 Toyama Framework

❑ Focus of SCP policy is shifting from end-of-pipe, product based, and technical-fix solution to **systemic changes in lifestyles and provision systems** with socio-physical infrastructure.

❑ **Collaboration between qualitative and quantitative analysis** is essential for analyzing systematic change towards SCP.

❑ Need to shift policy system from environmental policy to SCP policy

Sufficiency Approach in this study

An approach contributing to techno-social systems development controlling overall energy and resource consumption through decarbonisation and resource saving (including a shift in needs itself) keeping within resource and environmental constraints such as planetary boundaries, while maintaining or increasing well-being of the society as a whole

Limitation of Conventional Policy Typology

- Assuming conventional externality such as **pollutions and life cycle impact of products.**

- Not covering the **broader sustainability policy areas** (ex. Lifestyles, Sustainable infrastructure)

- Not integrating **ambitions towards long-term/mid-term targets** (ex. decarbonisation)

- Not dynamic enough to analyze **policy mix** for sustainability transition

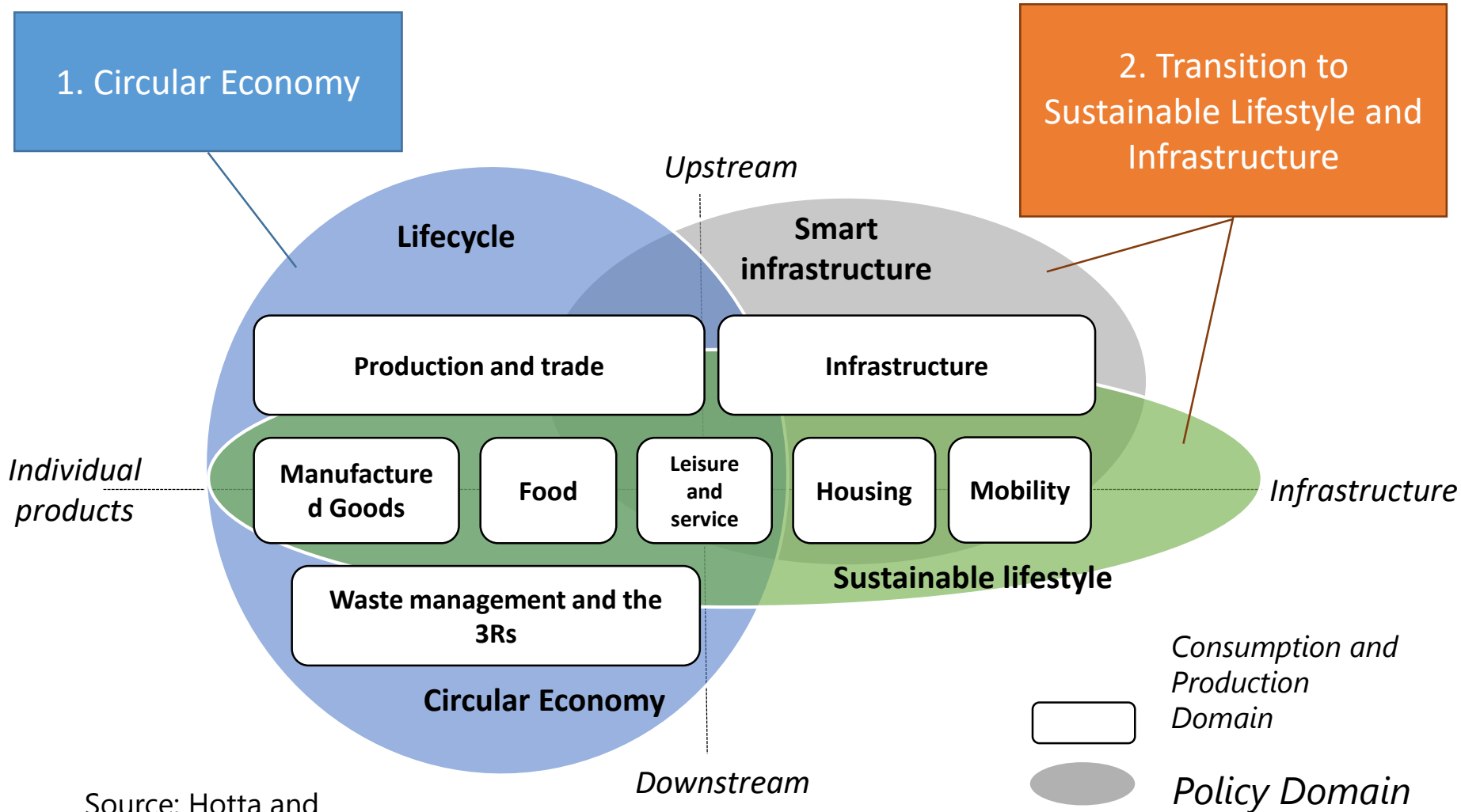| Strategies & action plans | Regulatory instruments | Economic instruments | Information-based instruments | Voluntary instruments |

Source: Hansen et al 2014

SCP Policy Design Concepts

|	Traditional Concept for SCP Policy Design	Concept of SCP Policy Design under the era of SDGs/Paris Agreement
Relationship between Goals and Policies	Harmonization of environmental protection and economic development (short-term goal setting)	Middle-term and Long-term ambitious target setting such as decarbonization and maintenance of planetary boundaries
Main players	National government, industry, citizens	Multi-stakeholders
Orientation of policies	Centralized. Mega-city. Government. Regulation. Standardization	Decentralized. Community. Governance. Establishment of model initiatives. Re-localization beyond/after standardization.
Targets	Products. Individual facility. Individual behavior	System. Infrastructure. Business model
Tools	Regulatory, economic and informational instruments targeting individual products, facilities and behaviors	In addition to the left, communication tools to facilitate collective design and decision making among multi-stakeholders
Indicators	Objective. Economic indicators. Direct environmental impacts.	In addition to the left, subjective indicators and footprint indicators
Relationship with socio-economic system and structure	Maintenance of current socio-economic system and structure(often not mentioned)	Addressing reform of socio-economic system through innovation and structural change in production and consumption relations.

Two Domains of SCP: Circular Economy and Sustainable Transition

1. Circular Economy

2. Transition to Sustainable Lifestyle and Infrastructure

Upstream

Lifecycle

Smart infrastructure

Production and trade

Infrastructure

Individual products

Manufactured Goods

Food

Leisure and service

Housing

Mobility

Infrastructure

Sustainable lifestyle

Waste management and the 3Rs

Circular Economy

Downstream

Consumption and Production Domain

Policy Domain

Source: Hotta and Koide

Important domains for sustainable consumption and lifestyle

Carbon footprint (world, 2000)

Construction 10%
Trade 5%
Food 20%
Consumer goods 13%
Housing 19%
Service 16%
Mobility 17%
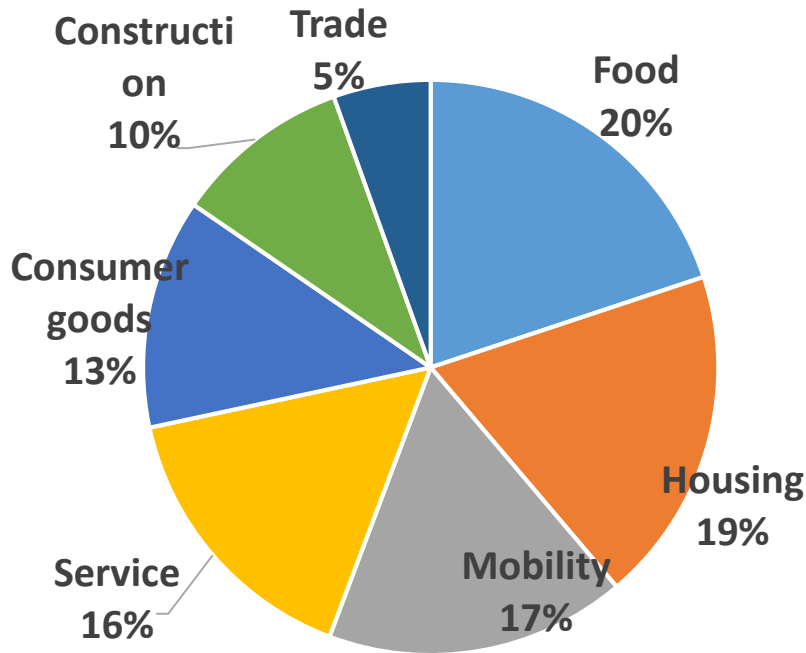
Source: Hertwich & Peters (2009)

Food

Example of initiatives
- ✓ Reducing meat consumption
- ✓ Food loss reduction
- ✓ Sustainable food production
- ✓ Localized production and consumption

Mobility

- ✓ Utilization of ICT
- ✓ Compact city
- ✓ Bicycle, walking
- ✓ Ride sharing
- ✓ Public transport
- ✓ Car sharing

Hosing

- ✓ Zero energy housing
- ✓ Passive house
- ✓ High energy efficient appliances
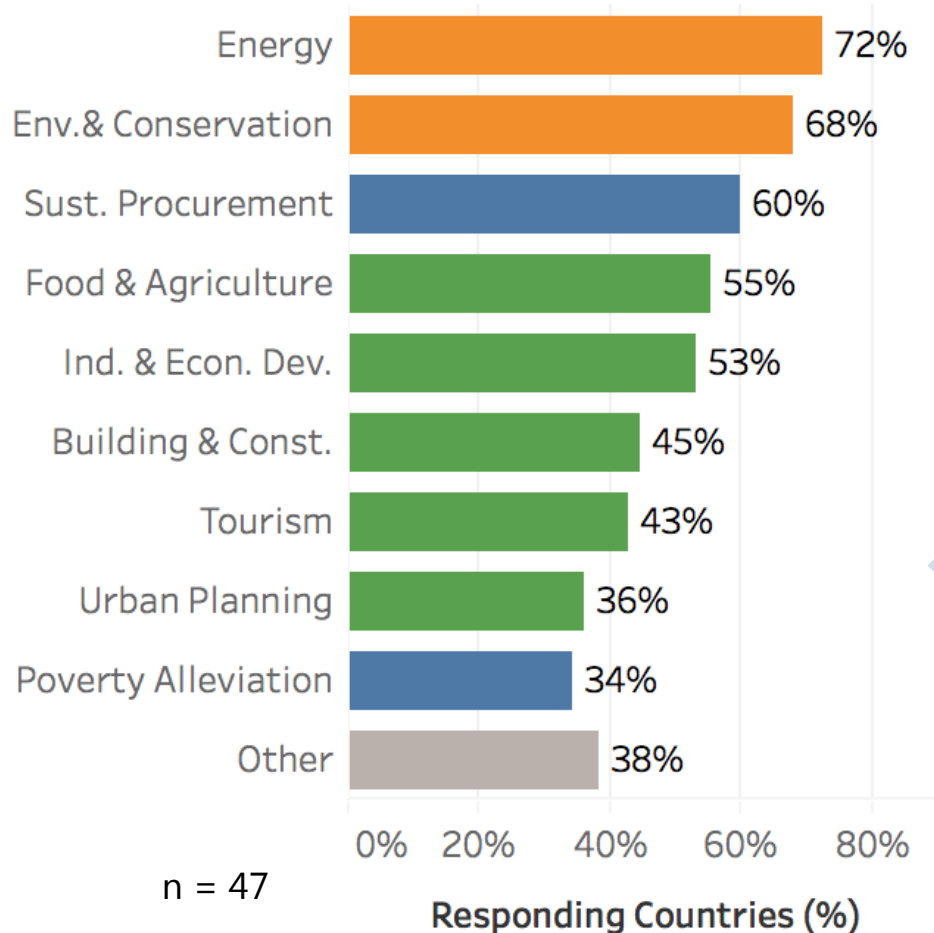- ✓ Renewable energy

Consumer goods

- ✓ Sharing
- ✓ Servicizing
- ✓ Remanufacturing
- ✓ Refurbishing
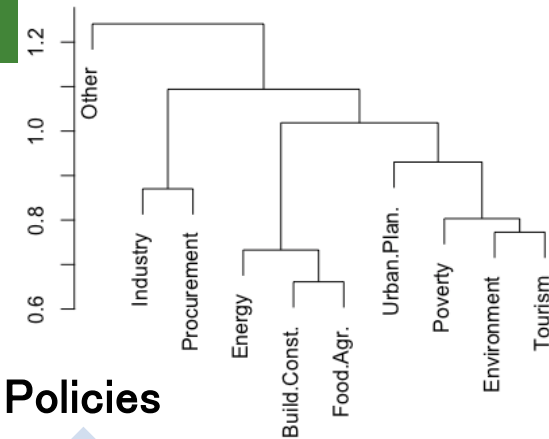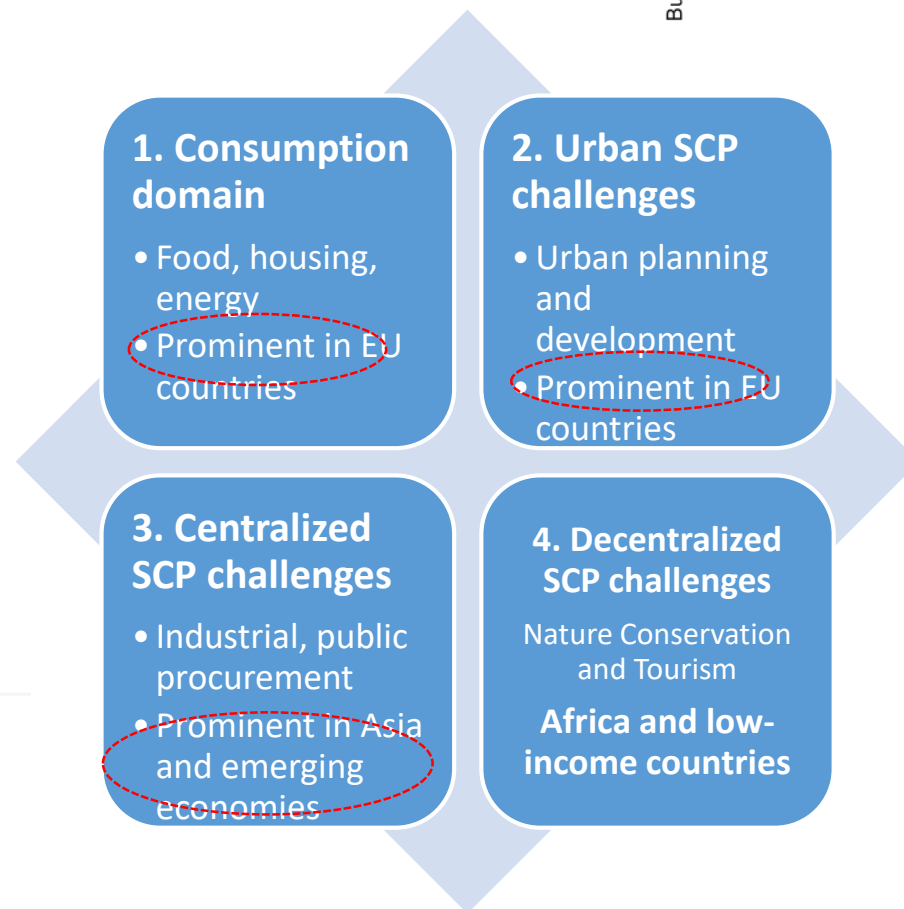- ✓ Reuse, repair

Source : IGES

Expansion of SCP Policy Domain

Target of SCP Policies（47 countries）

Energy — 72%
Env.& Conservation — 68%
Sust. Procurement — 60%
Food & Agriculture — 55%
Ind. & Econ. Dev. — 53%
Building & Const. — 45%
Tourism — 43%
Urban Planning — 36%
Poverty Alleviation — 34%
Other — 38%

Responding Countries (%)

n = 47

Is SCP currently addressed in existing national policies?
If yes, please indicate the focus of this/these national policies.

Cluster of SCP Policies

1. Consumption domain
- Food, housing, energy
- Prominent in EU countries

2. Urban SCP challenges
- Urban planning and development
- Prominent in EU countries

3. Centralized SCP challenges
- Industrial, public procurement
- Prominent in Asia and emerging economies

4. Decentralized SCP challenges
Nature Conservation and Tourism
Africa and low-income countries

出所：Koide & Akenji (2017)

Sustainability policy discourse (1970s-2010s)

	Pollution prevention	Efficiency	Sufficiency (Responding to rebound effect)	
			Circular & Share	One planet living
	1970s	1990s	2010s	2010s (After SDGs & Paris Agreement)
Major concepts	Pollution prevention	Cleaner production, zero emissions, industrial ecology	Circular economy, sharing economy, Dematerialization	One planet living, Sufficiency, Decarbonization
Key issues	Industrial pollution	Climate change, waste, environmental issues associated with consumption	Well-being, lifestyle Socio-technical system of service provisions	
Environment-economy relationship	Separate, contradictory, confrontational	Compatible, industrialization can be harmonized with environmental conservation	Inclusion of social consideration Sustainability is a key for next socio-technical innovation	
Approaches	Installation of end of pipe technologies	Increasing material and energy efficiency	Innovation, new business model, ICT	Consensus building, change in systems of service provision
Major actors/ stakeholders	Government v.s. Industry	Collaboration of government & market agents	Business model, social entrepreneurship	Multi-stakeholder, lifestyle
Attitude of policy	React and cure	Anticipate and prevent	Create and communicate	Long-term goal setting, investment, creating business model for sufficiency business

Source: authors referring to Weale (1992), Jänicke & Weidner (1995), Hajer 1995, Dryzek (1997)

SCP policy domain are expanding from the environmental policy domain to the socio-economic technology policy domain.
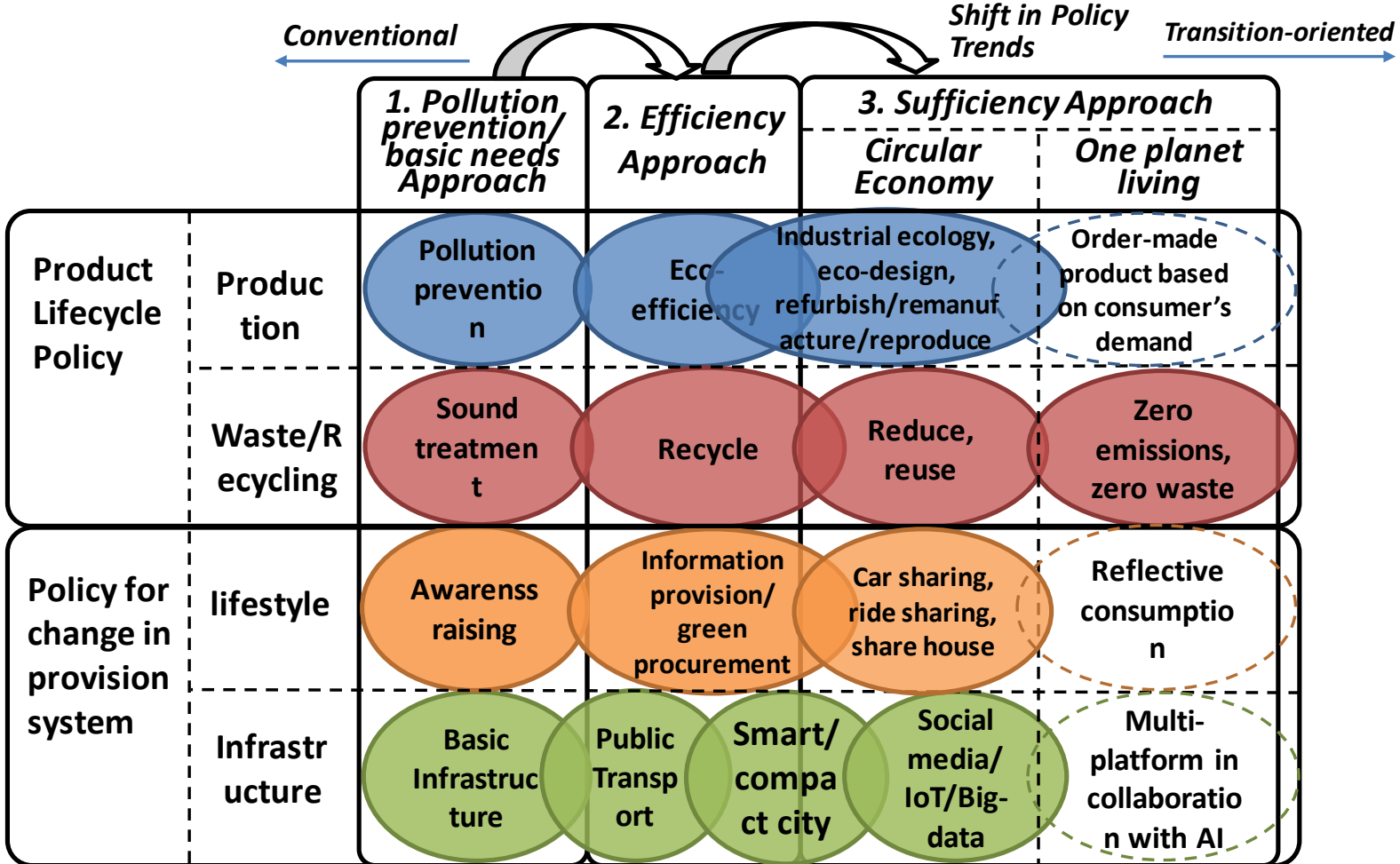
Source: authors

Policy brief for SDG 12

Published July 2018 for HLPF 2018.

Outcome from collaboration of the APRSCP and the PECoP-Asia project.

- Asia-Pacific context
- Four policy directions
- 12 opportunities
      for SCP

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.
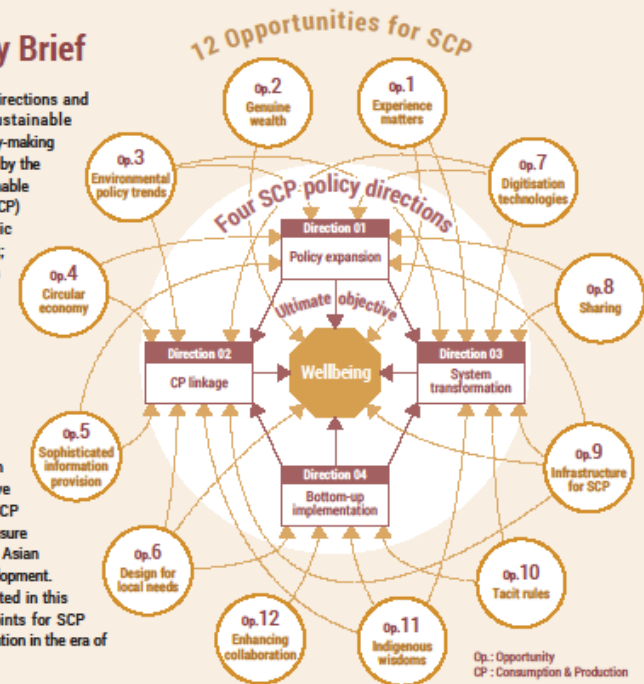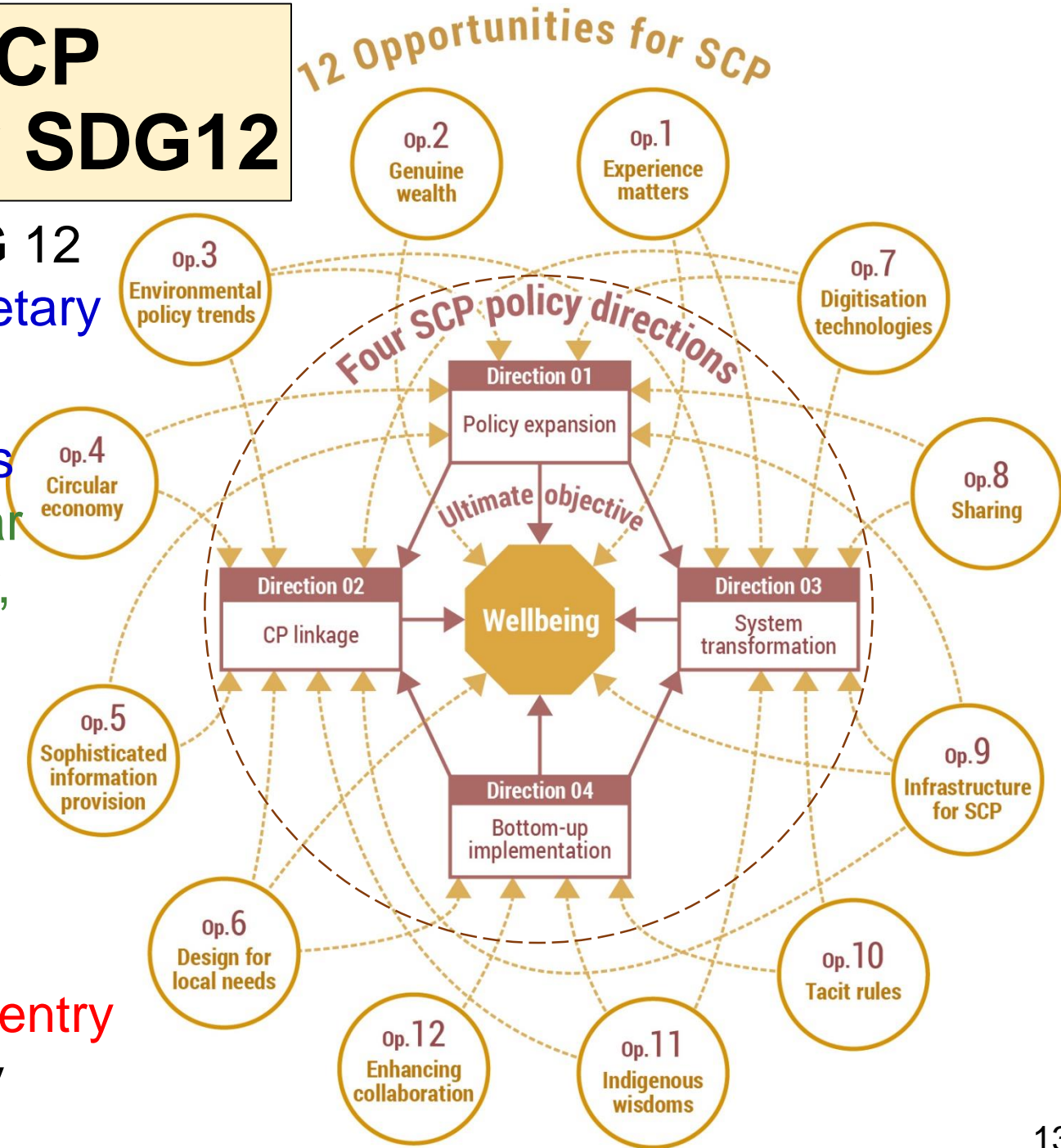
Designing SCP activities for SDG12

Achievement of SDG 12 for both human/planetary wellbeing.

Four policy directions correspond to circular economy, sufficiency, transition & multistakeholder approaches.

Take advantage of emerging forces.

12 opportunities are entry points for SCP policy toward 2030.

12 Opportunities for SCP

Op.2 Genuine wealth

Op.1 Experience matters

Op.3 Environmental policy trends

Op.7 Digitisation technologies

Op.4 Circular economy

Four SCP policy directions

Direction 01
Policy expansion

Ultimate objective

Op.8 Sharing

Direction 02
CP linkage

Wellbeing

Direction 03
System transformation

Op.5 Sophisticated information provision

Direction 04
Bottom-up implementation

Op.9 Infrastructure for SCP

Op.6 Design for local needs

Op.10 Tacit rules

Op.12 Enhancing collaboration
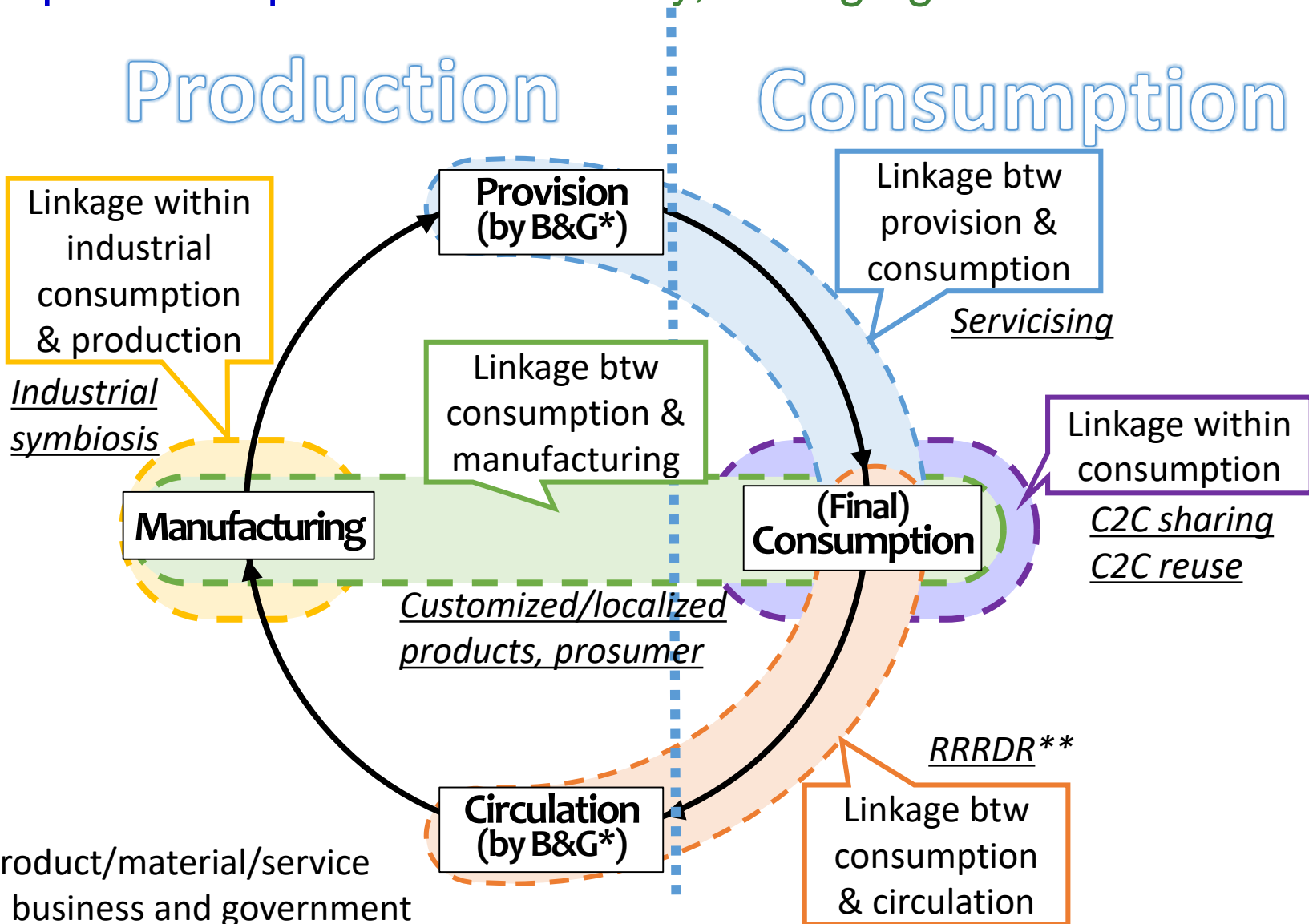
Op.11 Indigenous wisdoms

13

Strategic Policy Direction 1. SCP policies are expanding from the environmental policy domain to the socio-economic technology policy domain.
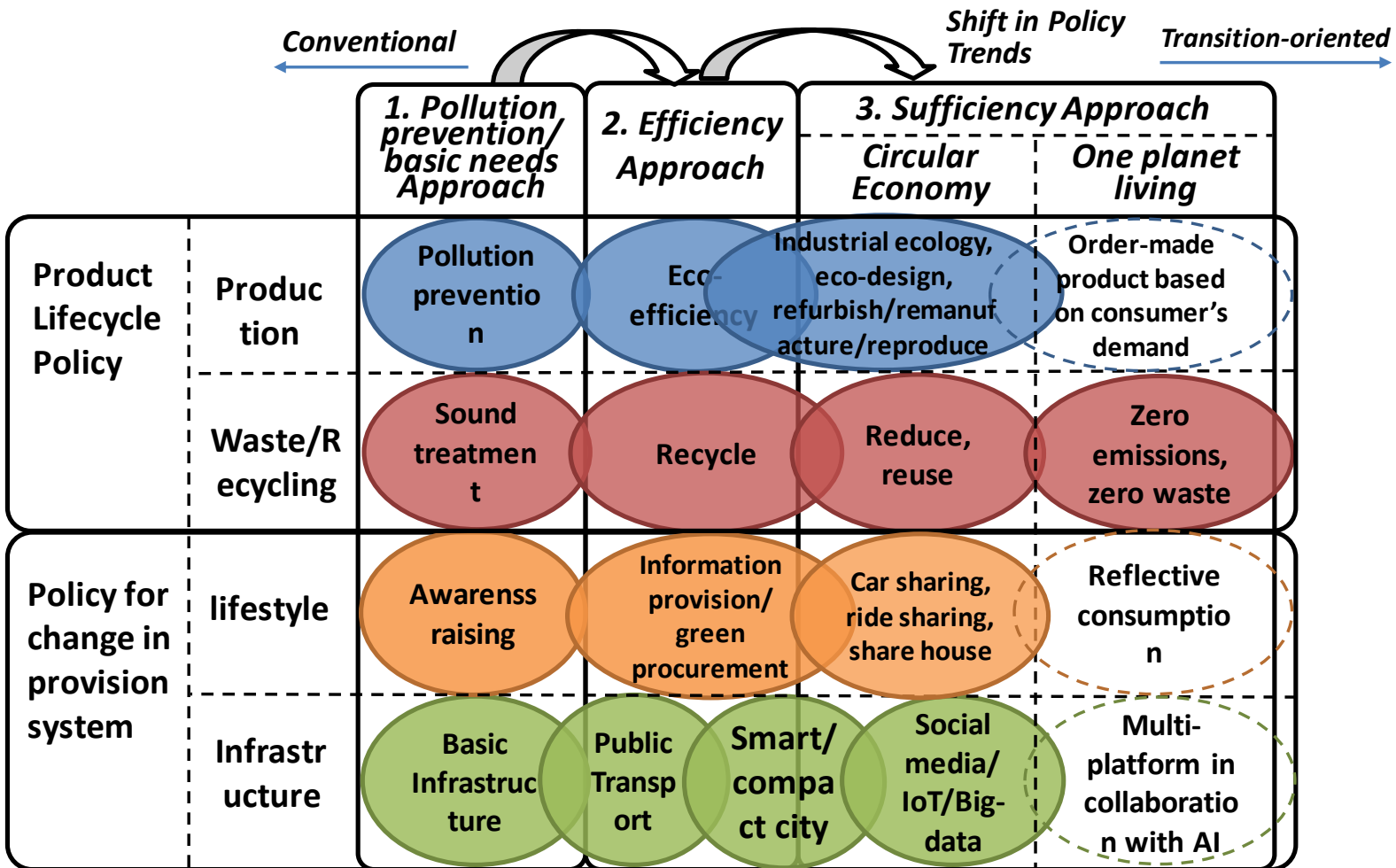
Source: authors

Strategic Policy Direction 2. Strengthening linkages between consumption and production is a key, emerging trend.

Production | **Consumption**

Linkage within industrial consumption & production
Industrial symbiosis

Linkage btw provision & consumption
Servicing

Linkage btw consumption & manufacturing

Linkage within consumption
C2C sharing
C2C reuse

Customized/localized products, prosumer

Provision (by B&G*)

Manufacturing

(Final) Consumption

Circulation (by B&G*)

*RRRDR***
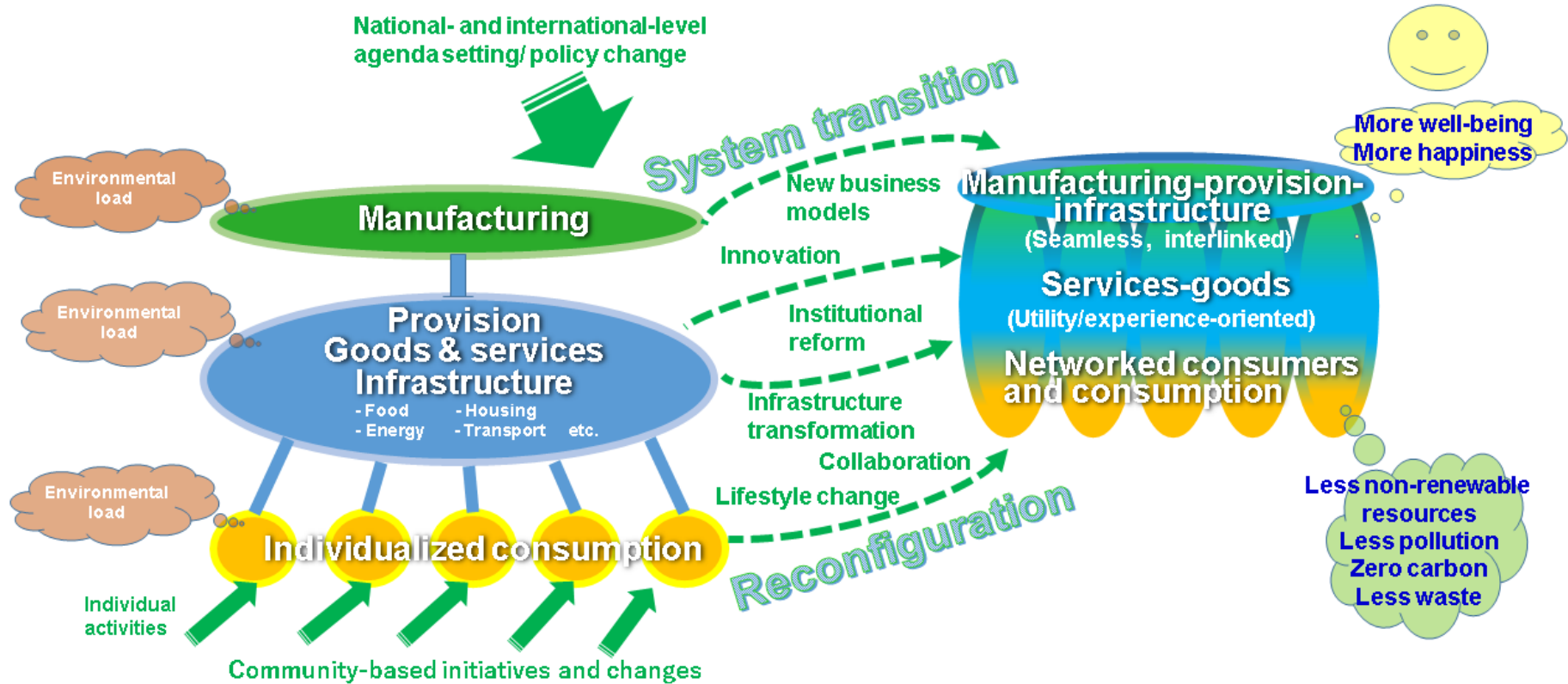
Linkage btw consumption & circulation

→ Product/material/service

* B&G: business and government

** RRRDR: Remanufacture, Refurbishment, Repair and Direct Reuse

3. Transition to SCP is a socio-technical regime shift.
# 4. Bottom up approaches are necessary to enhance effectiveness and acceptance of SCP policies across the region

National- and international-level agenda setting/ policy change

System transition

Environmental load

Manufacturing

New business models

Innovation

Institutional reform

Infrastructure transformation

Collaboration

Lifestyle change

Reconfiguration

Environmental load

Provision Goods & services Infrastructure
- Food
- Energy
- Housing
- Transport   etc.

Environmental load

Individualized consumption

Individual activities

Community-based initiatives and changes

Manufacturing-provision-infrastructure (Seamless, interlinked)

Services-goods (Utility/experience-oriented)

Networked consumers and consumption

More well-being More happiness

Less non-renewable resources Less pollution Zero carbon Less waste

A) Conventional system of mass production and consumption

B) Sustainable system of interlinked consumption and production

12 Emerging Opportunities
as entry points for SCP policies
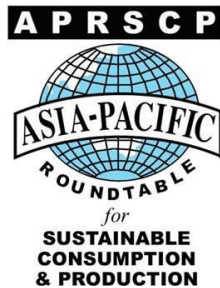
Op.1: Experience matters more than goods

Op.2: Measurement of genuine wealth

Op.3: Environmental policy trends

Op.4: Circular economy

Op.5: Sophisticated information provision

Op.6: Design for local needs

Op.7: Digitization technologies

Op.8: Sharing economy

Op.9: Infrastructure for SCP

Op.10: Tacit rules

Op.11: Indigenous wisdoms

Op.12: Enhancing multistakeholder collaboration

An example of SCP activities designed with the opportunities

Op.1: Experience matters

Op.7: Digitization

Op.8: Sharing

Op.9: Infrastructure

Op.12: Collaboration

Car sharing in collaboration with city governments

HOV lane
(High Occupancy Vehicle)

From possession to riding

Diminished congestion & air pollution

SCP directions #2–4
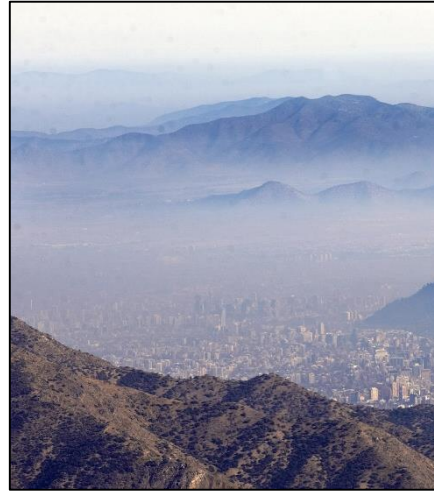
18

An example of SCP activities designed with the opportunities

Cold climate
(Highland, etc.)

Self-sufficiency
rate of food is low

Burning of
fire woods

Smog &
air pollution

Unused heat
(Geothemal, waste, etc.)

Cultivation in hothouses utilizing local energy with support of local government

Op.3: Environmental policy trends
Op.6: Design for local needs
Op.9: Infrastructure for SCP
Op.12: Enhancing collaboration

SCP directions #1 & 4

Increased local food supply
Reduction of air pollution

For discussion

1) SCP transition is about long-term social planning. It is fundamentally different from environmental policy design responding to pollutions. It is vital to identify and develop communication tools for sharing visions among stakeholders. Policy design under the era of SDGS include communication/planning tools.

2) Challenges and opportunities of building networks and partnerships to encourage pooling of resources towards SCP policy and implementation

-At HLPF 2018, Many countries pointed out that SCP is complex policy area and cannot fit into one policy area and conventional role sharing among ministries. Some pointed out that benefits of SCP promotion should be clearly demonstrated towards outside of SCP circle.

3) To discuss recommendations on how to form synergies among effective change agents to drive innovations and investments on SCP

-Move one step forward from just conceptual discussion, sharing of good practices, and policy dialogue. Establish practical regional policy working group for scoping issues, analyzing current status, conducting policy analysis, and forming policy guidance. Start from circular economy-related issues.

Acknowledgement

The PECoP-Asia project is supported by the Environment
Research and Technology Development Fund (S-16) of
the Environmental Restoration and Conservation Agency, Japan.

PECoP-Asia Project

- Focusing on "Policy Design and Evaluation to Ensure Sustainable Consumption and Production Patterns in Asian Region"

- Policy Research Project funded by Ministry of the Environment of Japan

- Starting from June 2016 for 5 years.

- 4 themes related to SCP in the context of Asia.

- Led by University of Tokyo (Theme 1), NIES (Theme 2), IGES (Theme 3), and Keio University (Theme 4) (with 11 sub-themes)
  - Theme 1 approach: Engineering. Strengthening Relations between Consumption and Production towards Sustainability
  - Theme 2 approach: Sociology. Focusing on lifestyle and stakeholders engagement.
  - Theme 3 approach: Policy and Economics. Focusing on policy evaluation, modeling and sufficiency approach
  - Theme 4 approach: Governance and SDGs. Focusing on SDGs implementation in the context of SCP

Objectives

- To propose Policy Package to establish SCP patterns in Asia in consideration of different patterns of economy and lifestyle for at least 3 types of countries; advanced economies (Japan), emerging economies (Thailand, Indonesia or Malaysia), and developing economies (Viet Nam)

- To evaluate effectiveness and influence of policies and institution in terms of implementation of SDGs or related goals(such as Limiting within Planetary Boundary) through quantitative indicators by utilizing economic modeling and environmental impact assessment. **→Policy Research and Goal Setting for SCP**

- To contribute to science-based policy design and dialogue for establishing SCP patterns in Asia through accumulating cases of policy implementation as well as evaluation model. **→ Contribution to SCP policy implementation in Asia**

SCP-related International Initiatives

10 Years Framework Programme of SCP
Launched in 2012. Japan is a co-lead of Sustainable Lifestyle and Education (SLE) Programme. IGES is a coordination desk of SLE programme

International Resource Panel
IPCC-relevant expert panel on sustainable resource management. Established in 2007. Publishing various assessment reports on resource issues. IGES is contributing to steering committee

Regional 3R Forum in Asia and the Pacific
More than 30 countries are participating. Largest regional policy forum on circular economy and waste. IGES and UNCRD recently published State of the 3Rs in Asia and the Pacific report.

Switch-Asia
Large international cooperation programme on SCP by EU. From 2018, IGES is a co-host of this initiative along with GIZ and Adelphi. IGES Bangkok office locates its secretariat.

Asia Pacific Round Table on SCP (APRSCP)
Originally international network of national cleaner production centres. Policy makers and experts gather together once every two years. HQ is in Thailand. IGES along with S-16 group are collaborating with this forum strategically.

S-16 Research Group of 環境研究総合推進費
Collaborative research group on SCP policy research among University of Tokyo, NIES, IGES and Keio University. Published a policy brief at HLPF 2018.