

# 3E Nexus Initiative for Sustainable Regional Development

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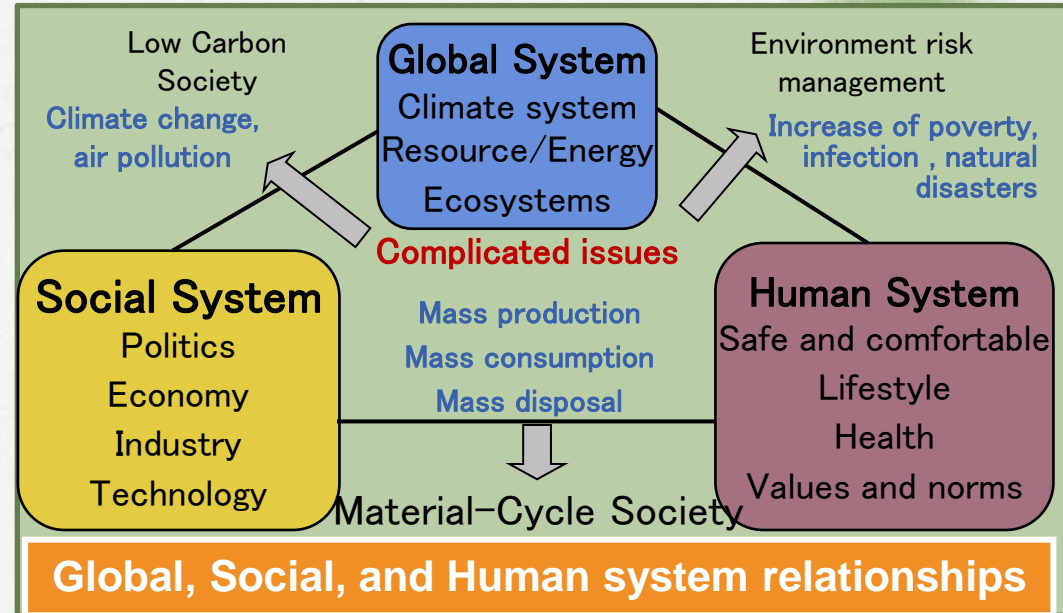
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# Activities of IR3S

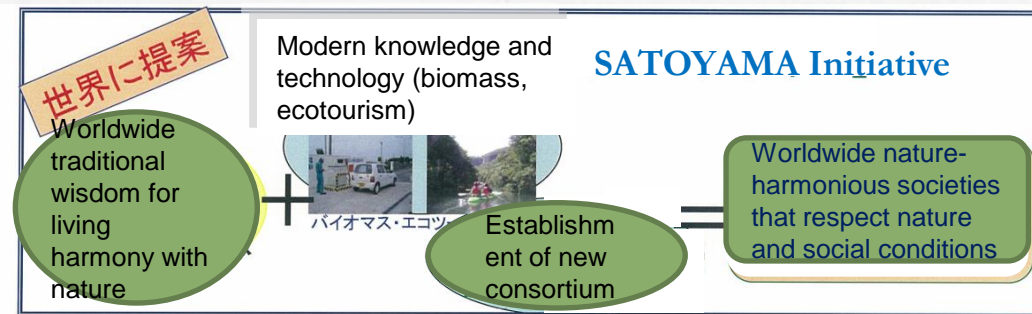
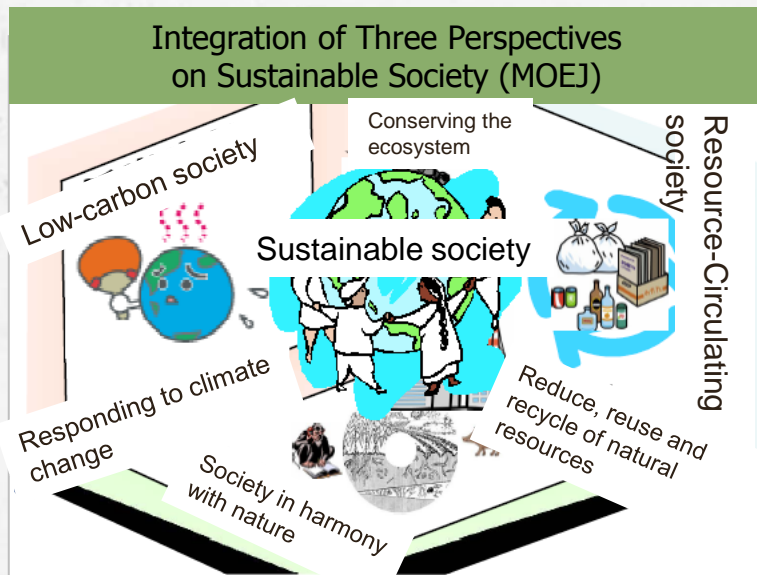
- ◆ Sustainability Science is an integrated and holistic science emerging in the 21<sup>st</sup> Century
- ◆ Aims to solve pressing global issues such as climate change, resource depletion, natural disasters and poverty
- ◆ IR3S was founded in 2005 as a network for Japanese universities and research institutes, and aims to become a global research hub
- ◆ IR3S was succeeded by the Sustainability Science Consortium (SSC) in 2010
- ◆ IR3S became a research institute under the umbrella of the Todai Institutes for Advanced Study (TODIAS) in 2013, as a world-class research institute



International Conference for Sustainability Science  
UNESCO, Paris

# National Environmental Strategies towards Integration of Three Societies

- ◆ Approved in the first Abe Cabinet in 2007 and became the principle pillar of Japan's environmental policy
- ◆ Proposed to comprehensively examine the relationship of humans and nature through the integration of energy, materials and ecosystems
- ◆ Aims to develop a sustainable society by integrating the concepts of a Low-Carbon Society, a Resource-Circulating Society, and a Nature-Harmonious Society
- ◆ Actually, global environment policy, waste recycling policy and natural environment policy are developed separately
- ◆ There is a need for integrated development of environmental policy with emphasis on these 3 society concepts at the regional level



Source: Ministry of the Environment

# Renewable Energy after the Great East Japan Earthquake

- ◆ Better prospects for renewable energy after the Fukushima Daiichi nuclear accident, and promotion through feed-in tariffs
- ◆ Solar energy, wind energy, biomass, small hydro, and geothermal have drawn greater attention
- ◆ The potential of renewable energy varies in different regions, hence the choice of energy should be based on the conditions of each region
- ◆ Renewable energy should be decentralized, and closely related to the future regional social structure
- ◆ A roadmap is needed for the transition from fossil fuels to a renewable energy-based society



(Obihiro)



Klaus Töpfer, Director of IASS (Germany)

# Urban Environmental Planning in an Era of Population Decline and Ageing

- ◆ The focus has moved from “how to limit urban expansion?” to “how to control urban degeneration?”
- ◆ Unplanned degeneration leads in reverse sprawls and a decrease of regional vitality
- ◆ Maintaining urban functions and creating compact cities are the greatest challenges of the 21st century
- ◆ A super-ageing society with public safety, where everyone can live a healthy life with peace of mind
- ◆ A tsunami-hit area with a model of compact city and nature restoration, where people can safely move to higher elevation

## Image of a Compact City



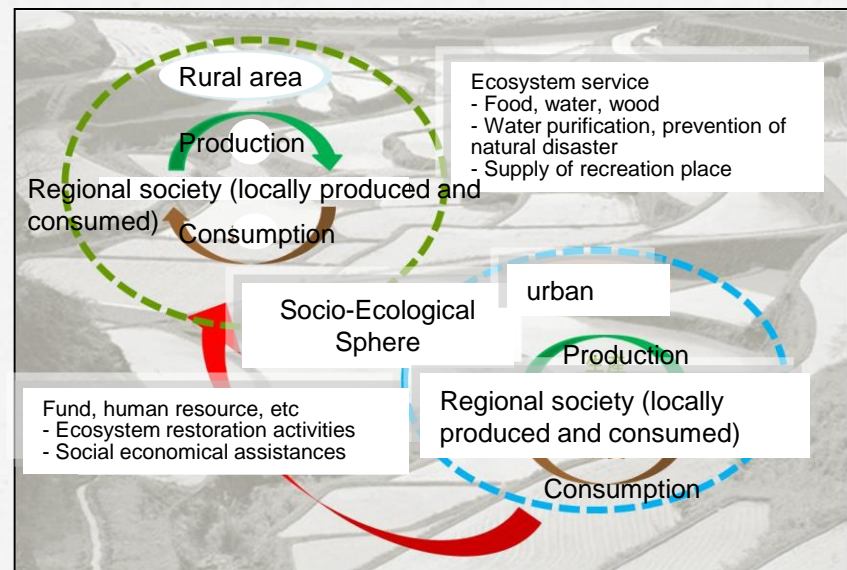
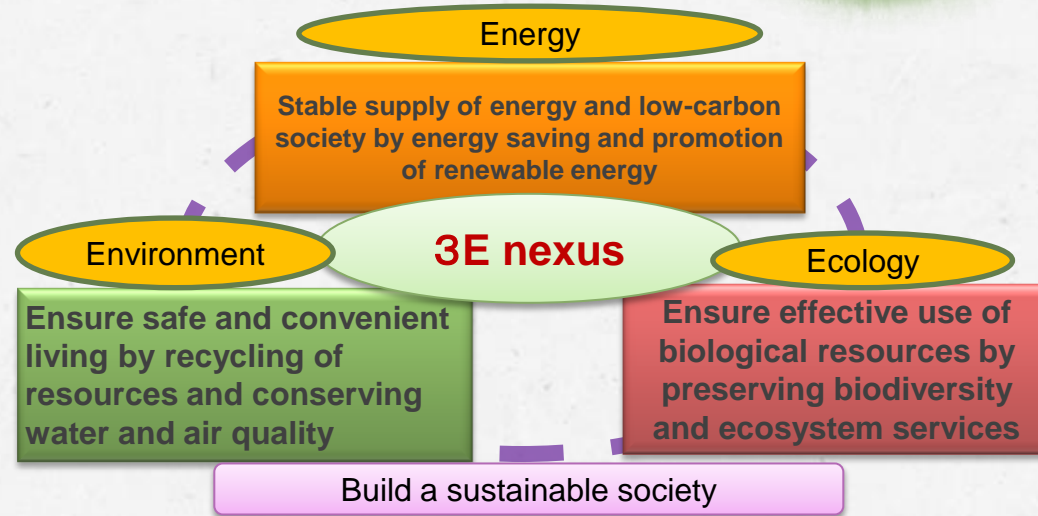
## A City Relocation Plan



(Resource: Ministry of Land, Infrastructure, Transport and Tourism)

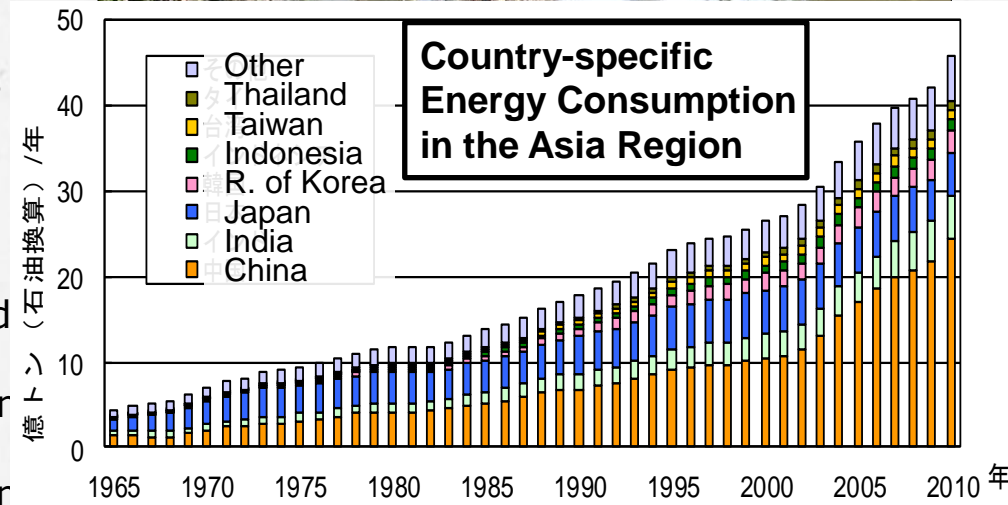
# Energy, Environment and Ecosystems (3E) Nexus Initiative

- ◆ The 3E nexus is an initiative of IR3S for developing a sustainable society through integration of energy, environment (material, water, air) and ecosystems
- ◆ The national biodiversity strategy proposes a “socio-ecological sphere” connecting with urban and rural ecosystems
- ◆ The 3E Nexus Initiative has produced the idea of a “regional low-emission and nature-harmonious sphere”



# Rapid Growth in Asia

- ◆ Mass Consumption of Energy
  - Urbanization
  - Increase in distances traveled
  - Urban infrastructure-building and a "car society"
  - Westernization and higher incomes
  - Lifestyle changes reflecting the above
- ◆ Environmental Pollution
  - Deterioration in the urban water environment due to sewage from homes and commercial facilities
  - Air pollution from heavy automobile traffic
  - Improper collection and treatment of an ever-increasing volume of solid waste, resulting from mass consumption
- ◆ Ecosystem Destruction
  - Eradication of life forms as a result of urbanization and disorganized, unplanned land use
  - Destruction of reciprocal relationships between life forms due to environmental pollution
  - Improper management of Satochi-Satoyama in conjunction with rural depopulation



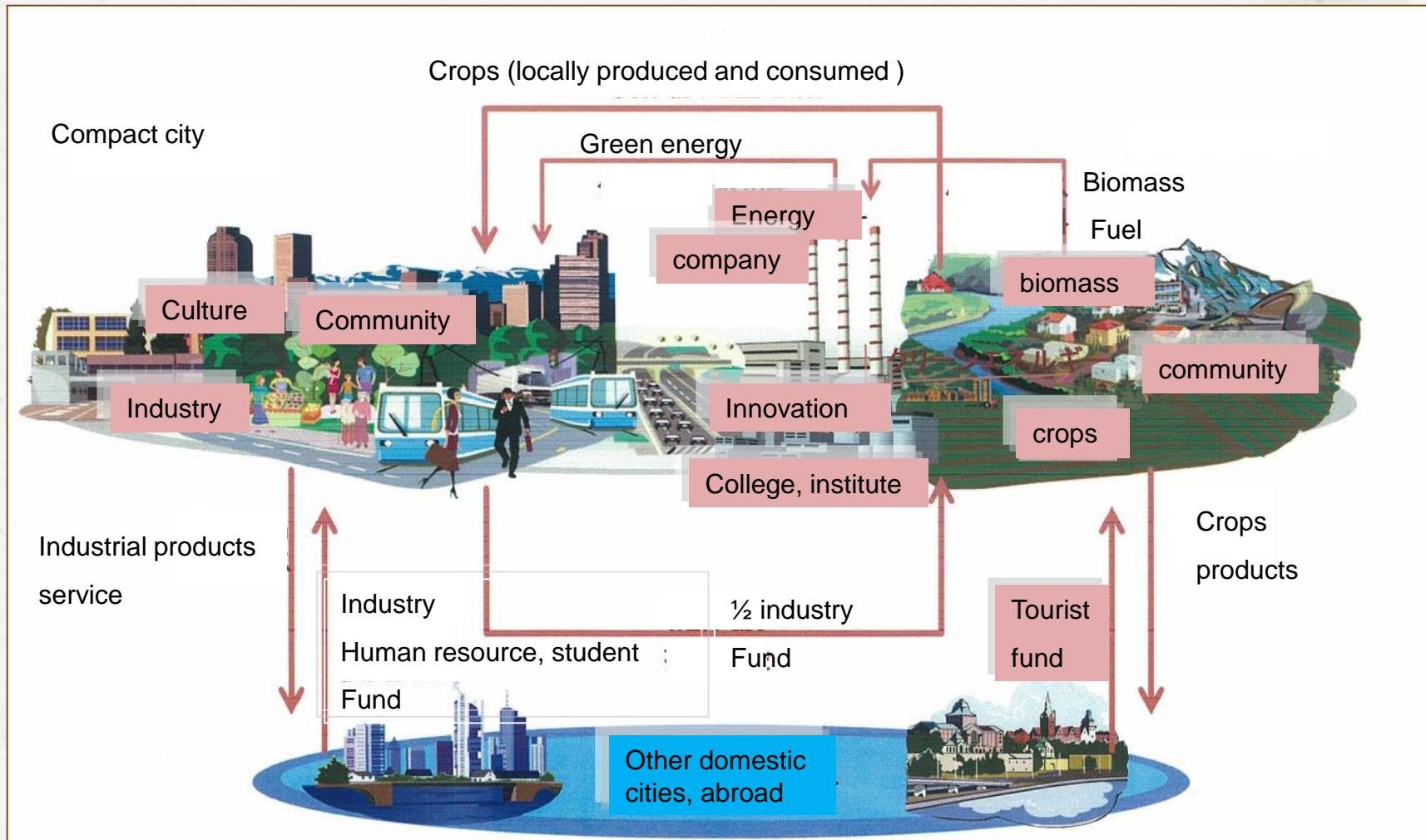


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IR3S  
Integrated Research Center for Sustainability Science

# Social System Innovation between Urban and Rural Regions

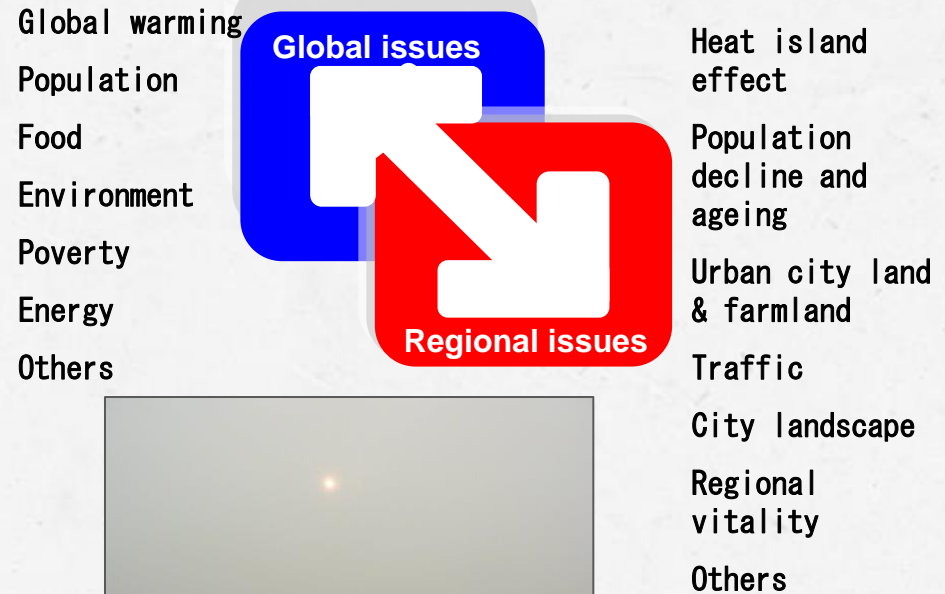




# 3E Nexus Initiative in the Asia-Pacific Region

- ◆ Japan is committed to promote low carbon societies within and outside the country with a greater emphasis on the Asia-Pacific region.
- ◆ Seeking solutions for both global and regional issues, for both developed and developing countries.
- ◆ Not only for promotion of low carbon society but also towards improving regional environment and ecosystem.
- ◆ As well as contributing to the solution of environmental issues, also leading to the improvement of human well-being.

## Fusing Global and Regional Issues



PM2.5 pollution  
(Zhenjiang, China)

**Thank you very much!**

