

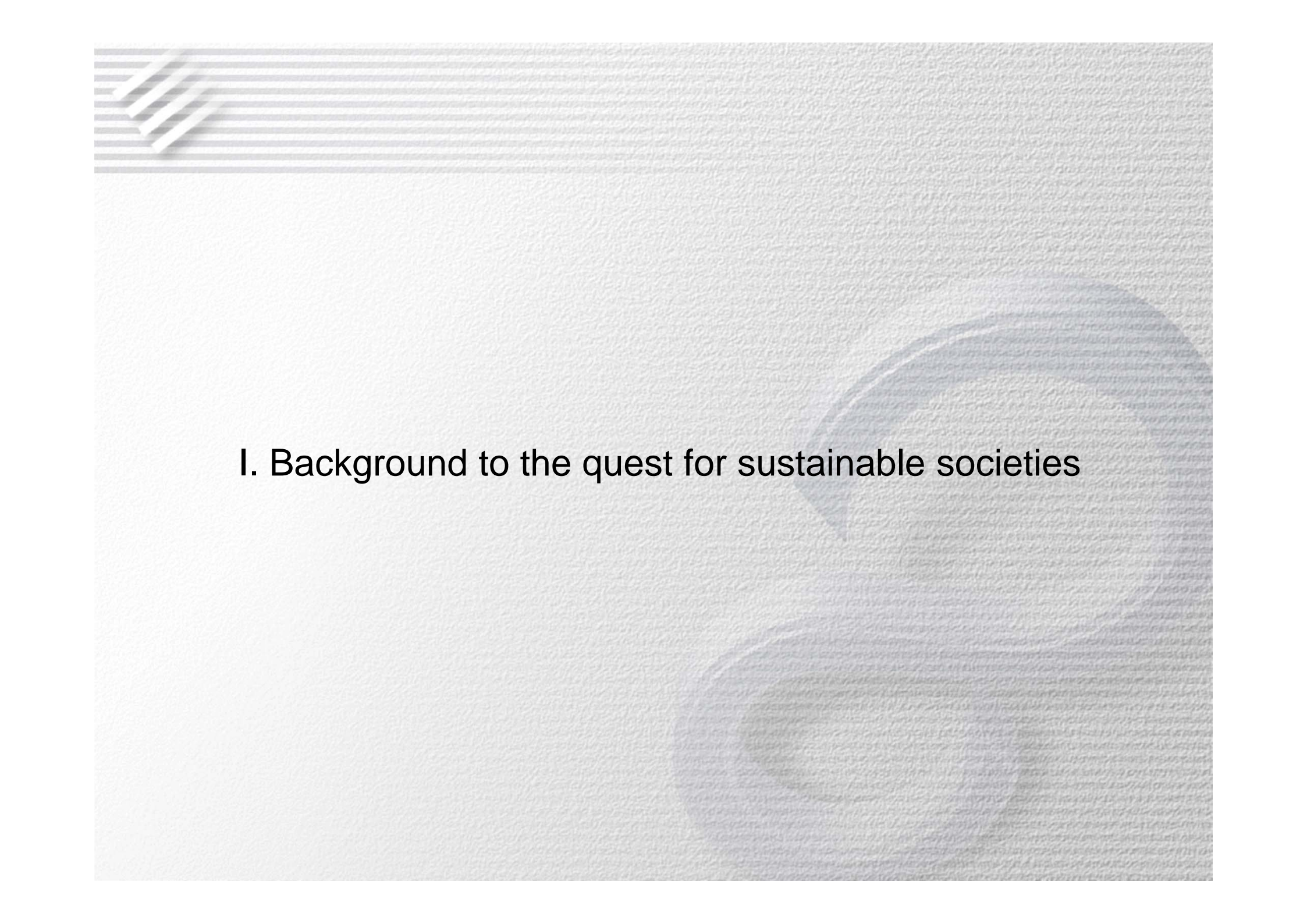
International Conference on Promoting
Low-Carbon Cities

Creating a Low-Carbon Society from the Grass Roots: Making the Most of Residents' Wisdom and Abilities

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February 11, 2011

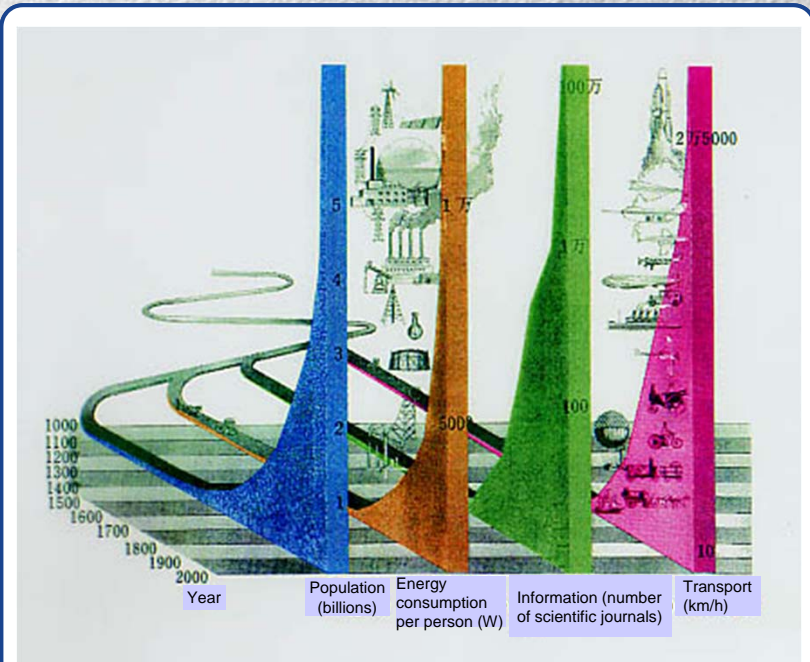
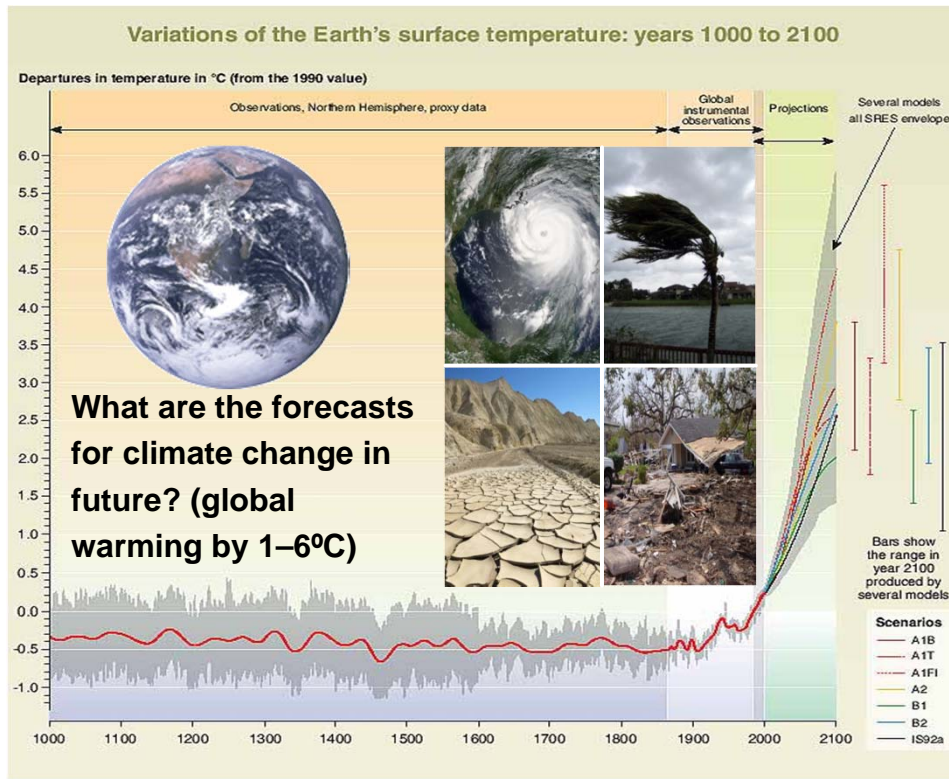
Venue: Kyoto International Conference Center



I. Background to the quest for sustainable societies

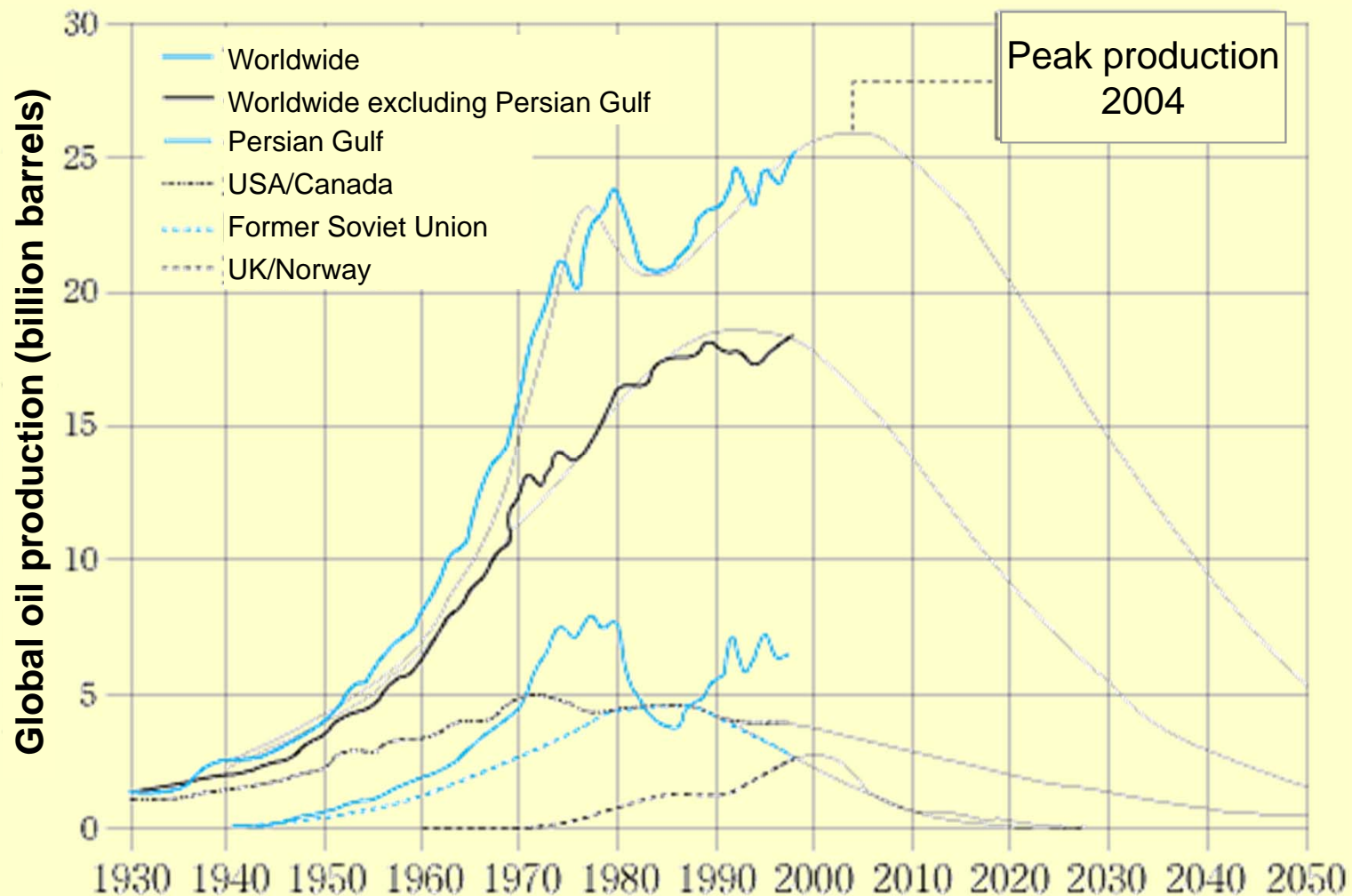
Why is there now a quest for sustainable societies?

Our planet is at risk!!



Resource depletion, environmental degradation (environment), family breakdown, increased alienation (personal/social), greater inequality, breakdown of regional economies (economics)

Oil production will start to decrease!



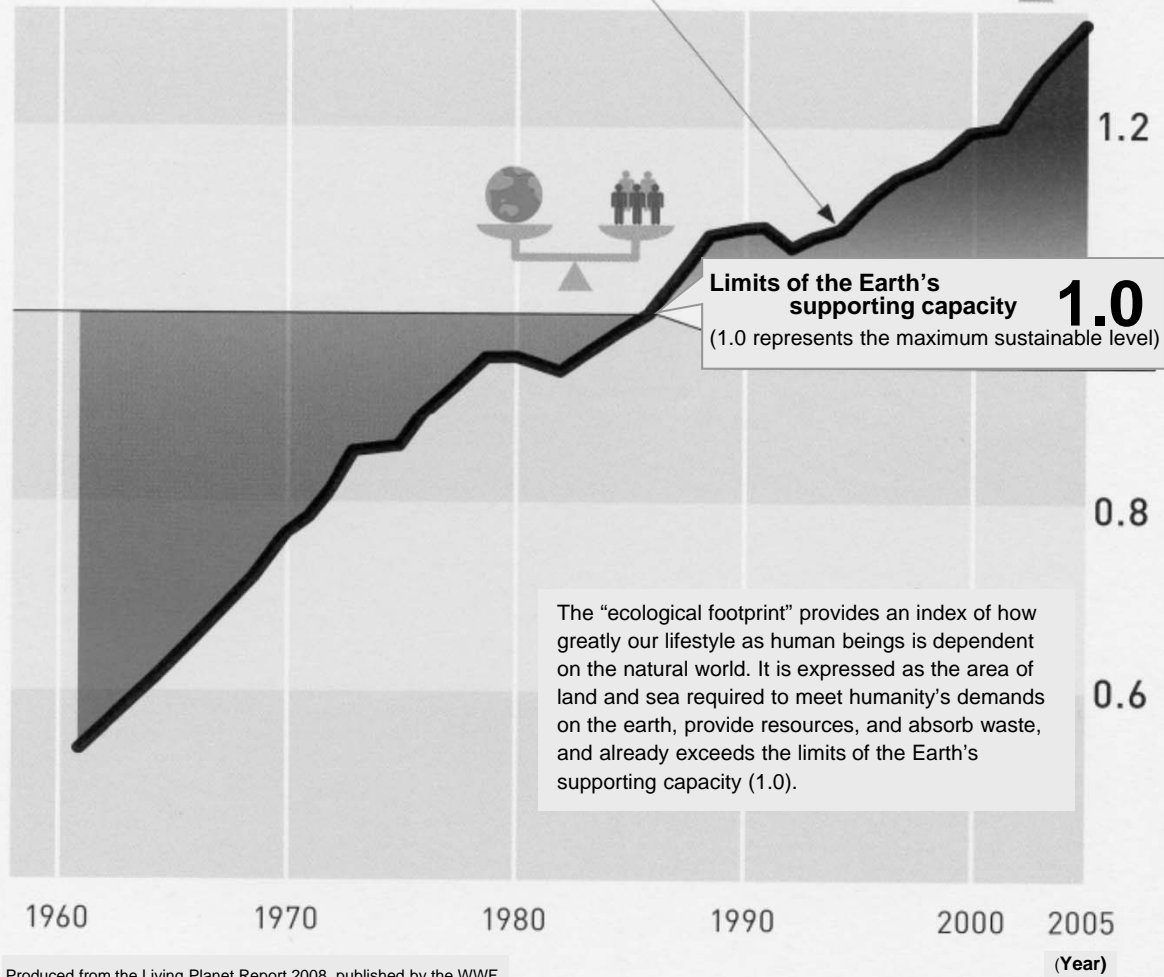


Only when the last tree has died,

**the last river has been poisoned,
and the last fish has been caught
will we realize that we cannot eat money.**

As we have already seen, the crisis creeping up on us is continuing to cause massive damage to the bounty of nature that supports human life. Since the Industrial Revolution, human society has enjoyed material plenty and convenience in exchange for mass consumption. As a result, the forests that formerly covered the Earth are rapidly being lost, and the fossil fuels formed over long ages within the earth from the remains of ancient organisms are facing depletion while causing global warming. Truly, the last tree is on the verge of dying. This chapter will take an in-depth look at the situation of dying trees, which are being cut down faster than they can grow.

Changes in humanity's ecological footprint

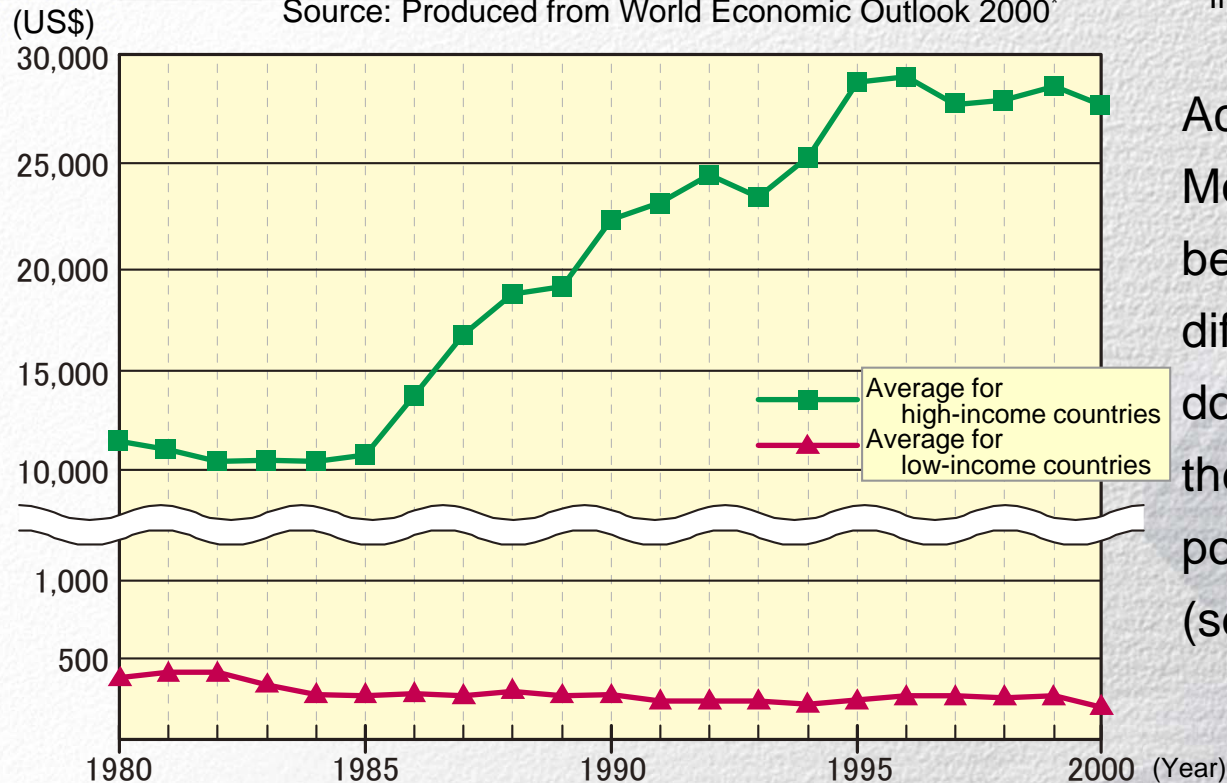


Is economic growth really eliminating poverty?

Figure: Changes in GDP per person (US\$ conversion)

Source: Produced from World Economic Outlook 2000*

* World Economic Outlook, published by the International Monetary Fund (IMF) 2000



According to the International Monetary Fund (IMF), between 1980 and 2000 the difference between the gross domestic product (GDP) of the world's 20 richest and poorest countries grew wider (see figure).

The average GDP of 20 high-income countries increased by approximately 2.6-fold, whereas the average value for low-income countries decreased by almost half. Poverty and starvation remain major issues despite the increased economic growth and material consumption of the second half of the 20th century, and the gap between rich and poor countries is widening. The distribution of wealth is becoming increasingly skewed internationally, and the gap between rich and poor in affluent countries is also growing.

Quoted from *Science on Sustainability 2006* summary report

Humanity's currently unsustainable situation

1) Global environmental issues

- Abnormal climate conditions (warming)
- Ecological destruction (reduced biodiversity)

2) Resource depletion

- Peak oil
- Rising prices of rare metals


3) Economic breakdown

- Massive financial speculation
- Breakdown of regional and local economies

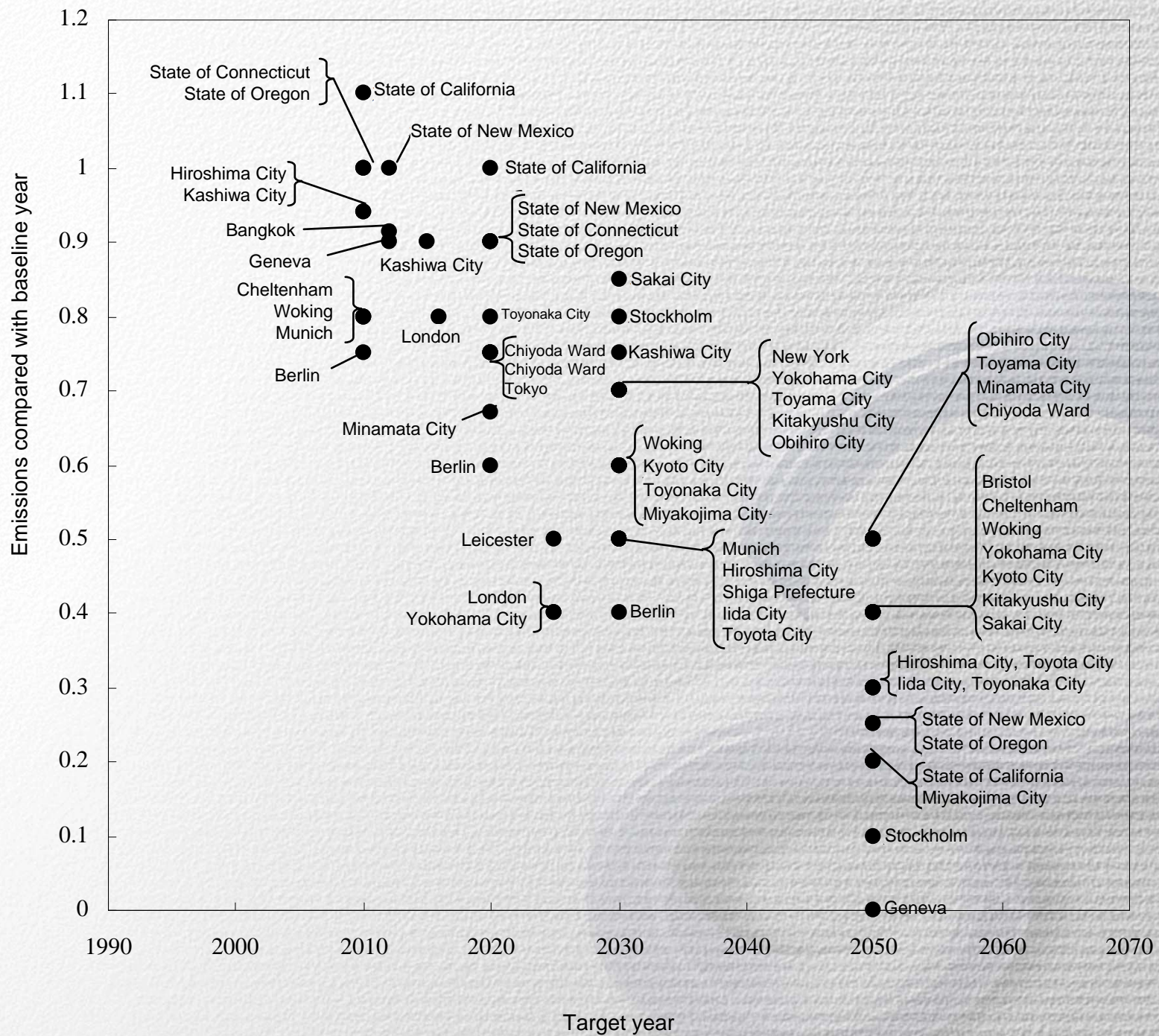
4) Social breakdown

- Growing socioeconomic disparities
 - Breakdown of traditions and local cultures
-

These all
interlinked.



II. Vision for a sustainable society



Toward a sustainable society

A: Technology oriented type



图: 国立環境研究所

- Dynamism
- Urban focus, emphasis on individuals
- Concentrated production, recycling
- Large-scale advanced technology
(fuel-cell vehicles, nuclear power, nuclear fusion, CO₂ sequestration)
- Aiming for a more convenient, comfortable society

B: Harmony-with-nature type



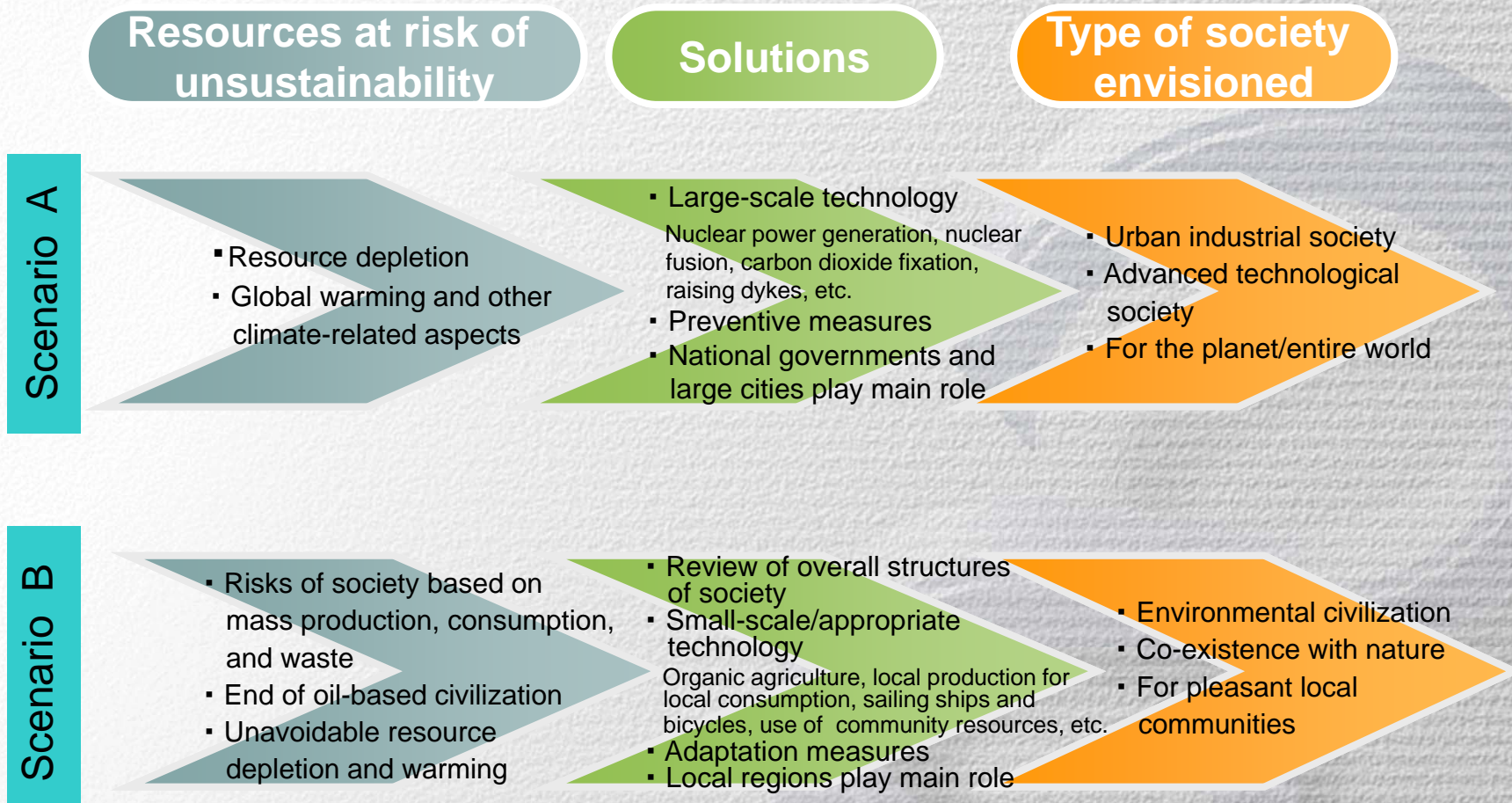
图: 今川朱美

- Relaxed
- Focus on distribution/autonomy, emphasis on community
- Appropriate manufacturing, waste-not-want-not
- Appropriate technology and lifestyles making significant use of natural production capacity
(small-scale wind power generation, bicycles, local production for local consumption, communal living)
- Respect for social/cultural values

Which of these types of society, A or B, should be prioritized?



We have to think on a global level ...






A Roadmap towards Low Carbon **Kyoto**



2009 Oct.
Research Team of
Sustainable Society Kyoto

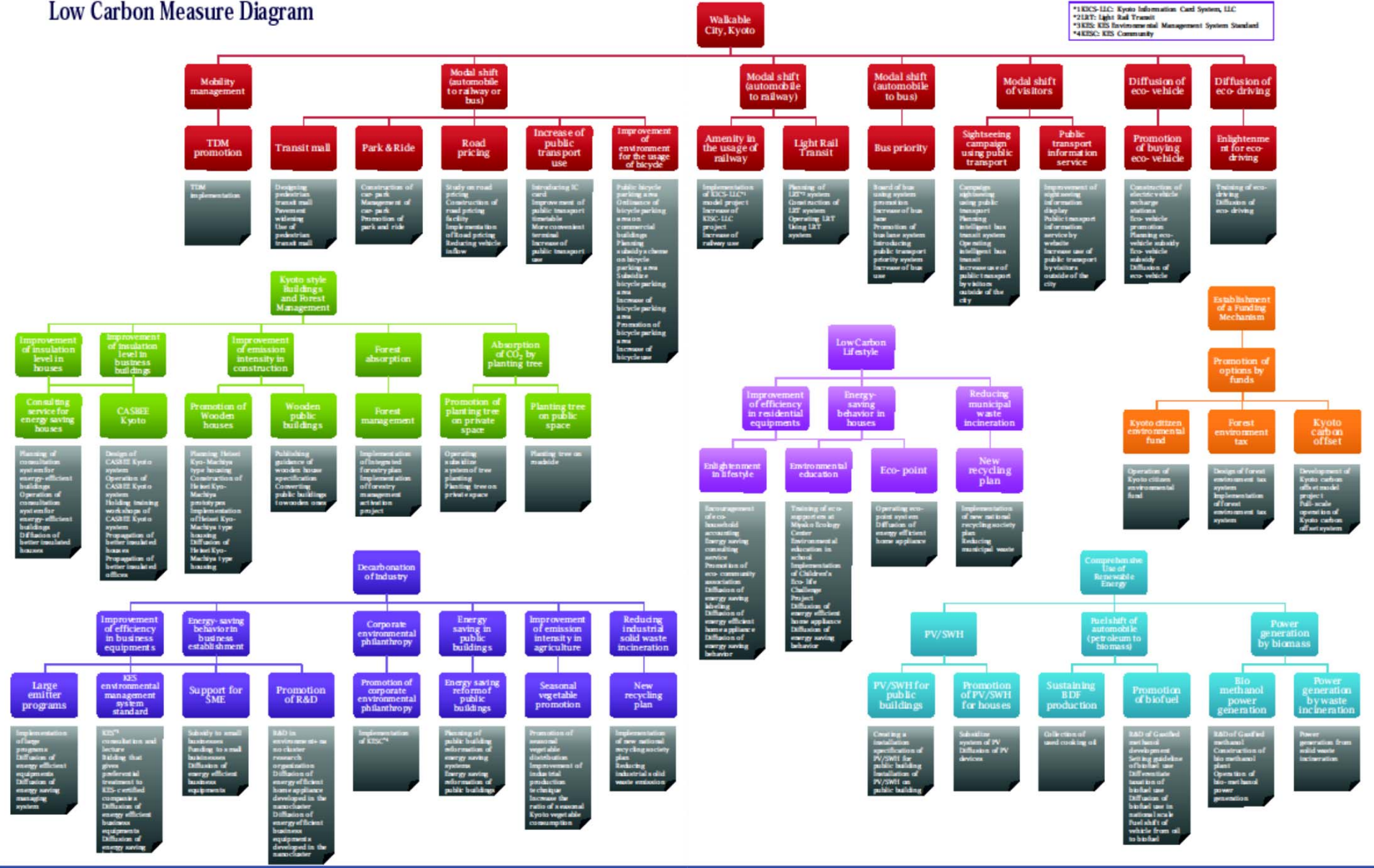


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Low Carbon Measure Diagram

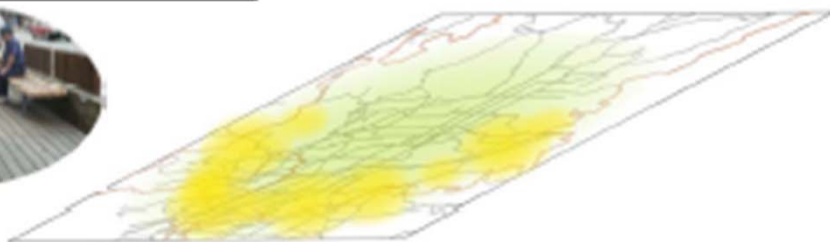
*KICS-LLC: Kyoto Information Card System, LLC
 *LRT: Light Rail Transit
 *KES: KES Environmental Management System Standard
 *KESCC: KES Community



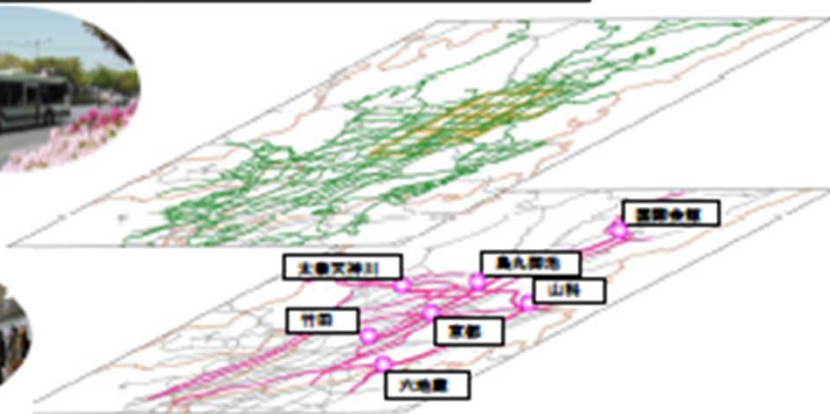
【「歩くまち・京都」総合交通戦略の取組の概念図】

「歩くまち・京都」の実現を目指し、関連する様々な取組と融合しながら、歩行者を最優先とする快適な道路空間の確保、自動車利用抑制策、バスの速達性と定時性の向上、歩く人々による賑わい創出、都市の装置としての新しい公共交通のあり方などを総合的に検討します。

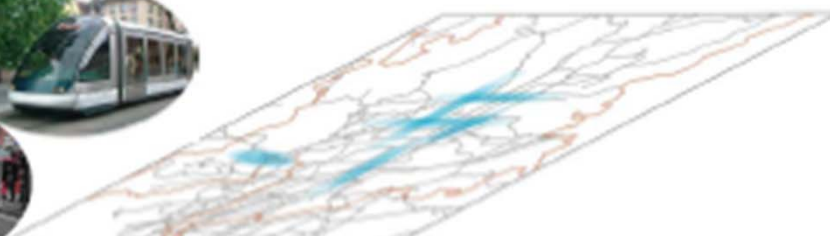
- パークアンドライドによる、自動車進入抑制
- 歩行空間の創出、駐車場廃業やカーシェアリングの実施



- バス路線の速達性・定時性の向上 (バス専用・優先レーンや公共交通優先システム導入)
- バス、鉄道の連携によるネットワークの充実
- 旅客混雑のバリアフリー化の推進など、鉄道駅周辺の機能強化



- 新しい公共交通のあり方を検討するエリア



Action 1 Walkable City, Kyoto

The "Walkable City, Kyoto" action is targeted to reduce CO₂ emissions in 2030 by 722 kt-CO₂. The measures that need to be implemented here promote an urban design that prioritizes pedestrians and public transport, in order to reduce CO₂ emissions in the transport sector. We estimate this measure will be completed by year 2020 because, Kyoto City has already actively been promoting this measure.

However, other measures such as road pricing and the introduction of light rail transit (LRT) involve long-term construction works or more significant changes to the transport structure and will take a longer time frame, therefore, all these measures will not be completed until 2028.

The objective of "Promotion of mobility management" is to promote the use of public transport by the general public. "Implementation of transport demand management (TDM)" is needed to bring about a voluntary change in the attitude of the general public. This measure will employ educational pamphlets and related maps to encourage the use of public transport, opinion surveys of transport behavior and so on.

"Construction of pedestrian transit malls" is a measure designed to bring about a shift from the use of privately owned automobiles to the use of public transport by the general public. The sidewalks along Shijo-dori in the city center will be widened to secure a comfortable pedestrian space and promote a modal shift on the part of the general public. The use of pedestrian transit malls by the general public will enable CO₂ emissions to be reduced by 32 kt-CO₂.

Since Kyoto city has a large numbers of tourists visiting, compared to other areas in Japan, it is important to encourage these tourists to use public transport as well. "Attraction of tourists using public transport" is the measure that will be employed to promote the use of public transport by tourists. Publicity campaigns will be held at major train stations in the Kinki and Chubu districts to invite tourists to come to Kyoto by public transportation. Moreover, the introduction of "smart" bus services that travel between tourist spots in the city will encourage tourists to use public transport to



travel within the city as well. These measures will reduce CO₂ emissions by 12 kt-CO₂.

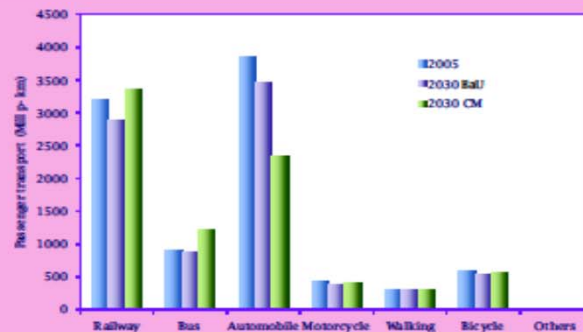
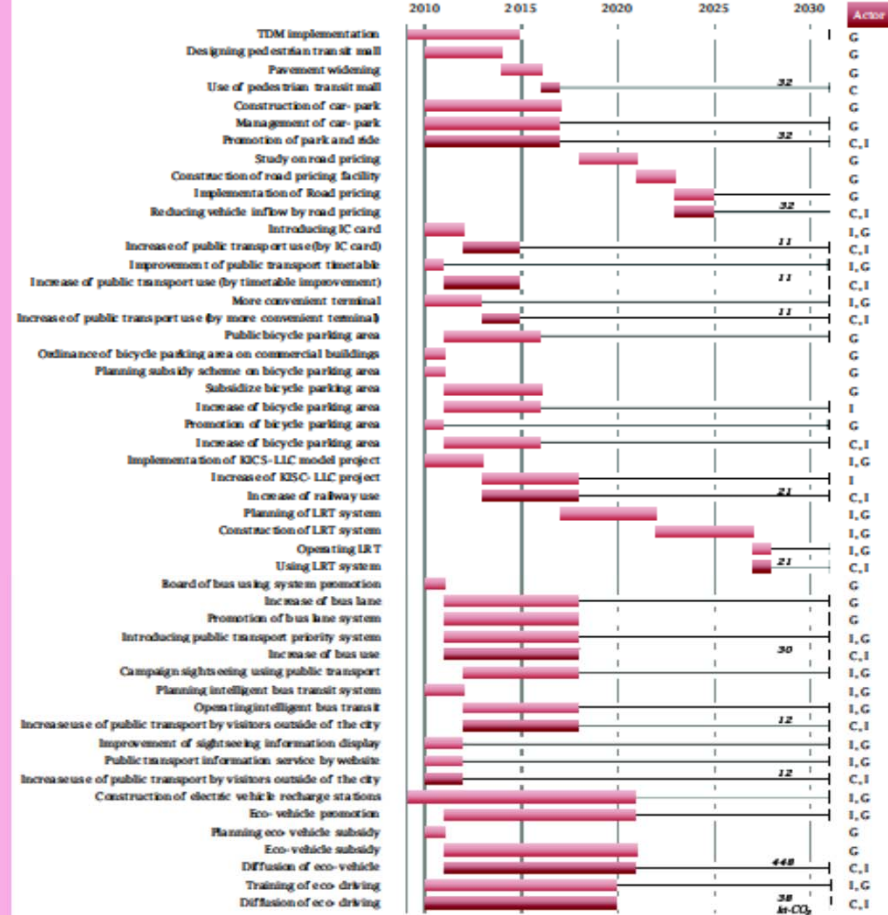
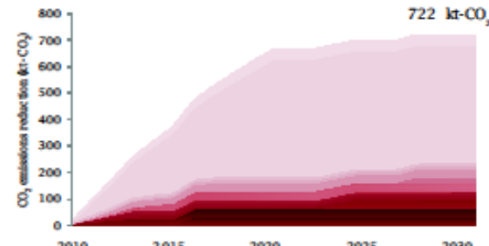


Figure 7 Passenger transport volume

In the "business as usual" case, the modal share for means of transport is the same in 2030 as it was in 2005. In the "counter measure" case, a modal shift has occurred from privately owned automobiles to other means of transport, with the result that the automobile share has decreased and the share of public transport, bicycle and pedestrian transit has increased.

In the "counter measure" case, the modal share for means of transport within the region that was occupied by automobiles has shifted 10% to trains, 20% to buses, 8% to pedestrian transit, and 7% to bicycles. Moreover, inter-regional transport within the city by automobile has shifted 10% to trains, 20% to buses, and 5% each to pedestrian transit and bicycles. Transport to places outside the region by automobile has shifted 30% to trains.

Walkable City, Kyoto



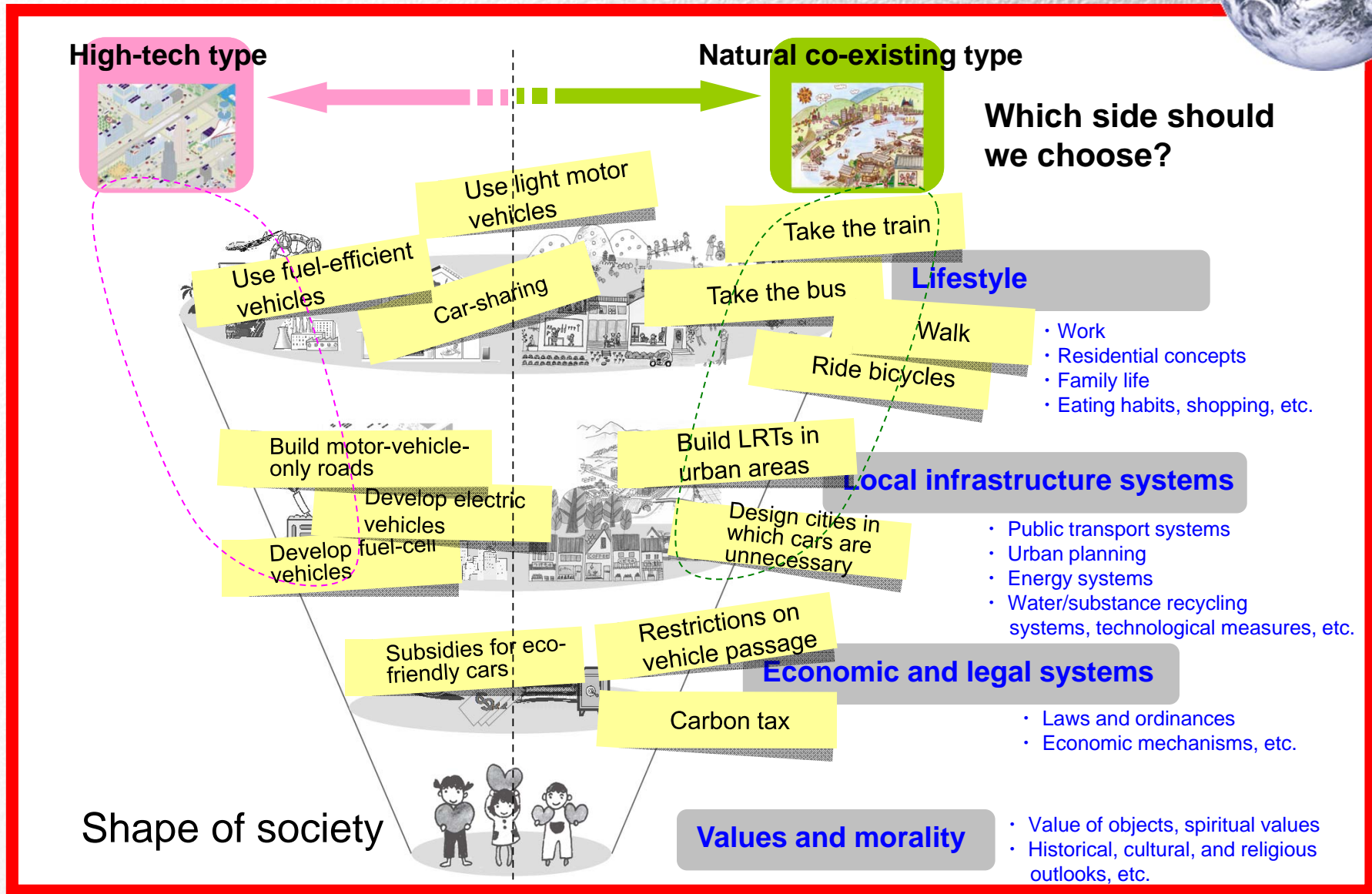
C: Citizen I: Industry G: Government O: Outside of the city

The road to a genuinely low-carbon society

	Improvement (-10%)	Conversion (-30%)	Revolution (-80%)
<p>1) Global environmental issues</p> <ul style="list-style-type: none"> Abnormal climate conditions Ecological destruction 	<p>Energy conservation/ solar power Conservation activities</p>		
<p>2) Resource depletion</p> <ul style="list-style-type: none"> Peak oil Depletion of scarce resources 	<p>Resource conservation Recycling</p>	<p>Eco-housing Eco-towns Modal shift</p>	<p>Walkable towns and cities Post-oil society</p>
<p>3) Economic breakdown</p> <ul style="list-style-type: none"> Financial speculation Regional economic decline 	<p>Tobin Tax Agricultural subsidies</p>	<p>Environment tax Green decentralization</p>	<p>From consuming things to enjoying value Renaissance of agriculture-based society Local currencies/funds</p>
<p>4) Social breakdown</p> <ul style="list-style-type: none"> Increasing social inequality Breakdown of local cultures 	<p>Community support Agricultural assistance support</p>	<p>Local production for local consumption</p>	<p>Local authority</p>

Imaging a sustainable Shiga Prefecture

The environment has limits (50% CO₂ reduction)





III. Toward achieving a sustainable society



That's right, the traditional Kyoto lifestyle has always been environmentally friendly.

そくか、
京都の暮らし方って、もともと
エコライフだったんだ。



Kyoto Shimbun 130th Anniversary Commemorative Special Issue

Learning Eco-Life from Kyoto

Miyako – the four seasons, lifestyle, and the Japanese spirit

京都新聞創刊130年記念特集

京に学ぶ
MIYAKO –四季・暮らし・和心–
エコライフ



Main suggestions from the conference (what Higashi-Omi City should look like)

❖ Around 200 suggestions were received

A town that's
convenient even
without using cars

Somewhere people
visit because they are
attracted by nature

Somewhere the
younger generation
will move into to live

Somewhere the
community supports
elderly people's lives

Primary + secondary +
tertiary = sixth industry

Somewhere that uses
as much renewable
energy as possible

Money circulating
within the area

Somewhere it's possible
to make a living by half
farming, half X
(something else)

Higashi-Omi
agricultural products
as a marketable brand

Beautiful *satoyama* and
satoumi (traditionally
cultivated landscapes and
lake waters) and abundant
ecosystems

Total working hours by type of industry (1000 hours)

	2000	2030
Agriculture, forestry, and fisheries	6,345	16,892
Mining	51	34
Food	1,942	2,546
Textile goods	4,875	2,738
Pulp, paper and wood products	1,505	3,587
Chemicals	496	291
Petroleum and coal products	53	33
Ceramic, stone and clay products	3,043	1,744
Metal materials	462	277
Fabricated metal products	5,406	3,089
General machinery	668	528
Electrical machinery	18,621	10,620
Transportation equipment	3,446	1,966
Precision machinery	112	81
Miscellaneous manufacturing industries	2,481	1,586
Construction	10,337	6,780
Electric power, gas and heat supply	227	200
Mains water and waste disposal	0	0
Commerce	489	909
Finance and insurance	11,824	12,740
Real estat	1,536	1,621
Transportation	664	770
Communications and broadcasting	4,384	4,722
Government	864	657
Education and research	2,869	2,804
Medical, insurance, social security, and long-term care	3,135	3,278
Business services	5,317	5,477
Personal services	3,981	4,331
Other	8,556	8,800

How are people working?



Self-sufficient

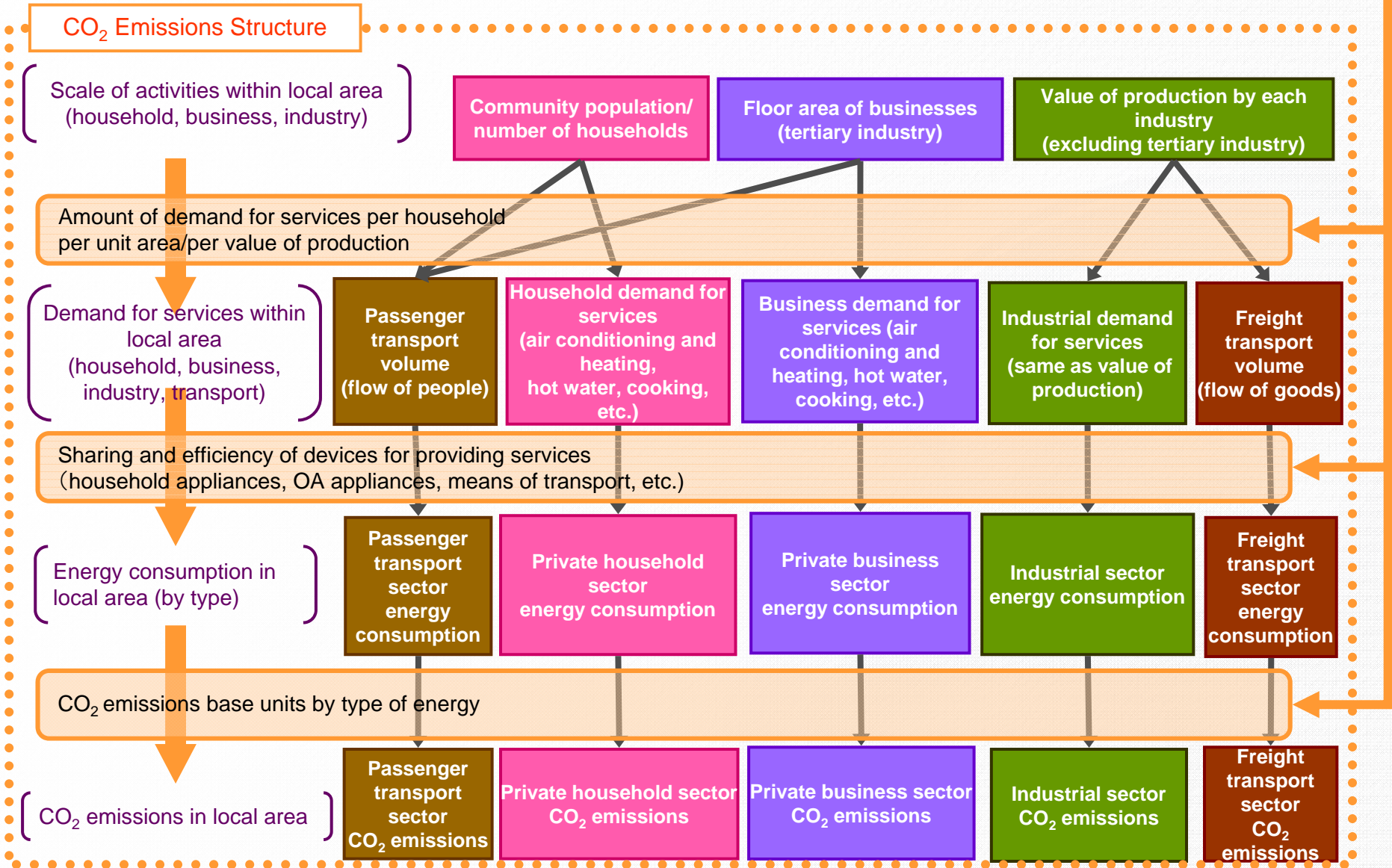
Sixth industry

Utilization of public transport

Revitalization by tourism

Model of local CO₂ emissions structure

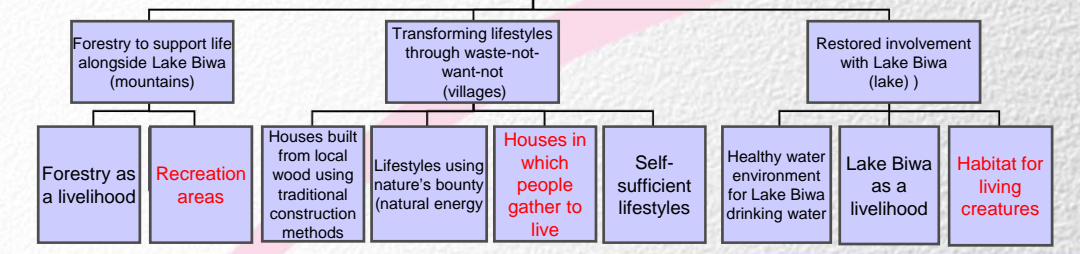
Establishment of countermeasures
 (Eg.) Take actions to save energy
 Change from personal cars to public transport
 Power generation from natural energy, etc.



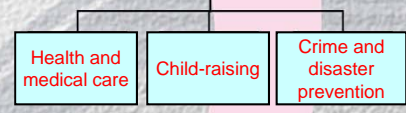
Be aware of happiness

- Relationships (life, other people, family, the next generation)
- Culture
- Local pride
- Co-existence with nature (nature in daily life)
- Leisure/relaxation
- Spirit over matter

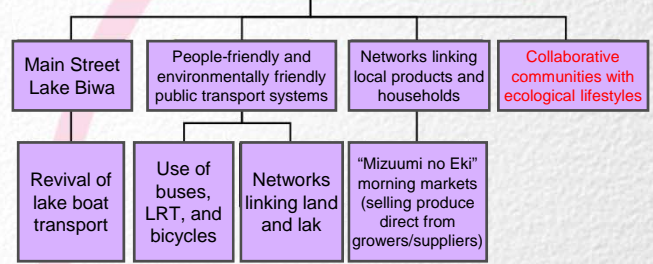
Lake Country Socio-Cultural Zone Living Alongside Lake Biwa



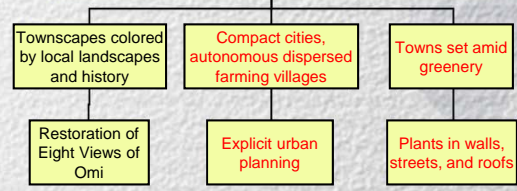
Welfare education Safety and peace of mind



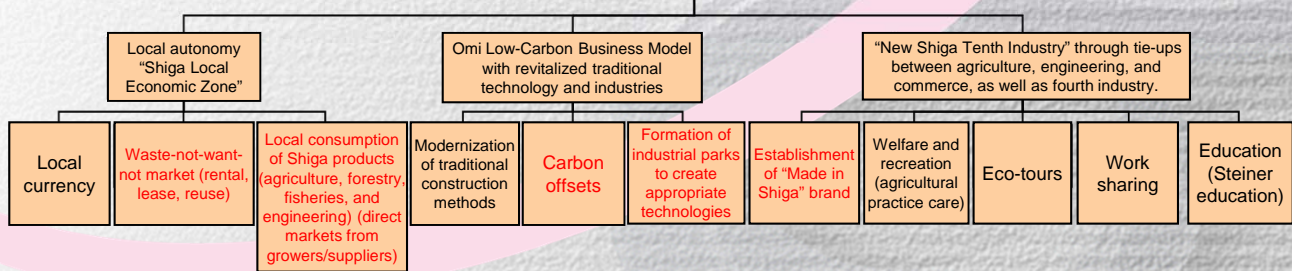
Transport and freight Linking people and goods



Towns/landscapes Living together with greenery



Local industry and employment Dynamic local communities



50% reduction in greenhouse gas emissions

■ KES

Establishment of KES (Environmental Management System Standard)



Environmental standards from Kyoto that are simple, easily understood, and capable of incorporation in a variety of forms by businesses, schools, inns, hotels, and other organizations.

- Certification launched in 2001
- Incorporated as an NPO in 2007
Independently established as KES Environmental Organization

Now taken up throughout Japan, with 2231 approvals nationwide (as of Jan. 2009)

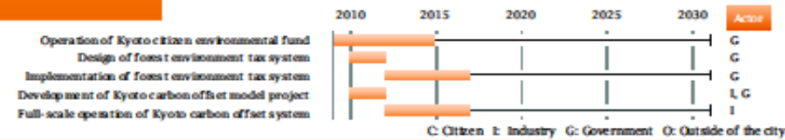
Action 6 Establishment of a Funding Mechanism

The purpose of the "Establishment of a Funding Mechanism" action is to develop a mechanism for obtaining the funds needed to implement low carbon measures. This action involves the establishment of a Kyoto Citizen's Environmental Fund in anticipation of the income from the forest environment tax and carbon offset projects. This is in line to create a mechanism to provide economic support for forest management and other efforts. It will create an economic system for promoting efforts by individual citizens and companies in the private sector to reduce green-

house gas emissions.

"Development of Kyoto carbon offset model project" is one of the policies that will utilize the Kyoto Citizen's Environmental Fund. Companies in the private sector will identify the emissions that are difficult to be reduce in their activities for the year and, they will be able to offset these by purchasing environmental credits obtained from the use of solar energy generation and the other energy efficient activities. The reductions in emissions resulting from these actions are interconnected with other actions.

Establishment of a Funding Mechanism



Many of the measures in this roadmap will be initiated in 2010, the first year of the plan. One reason for this is that implementation of these measures has already begun or has already been decided in the Kyoto City Plan of Action. However, implementation of measures from an early stage is significant in several ways.

In many cases, the low carbon measures are policies of another department. For example, introduction of a system that prioritizes public transport is not only a low carbon measure but also a transport policy. Effectiveness as a transport policy will be greater if the policy is implemented sooner rather than later. Improved energy efficiency will reduce costs and may provide an economic benefit. Measures that are effective in ways other than the reduction of greenhouse gas emissions should be achieved as soon as possible.

Quick implementation may cause the policy to become a symbol of the city. Implementing the policy before other cities will make it newsworthy and improve the stature of the city.

Medium to long term planning has many uncertainties. Implementing measures well in advance of the deadline is the foundation of project management.

If enormous funds are poured into this effort, it may be possible to achieve the reduction targets in a shorter time period

in advance from the target number of years. However, as noted above, implementing measures from an early date is good for several reasons. This Roadmap illustrates that most of the policies will be completed by 2025. However, this by no means signifies that it would be all right to postpone the implementation period.

Moreover, the funds which are needed to implement policies must be provided by the government, general public and companies in the private sector. However, this study has considered only the funding burden that is most likely to be borne by the (Kyoto Municipal) government.



Local growth through the promotion of “Green Decentralization Reform”

