Seminar on Japan's Environmental Center Approach to Social Capacity Development for Environmental Management in People's Republic of China
February 24, 2004 at Sino-Japan Friendship Centre for Environmental Protection

Environmental Center Approach

Social Capacity Development for Environmental Management in Developing Countries and Japan's Environmental Cooperation

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Objectives of the Seminar

- To present the evaluation results on China's social capacity for environmental management and Japan's environmental cooperation, the Environmental Center approach
- To discuss future prospects of China-Japan cooperation for further social capacity development in China
- To discuss the possibility of East Asian environmental management regime

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1. Introduction

1-1. Recent Trends of International Cooperation

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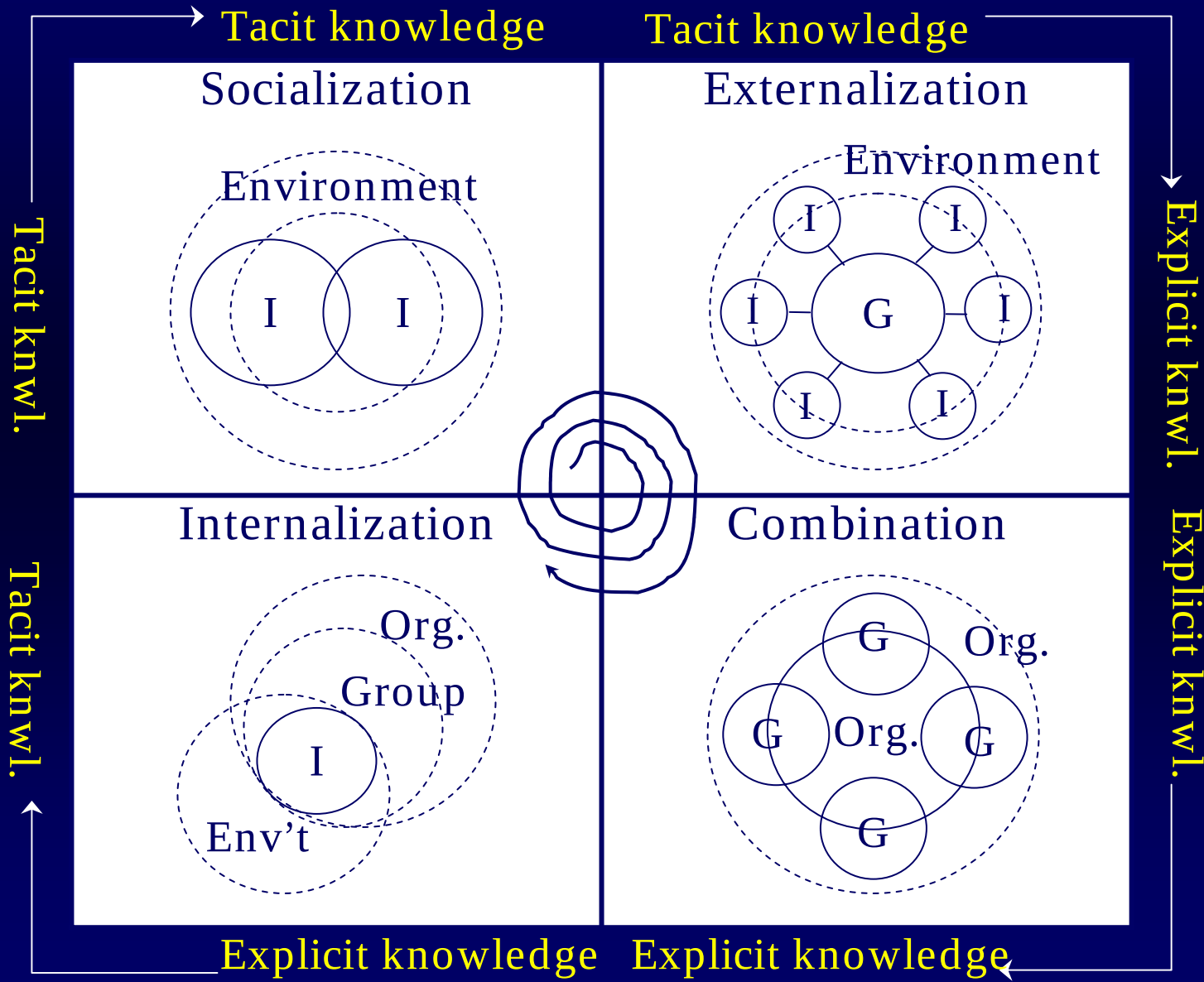
1-1. Recent Trends of International Cooperation

Critiques for Technical Cooperation

- Capacity development at social level, in addition to individual and institutional level
- Respect for ownership based on participatory decision making process
- Focus on transforming tacit knowledge to externalized activities through knowledge networks / communities. Fukuda-Parr. et al. (2002)

SECI model (Nonaka & Konno 2003)

I: Individual
G: Group



Critiques for Technical Cooperation

- Long-term capacity building with outcome-oriented assessment
- Shift from experts-counterparts relationship to utilizing human resources of developing countries
- Introduction of market theory
- Decision-making and initiative by developing countries
- Management transfer from donor to developing countries
- Reformation of incentive structure of public sector

JICA (2003)

JICA's Technical Cooperation

- Individual capacity building through enhancing motivation
- Improvement of public functions to meet the needs of the beneficiaries
- Expansion of project impact through strengthening relations between institutions at the policy-making and field level
- Capacity Development of Stakeholders and development of mutual trust between government and the beneficiary

JICA (2003)

1-2. Japan Society for International Development (JASID)

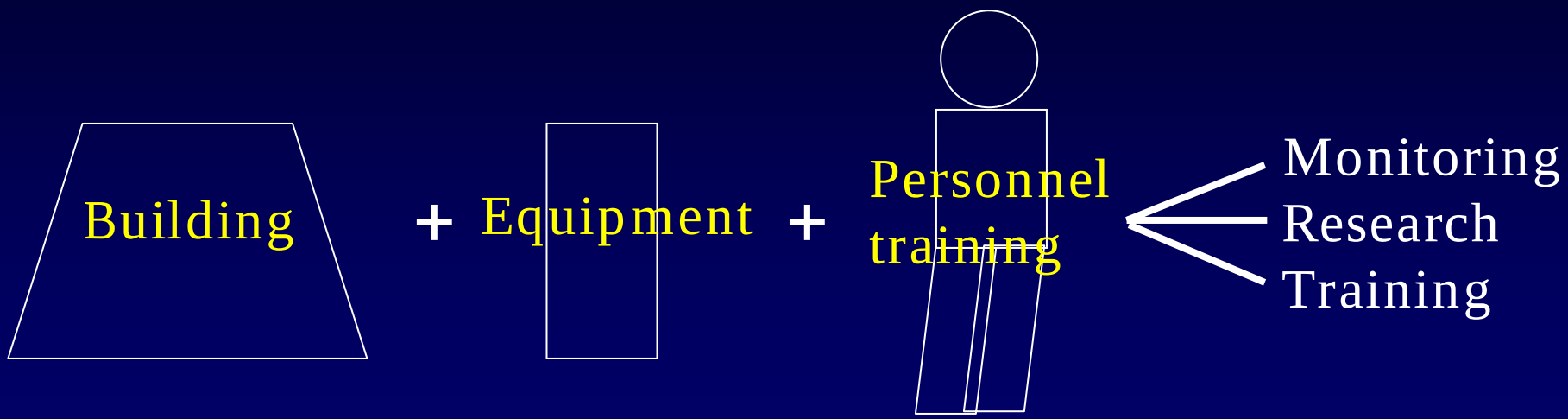
Japan Society for International Development (JASID)

- A leading academic society in the field of international development in Japan since 1990
- 1,400 members from universities, government agencies, private companies in and outside of Japan
- Interdisciplinary studies and practices
- Bridging research and policy

1-3. Environmental Center Approach

What is Environmental Center Approach?

"Environmental Center approach", defined in Japan's ODA White Paper 1997, is a generic term for Environmental Center projects and aims to support capacity development in environmental sectors of the governments in developing countries.



Environmental Centers (1)

	Sino-Japan Friendship Center for Environmental Protection, China	National Environmental Research and Training Center, Mexico
Project	Sep. 1992 – present	July. 1995 – May 2002
Project purposes	Monitoring and analysis, research, training	Pollution abatement technology and environmental management
Env'l issues	All major issues	Air pollution, hazardous waste
Input (yen)	Grant aid: 10.5 billion Equipment: 0.2 billion	Grant aid: none Equipment: 0.5 billion
Local agency	NEPA / SEPA	SEMARNAP / SEMARNAT

Environmental Centers (2)

	Environmental Management Center, Indonesia	Environmental Research and Training Center, Thailand
Project	Jan. 1993 – present	Jan. 1990 – Mar. 1997
Project purposes	Environmental research, monitoring, information system and training	Environmental research, training and monitoring
Env'l issues	Water pollution, air pollution, hazardous waste	Water pollution, air pollution, noise & vibration, solid waste, hazardous waste
Input (yen)	Grant aid: 2.7 billion Equipment: 0.4 billion	Grant aid: 2.3 billion Equipment: 0.2 billion
Local agency	BAPEDAL / MOE	DEQP, MOSTE

Environmental Centers (3)

	National Center for Environment, Chile	Environmental Monitoring Training, Egypt
Project	June 1995 – May 2002	Sep. 1997 – Aug. 2002
Project purposes	Environmental research, monitoring, information system and training	Monitoring network
Env'l issues	Water pollution, air pollution, solid waste	Water pollution, air pollution, Industrial waste
Input (yen)	Grant aid: 1.3 billion Equipment: 0.5 billion	Grant aid: 0.9 billion Equipment: 0.2 billion
Local agency	CONAMA (National Environmental Committee), Chile University	Environmental Agency

1-4. Evaluation Objectives

Why Evaluate?
– Evaluation Objectives -

JASID undertook this evaluation research under the contract with JICA in order to

- answer the simple question “Have Environmental Center projects contributed to developing countries in solving environmental problems in these 15 years?”
- suggest further public & private partnerships between China and Japan to support social capacity development for environmental management (SCEM)

1-5. Social Capacity for Environmental Management and Social Environmental Management System

What is SCEM & SEMS?

Social Capacity for Environmental Management (SCEM)

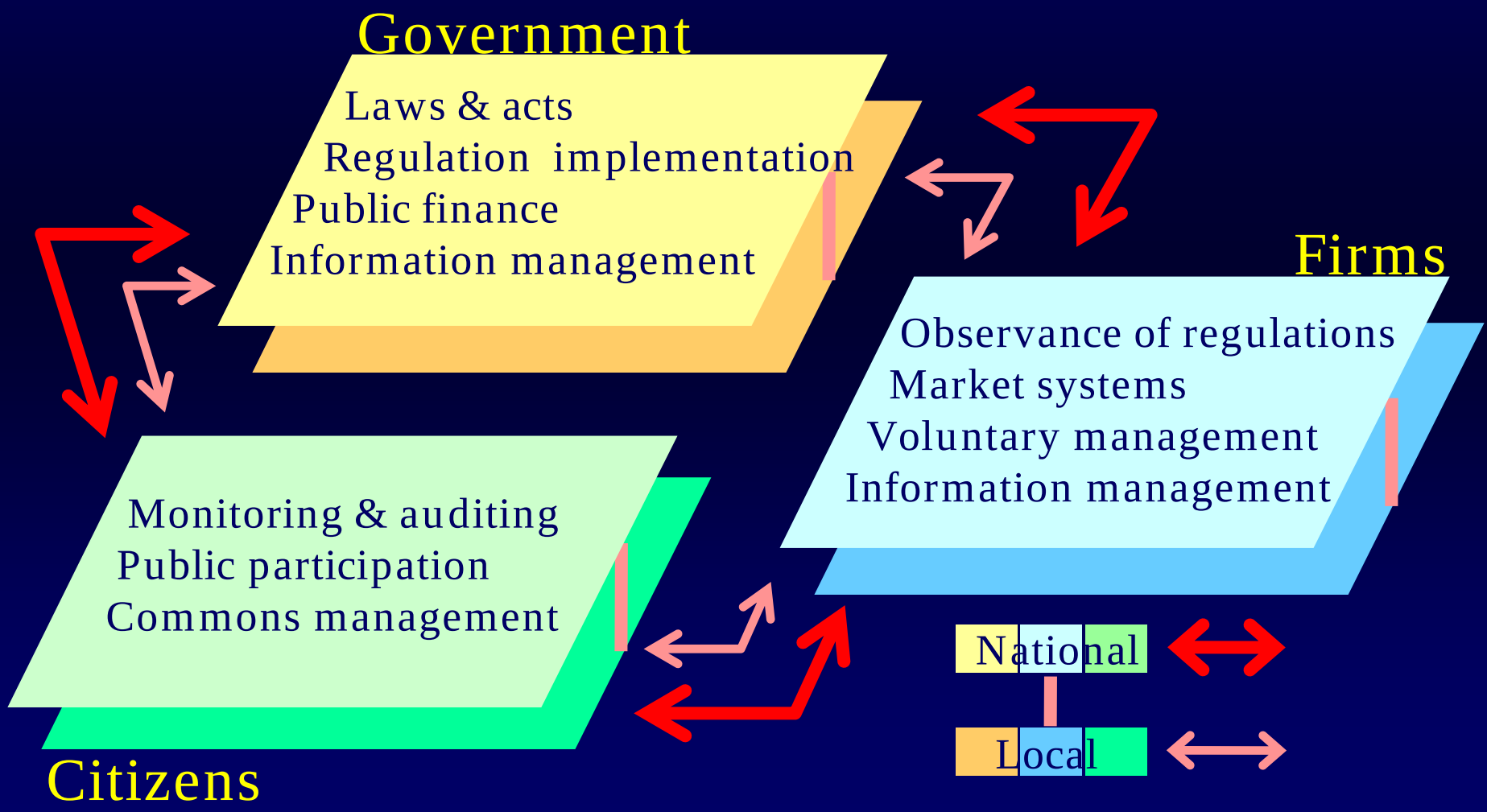
Overall capacity to deal with environmental problems through social actors' individual and interactive efforts.

= Capacity that enables Social Environmental Management System (SEMS) to function.

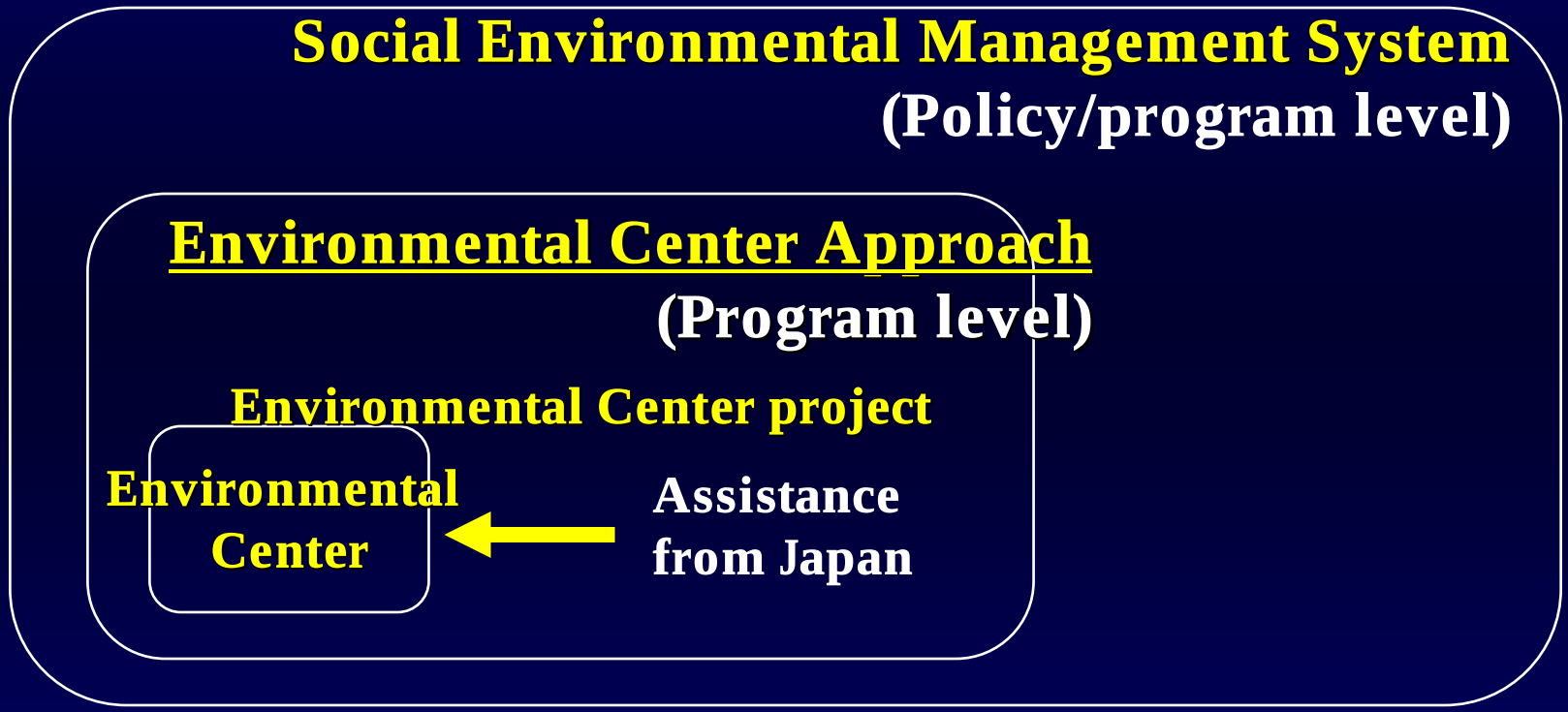
Social Environmental Management System (SEMS)

Social system which consists of the three major actors, the government, firms and citizens and their interactions to manage environmental problems.

Social Environmental Management System (SEMS)



Redefining Environmental Center Approach



Program evaluation of Environmental Center projects is Evaluation of Environmental Center approach.

2. Evaluation Tools

2-1. SCEM Concept

2-2. SCEM Benchmarks & Indicators

2-3. SCEM and Institutional Change

2-4. SEMS Development Stages and Entry / exit Points of Environmental Cooperation

Evaluation Viewpoints

- SCEM Analysis

How has China's SCEM developed?

- Entry / exit Points of Environmental Cooperation

Was the Sino-Japan Friendship Center project implemented at an appropriate period?

- Project Design at Program Level

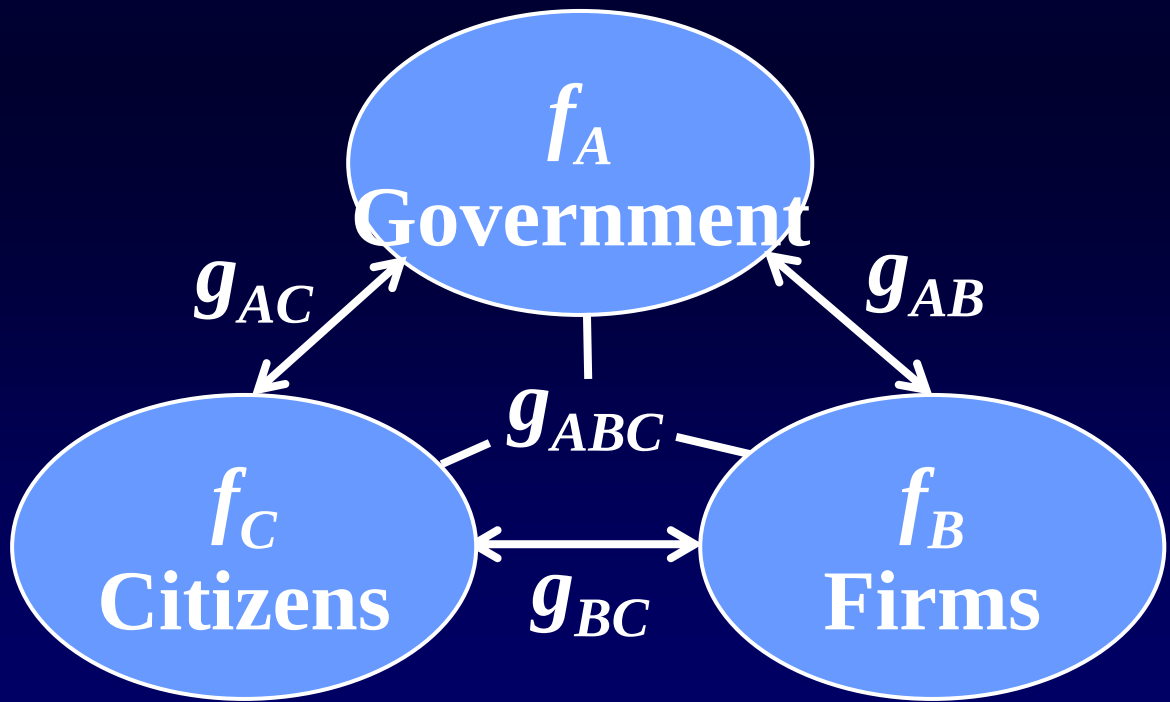
Was the project designed well enough to contribute to development of China's SCEM?

2-1 SCEM Concept

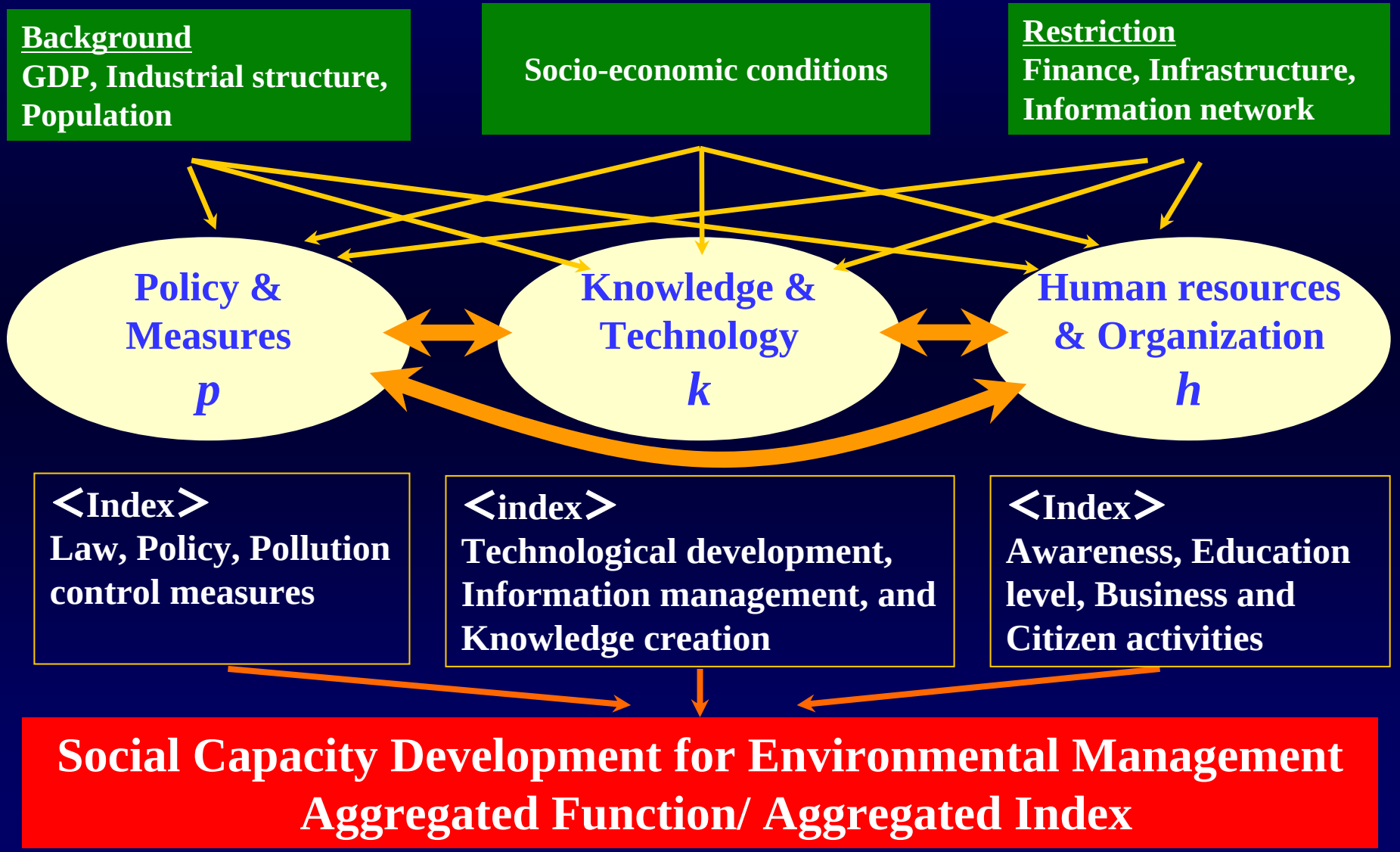
SCEM: Actor Approach

Social Capacity for Environmental Management (SCEM)

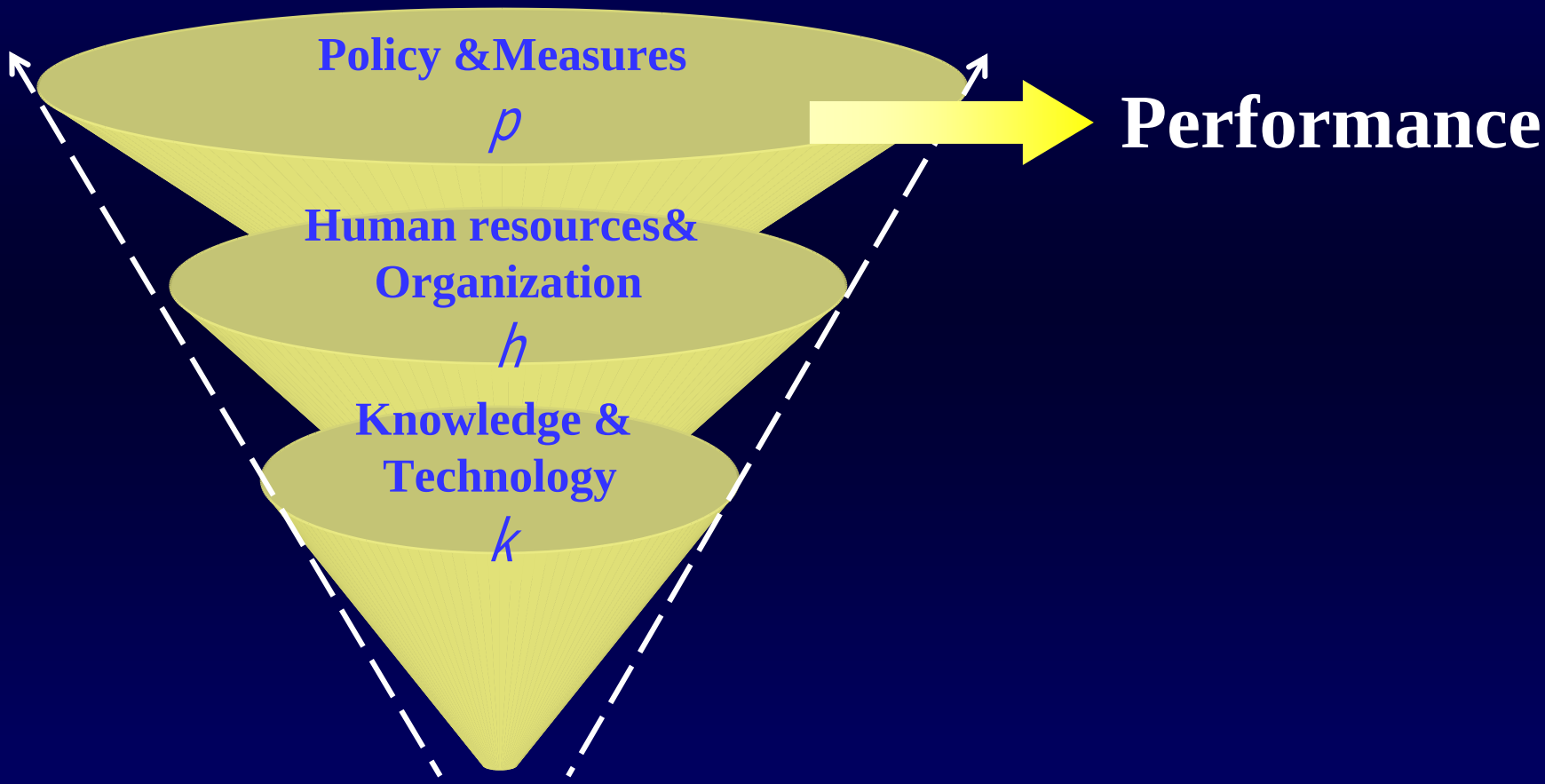
$= F\,(f_A, f_B, f_C, g_{AB}, g_{BC}, g_{AC}, g_{ABC})$



SCEM :Factor Approach



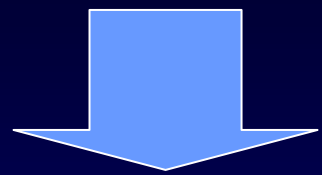
Relationships Among Factors



2-2 SCEM Benchmarks & Indicators

SCEM
Benchmarks & Indicators

SCEM Benchmarks & Indicators
-Based on development theory
-Core of policy indicators



Application

Policy (Performance) Benchmarks & Indicators

SCEM Indicators

Government

Process	Factors	Indicators
Monitoring | Analysis and evaluation | Policy-making | Policy implementation	(1) Law and policies	Basic environmental law, pollution control acts
	(2) Human resources	Staff (number and quality)
	(3) Organization	Status of Ministry of Environment, organizational performance
	(4) Financial resources	Budget
	(5) Infrastructure	Technological and information infrastructure
	(6) Information, knowledge, and technology	Monitoring, data analysis, policy-making, administration

Information disclosure
Open system for public Environmental education
Policy priority

Access to information
Pollution claims
Media
Demonstration
Lawsuits
Negotiations & lobbying
Policy proposal

National/local relations
Decentralization
(Budget, decision-making, implementation)
Initiatives for environmental management

Background indicators
<Economy> GDP per capita, GDP growth rate, industrial structure
<Society> population, population growth rate,
<Environment> ambient level, energy shift

Regulation implementation
Subsidies
Environmental tax
Polity priority

Regulation observation
R & D
Negotiation and lobbying
Lawsuits

Citizens

P	F	Indicators
M | A & E | P-M | P-I	(1)	Environmental disciplines, *commons* rules
	(2)	Education
	(3)	Academics, NGOs, media, organizational performance
	(4)	Budget
	(5)	Technological and information infrastructure
	(6)	Monitoring, data analysis, policy-analysis

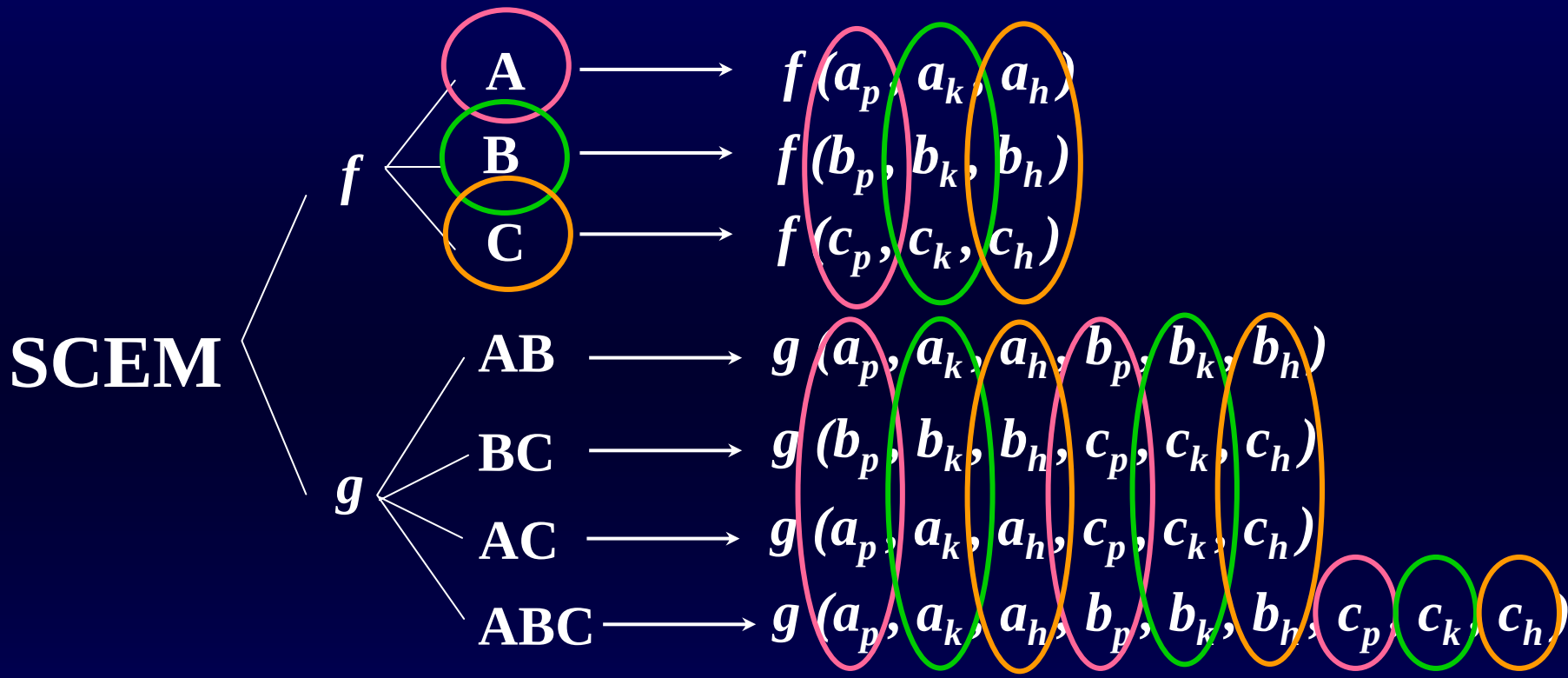
Access to information
Pollution claims
Lawsuits
Media
Green consumption
Research

Information disclosure
Eco-label
R & D

Firms

P	F	Indicators
M | A & E | P-M | P-I	(1)	Environmental disciplines, Charter of a business council
	(2)	Education, training
	(3)	Self-monitoring, reporting, env'l division, organizational performance
	(4)	Investment
	(5)	Technological and information infrastructure
	(6)	Monitoring, data analysis, business strategies

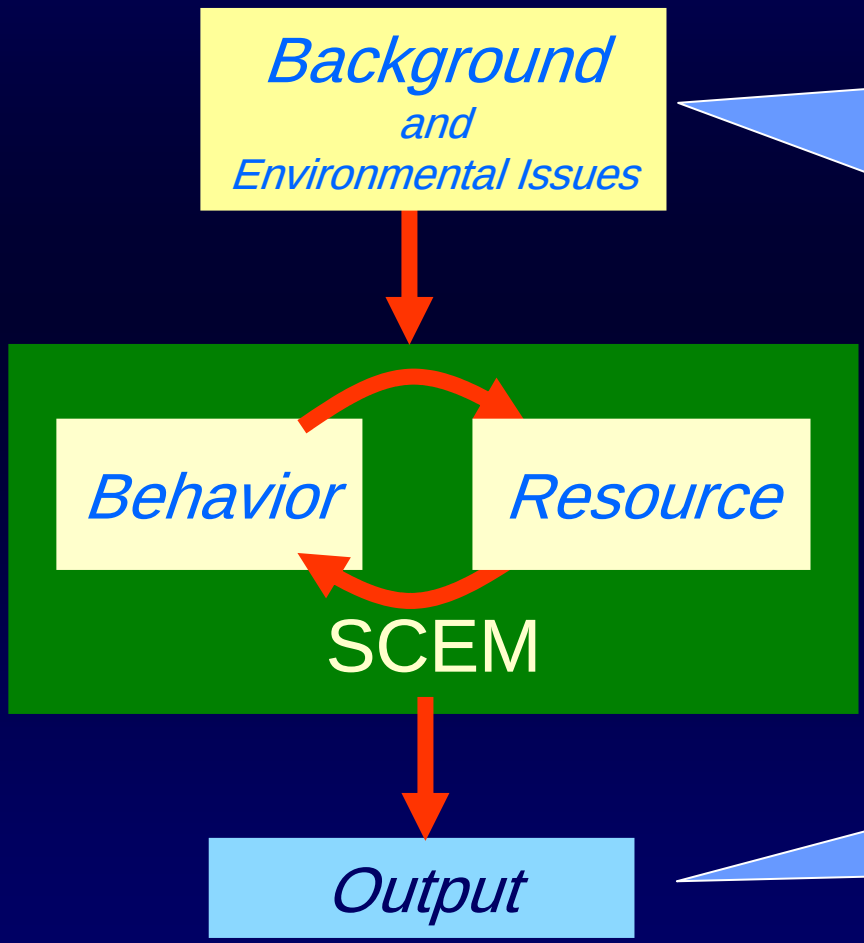
Approach to Develop the SCEM Index: Aggregated Function



Actor A :Government, B：Firms, C：Citizens

Factor *p* : Policy/Measure, *k* : Knowledge/Technology, *h* : Human resources/Organization

SCEM Structure in Policy Process <Hypothesis>



Socio-economic conditions
GDP, education, life expectancy (HDI)
Environmental conditions
Health damage, industrialization
External/Internal Pressure
Crisis

SCEM	Behavior	Resource	
		Know.	Hum., Org.
Govt			
Firms			
Citizens			

Environmental performance
Emission, concentration
Other outputs

2-3 SCEM and Institutional Change

Institutions
- Definition of Keywords -

- **Institutions:** the rules of the game in a society; the humanly devised constraints that shape human interaction.
- **Organizations:** the players of the game; provide a structure to human interaction.
- **Formal Institutions:** rules that human beings devise:political rules, economic rules, and contracts.
- **Informal Institutions:** come from socially transmitted information and are part of the heritage that we call culture: codes of conduct, norms of behavior, and conventions. Will not change immediately in reaction to changes in the formal rules.

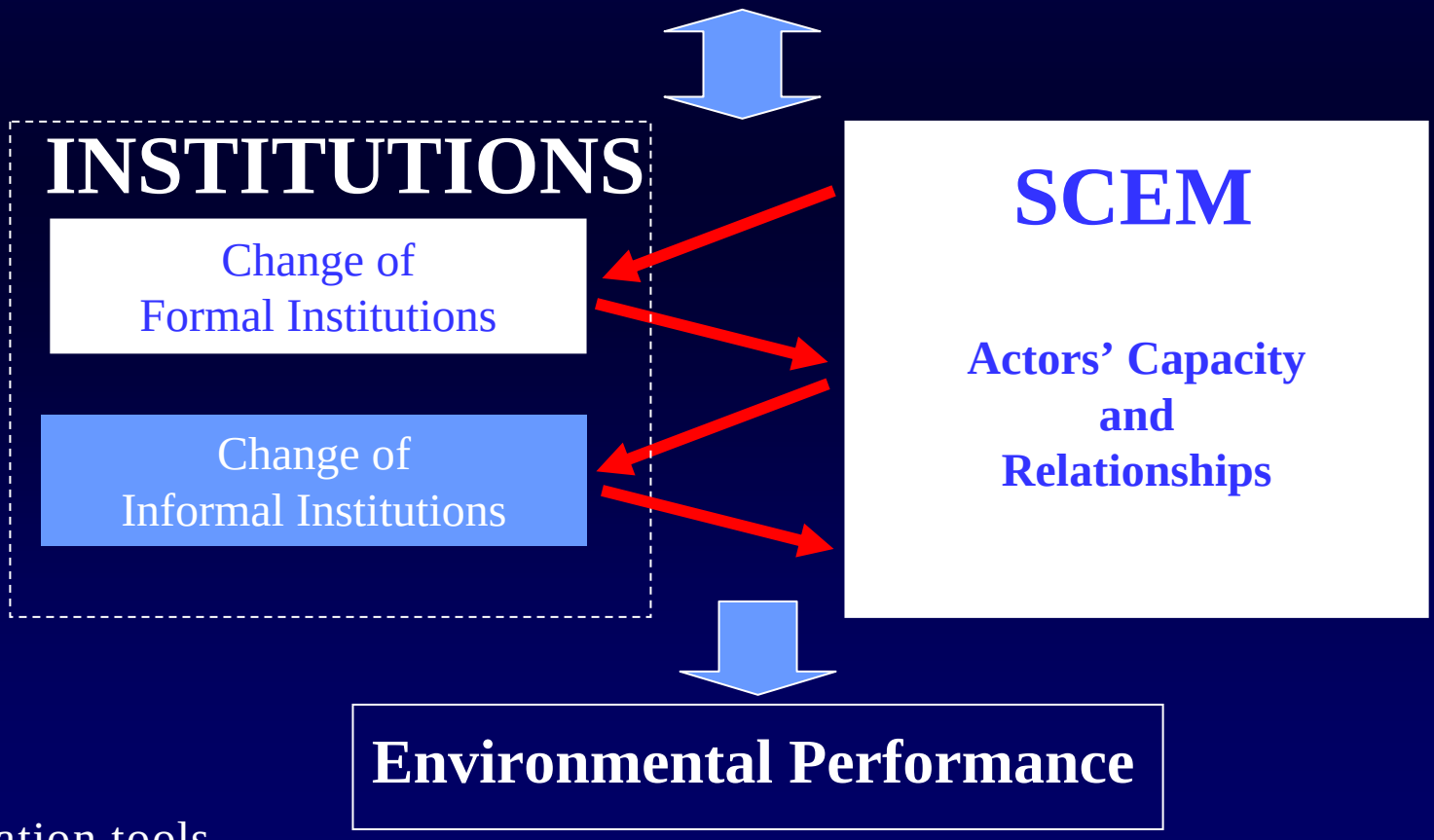
(North 1990)

SCEM and Institutions

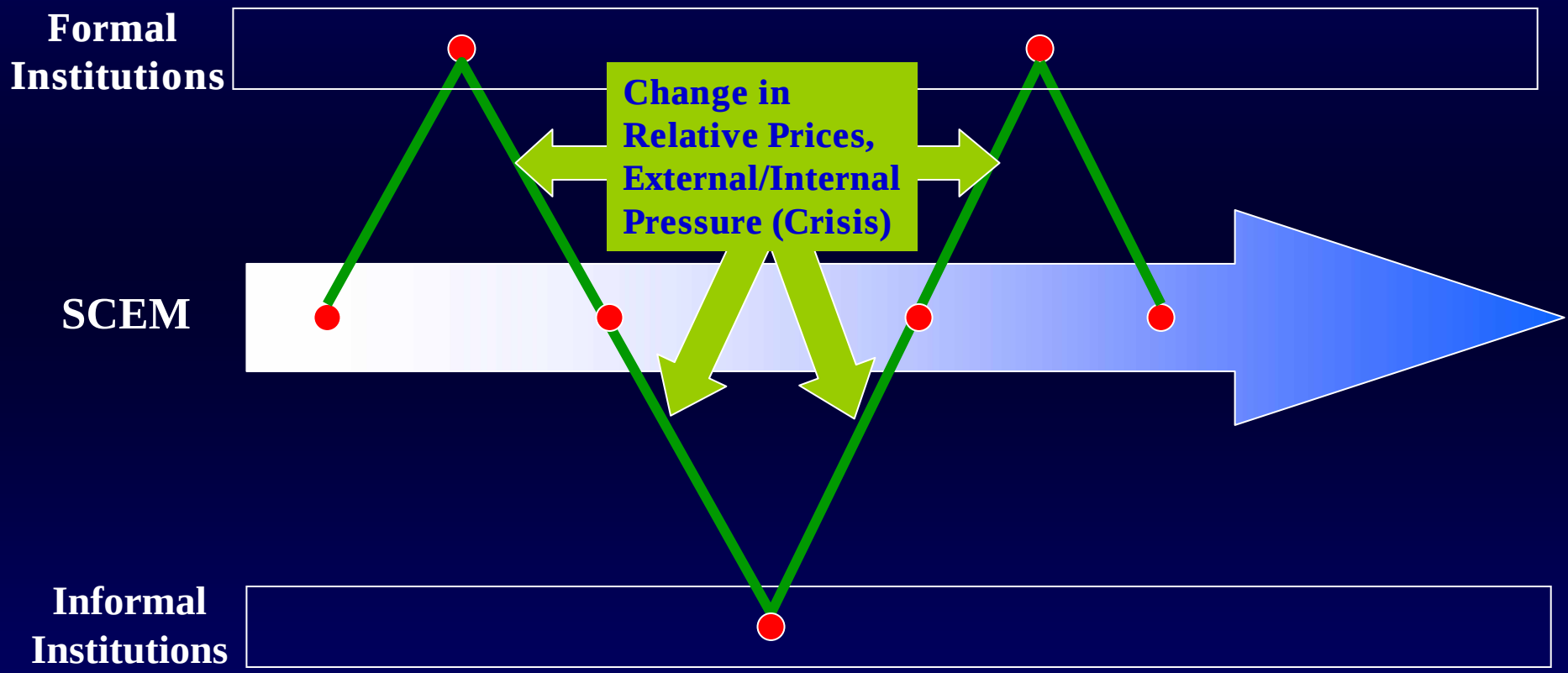
- External Pressure
- Internal Pressure (Crisis)

Socio-economic Condition
- history/ culture
- relative prices (information & transaction costs, technology & factor prices, tastes)

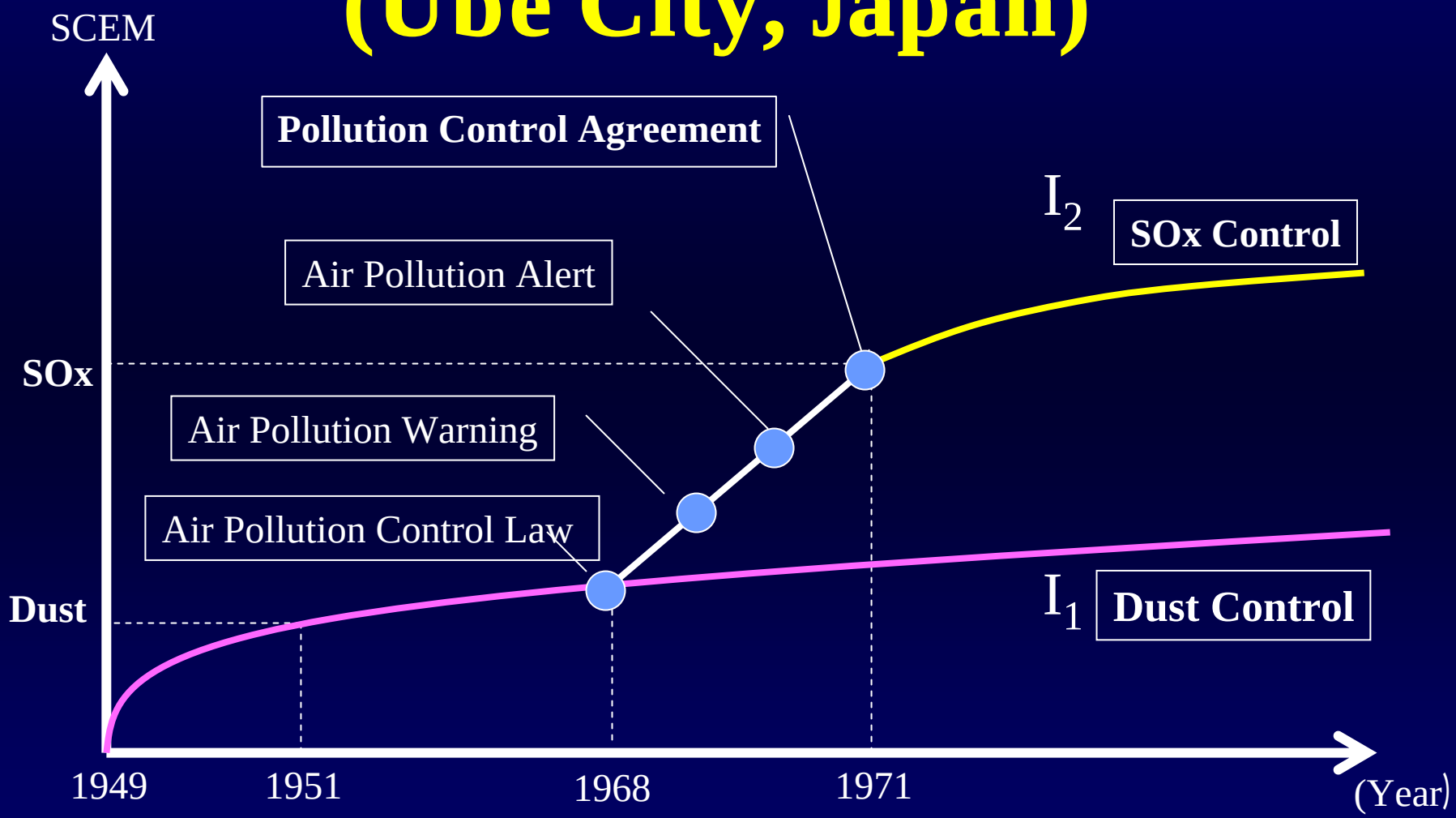
Environmental Characteristics



SCEM and Institutional change



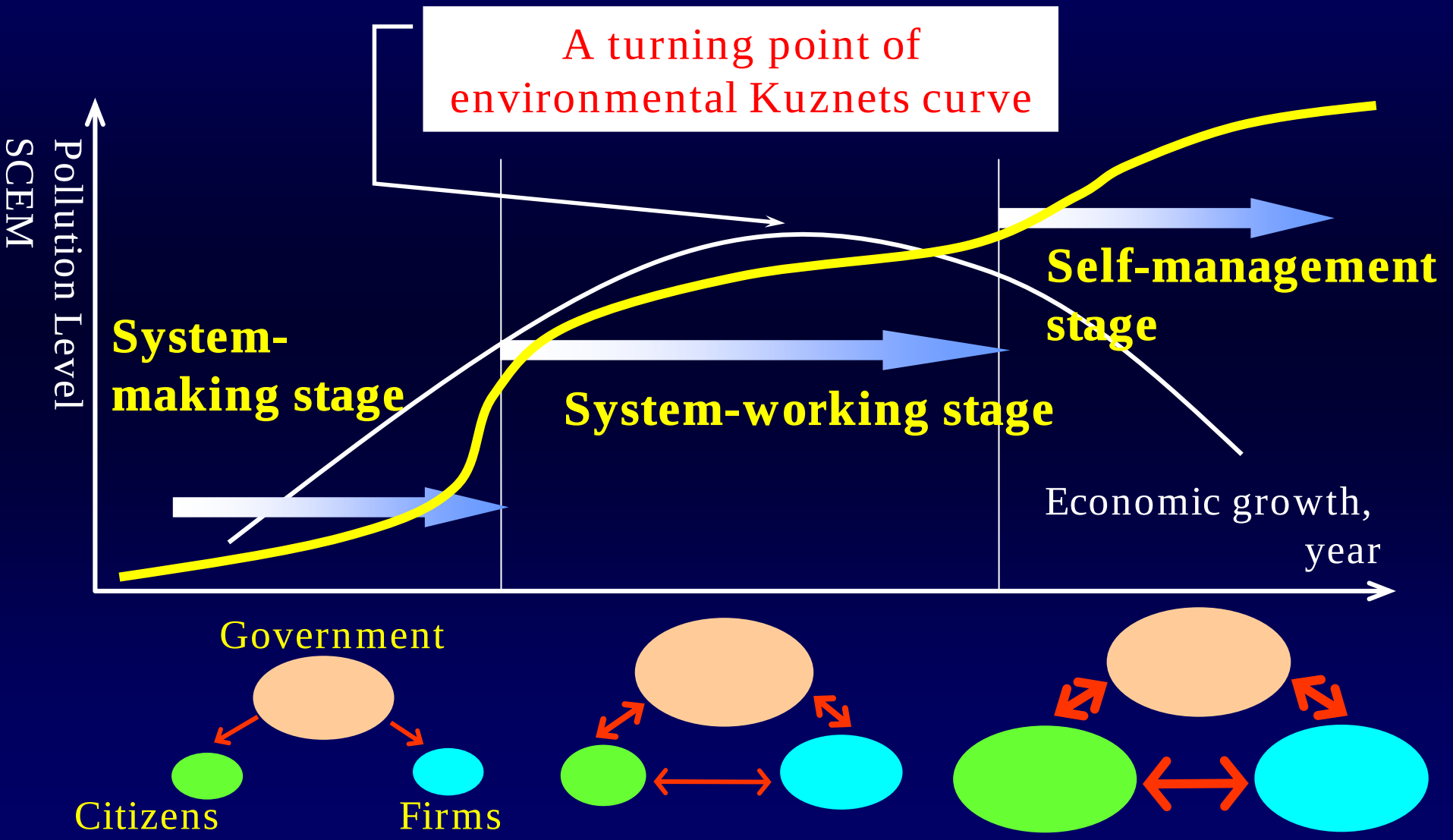
SCEM & Institutions (Ube City, Japan)



2-4 SEMS Development Stages

Entry/exit Points of Environmental Cooperation

SEMS Development Stages



System-making Stage

Stage in which basic capacity of SCEM, especially governmental institutions are developed.

Major environmental issues	Poverty-related issues, industrial pollution
Industrial pollution	Degraded
Three actors	Predominantly government
Relations among the three	Government –> Firms Government –> Citizens
Benchmarks (essential)	Environmental law Environmental agency Environmental information

System-working Stage

Stage in which relations between the government and firm sectors become stronger by setting the incentives for pollution abatement. Industrial pollution improves after reaching its peak in the middle of the period.

Major env'l issues	Industrial pollution
Industrial pollution	Turning point
Three actors	Government and firms
Relations among the three	Government – Firms Government – Citizens
Benchmarks (essential)	Regulation A turning point of EKC

Self-management Stage

Stage in which comprehensive environmental policies are set up through harmonious relations among the three actors for effective social environmental management.

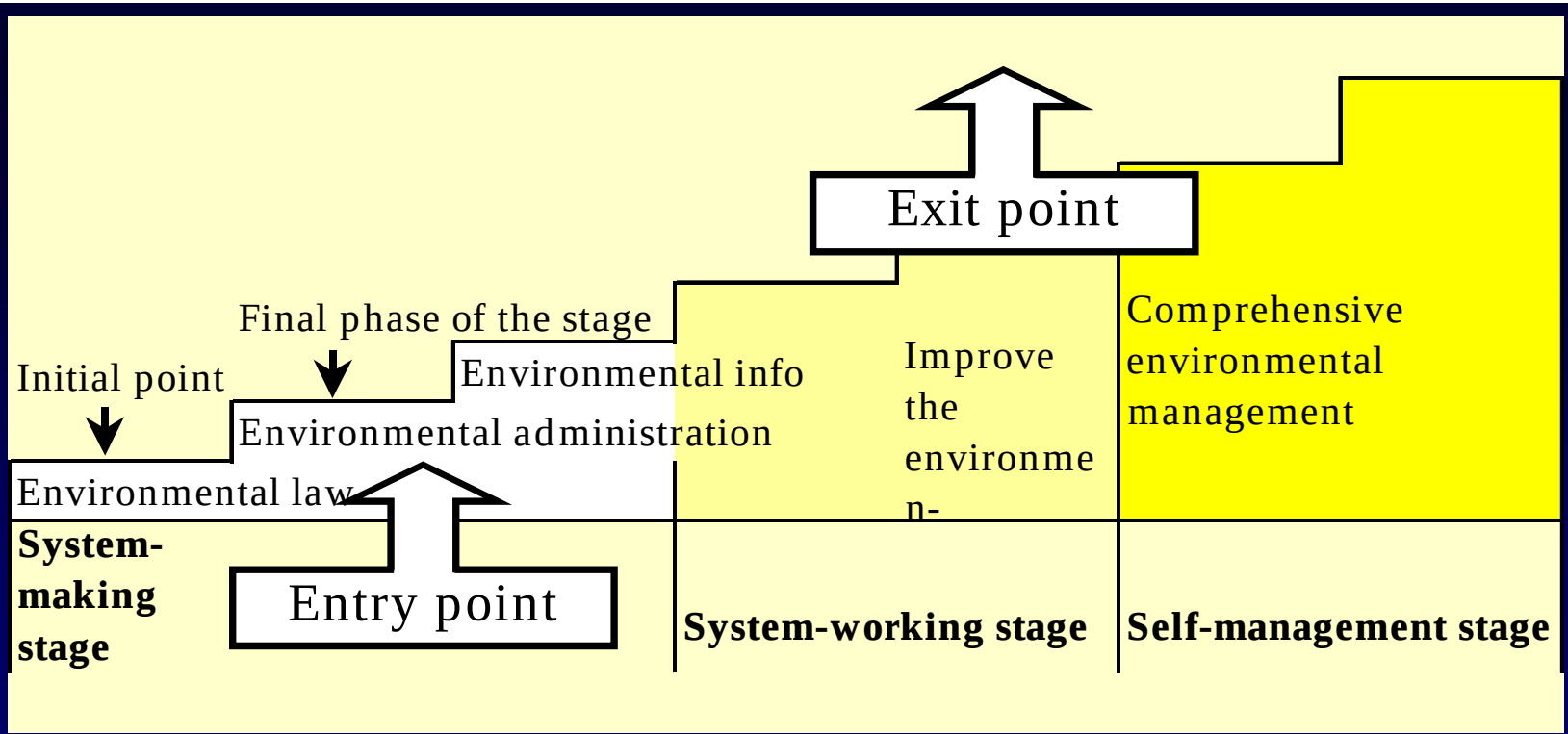
Major env'l issues	Consumption-related issues
Industrial pollution	Improved
Three actors	Government, firms and citizens
Relations among the three	Government – Firms – Citizens (interactive)
Benchmarks (essential)	Graduation from ODA Comprehensive environmental management

SCEM Evaluation Box

	Government	Firms	Citizens
<1> Individual capacity	Environmental law Environmental agency Monitoring & the State of Environment Regulations Comprehensive environmental management	Emission monitoring Pollution abatement investment Research and development Pollution abatement Voluntary approach	Environmental awareness, environmental NGOs Mass media Survey and research
<2> Interactive relations	→ Coordination dialogue → Incentives for pollution abatement → Enhancement of environmental business	← Regulation observance ← Strict voluntary standard ← Policy proposal	
<3> Interactive relations	→ Coorination dialogue → Information disclosure → Environmental education		← Lawsuits, claims, demostrations ← Survey and research ← Policy research and proposal
<4> Interactive relations		→ Pollution date disclosure → Information disclosure on environmental management → Voluntary approach	← Lawsuits, claims, demostrations ← Green consumption ← Survey and research
<5> National / local relations	Decentralization in laws, authority and budget Industrial areas and rural areas		
<6> Multi-interactive relations	Dialoging *"Ba(opportunities)"* Research and business interactions Personnel interactions		

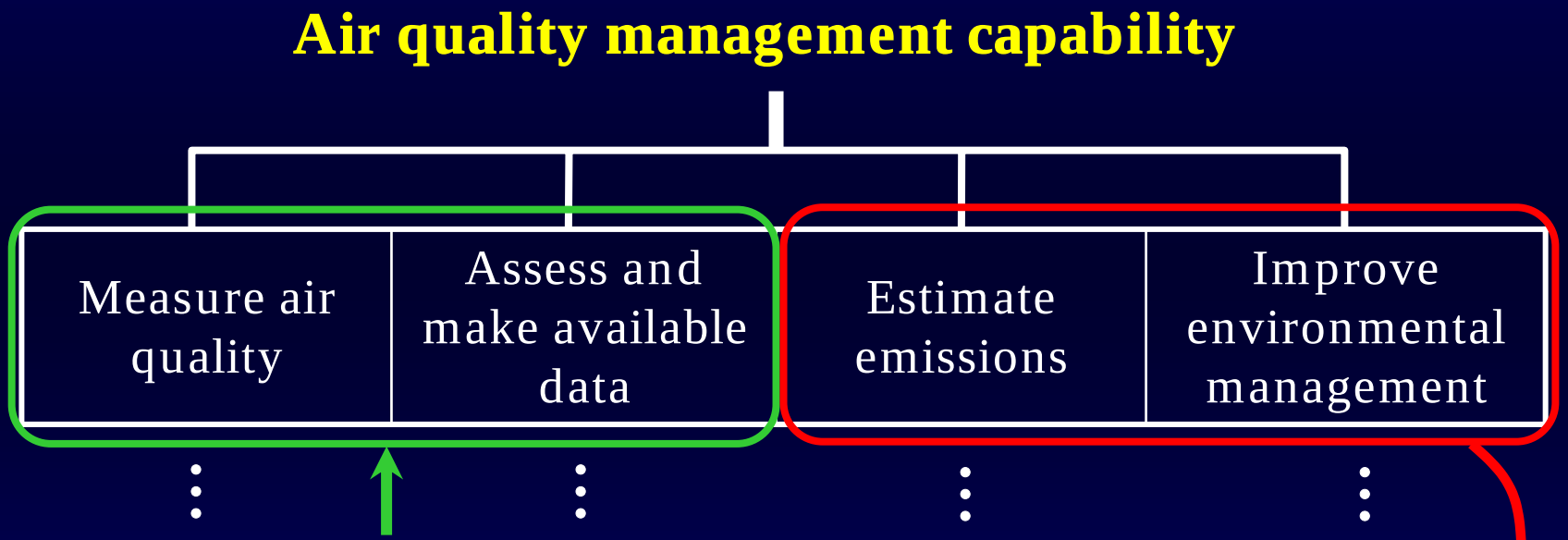
Entry/exit Points of Environmental Center Projects

To give impacts on SCEM most effectively and efficiently, Environmental Center project should start in the final phase of the system-making stage and be finished in the middle of the system-working stage.



Scope of Function

Function indices in Global Environmental Monitoring System (UNEP & WHO)



Main functions of existing Environmental Centers

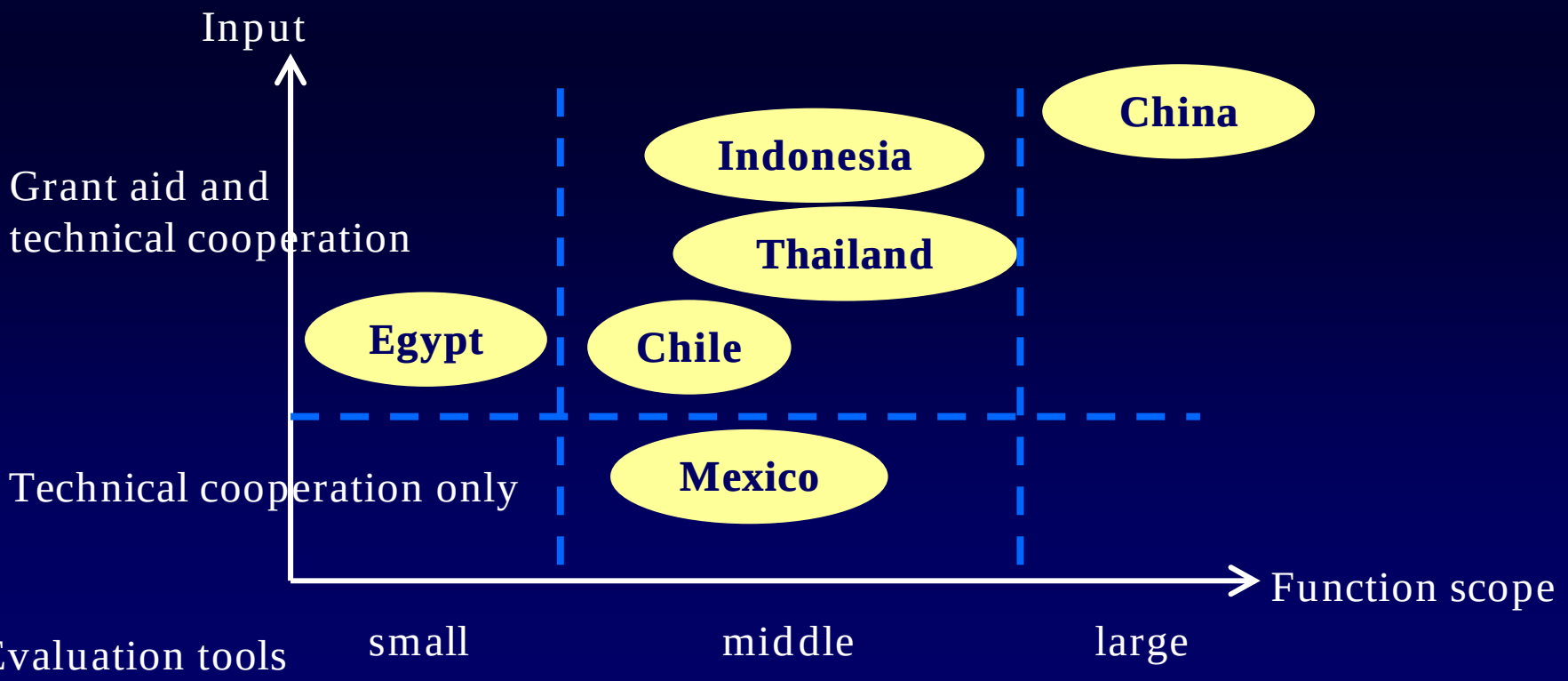
+ Contribution to environmental policies

+ Contribution to enhance SCEM

= Environmental Center approach

Project Design
: Scope of Function and Input

Environmental Centers need to be given a broad scope of function and placed in an appropriate position in environmental administration to contribute to the development of SCEM.



3. Evaluation Results

3-1 Development of China's SEMS

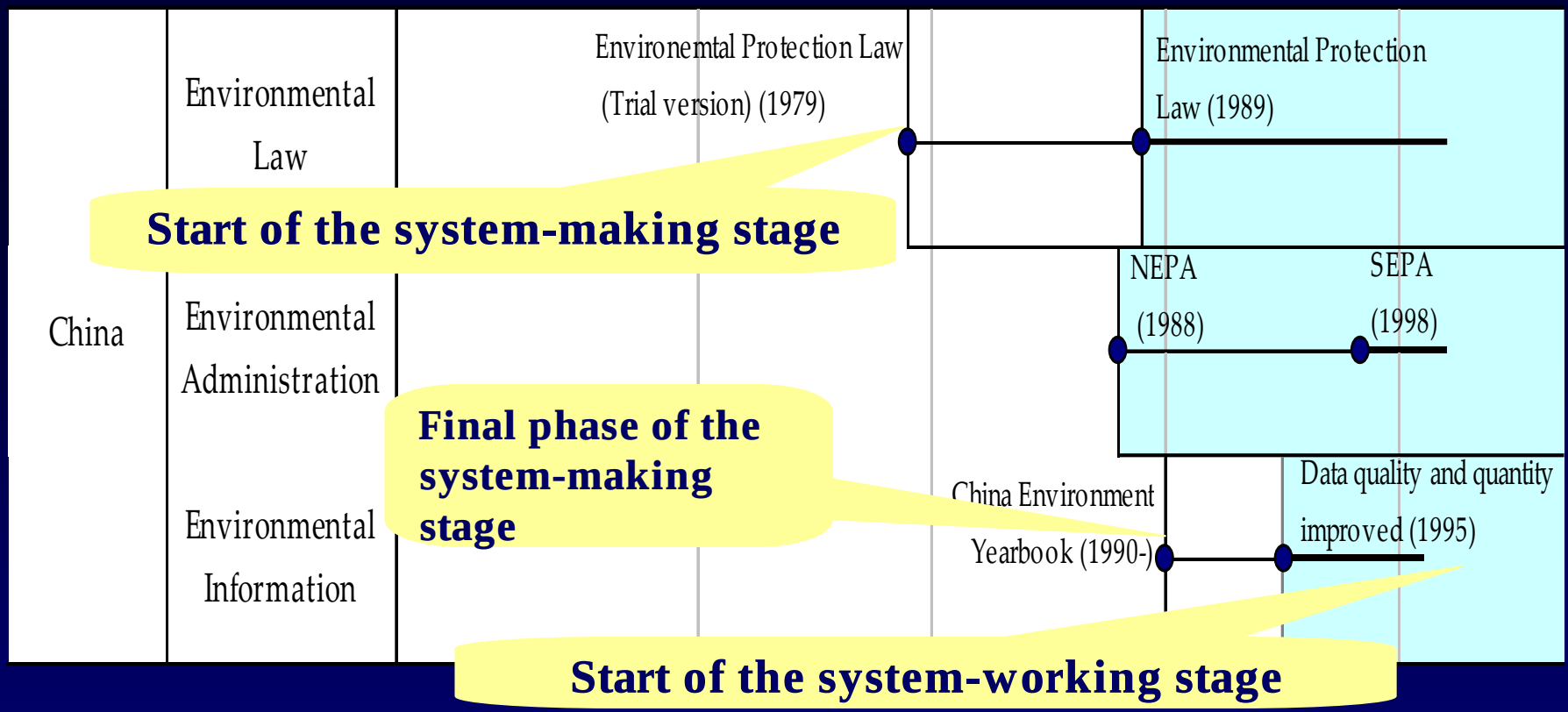
3-2 Environmental Center Approach in China – Entry / exit points -

3-3 Impacts on SCEM Development

3-1 Development of China's SEMS

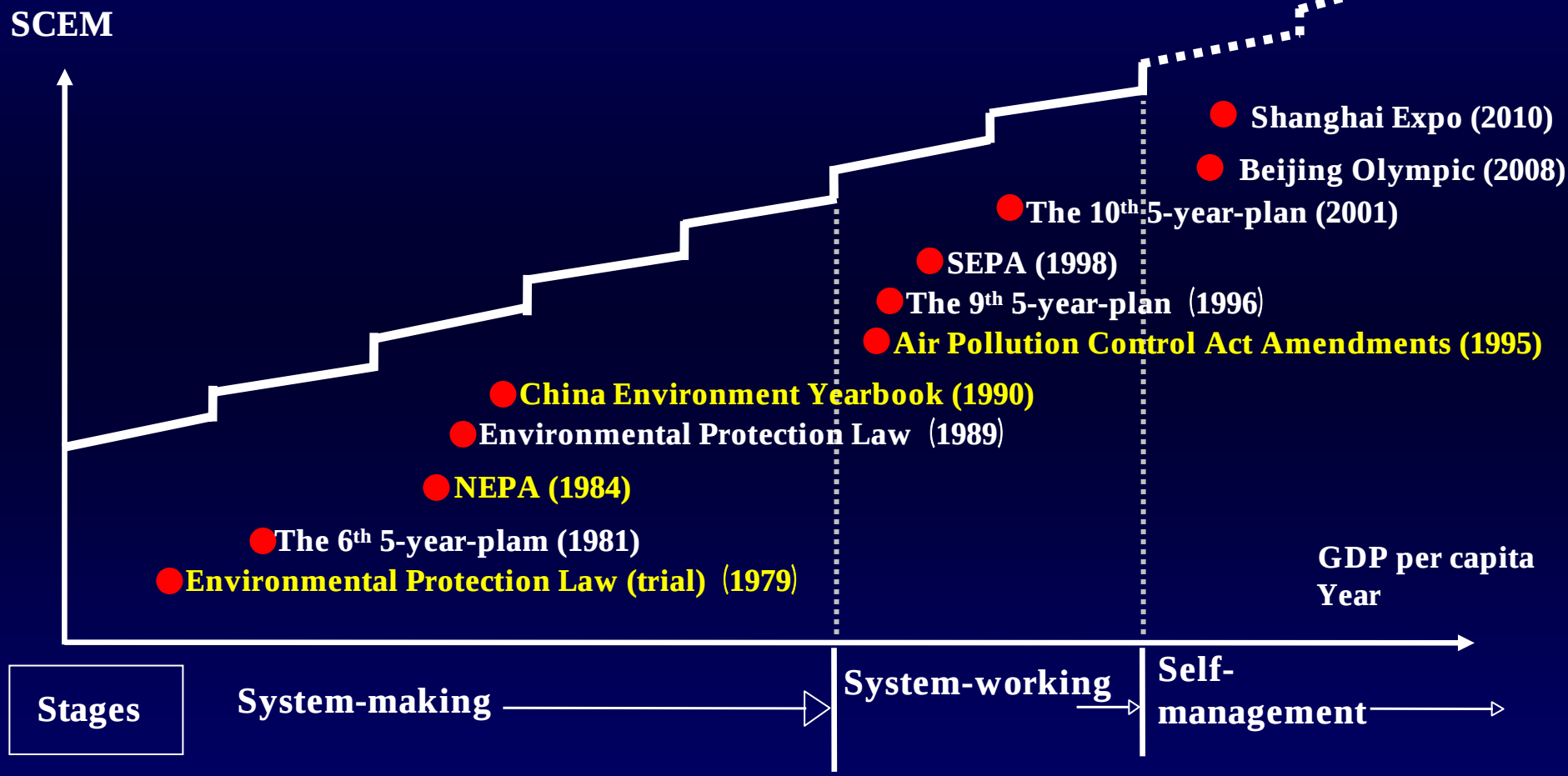
Development of China's SEMS

Relatively smooth shift from system-making into system-working stage



Development of China's SEMS

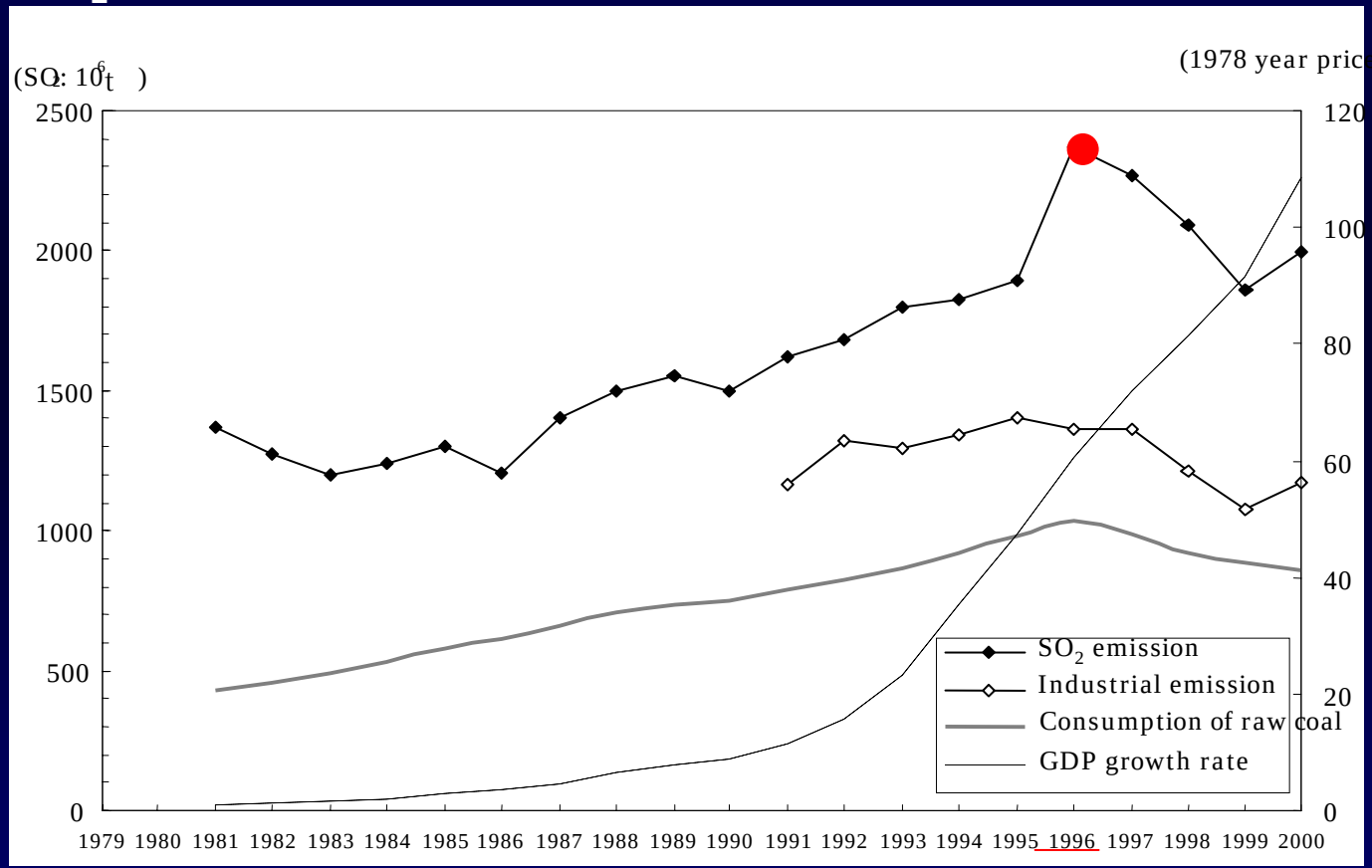
Now shifting into self-management stage



3. Evaluation

Environmental Conditions in China

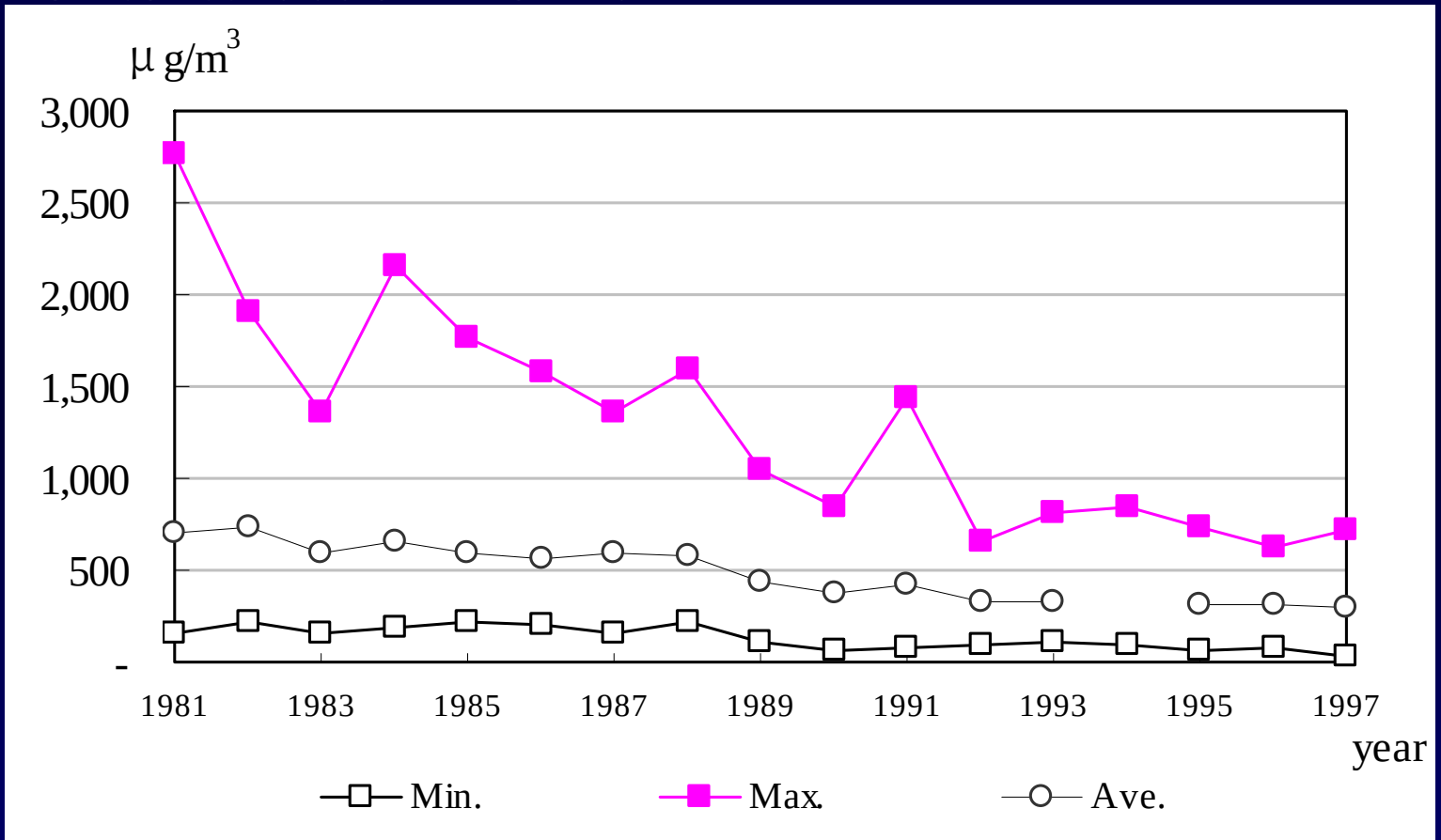
SO_2 emissions in China



Source: Sawazu (2002)

Environmental Conditions in China

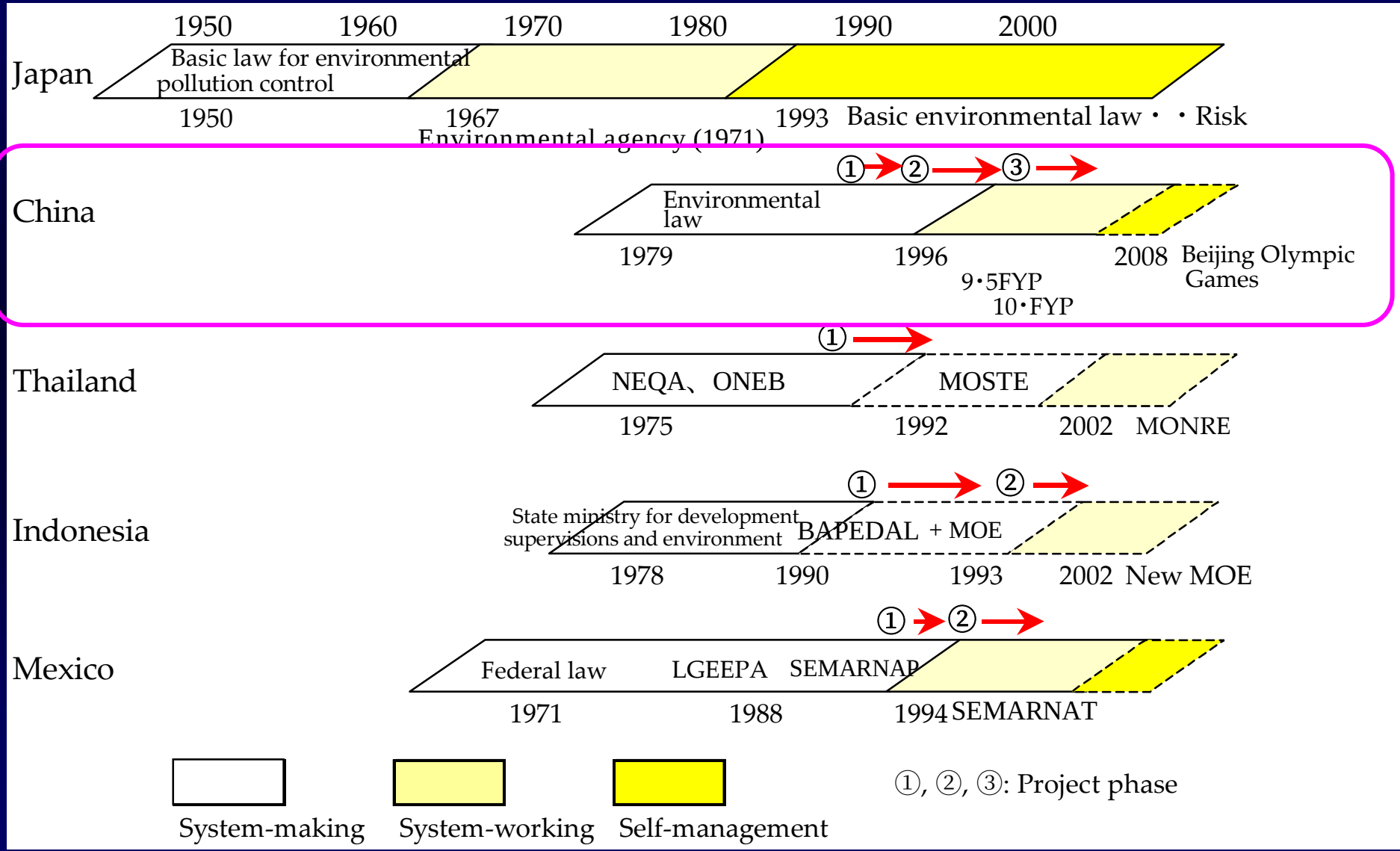
TSP concentration in China



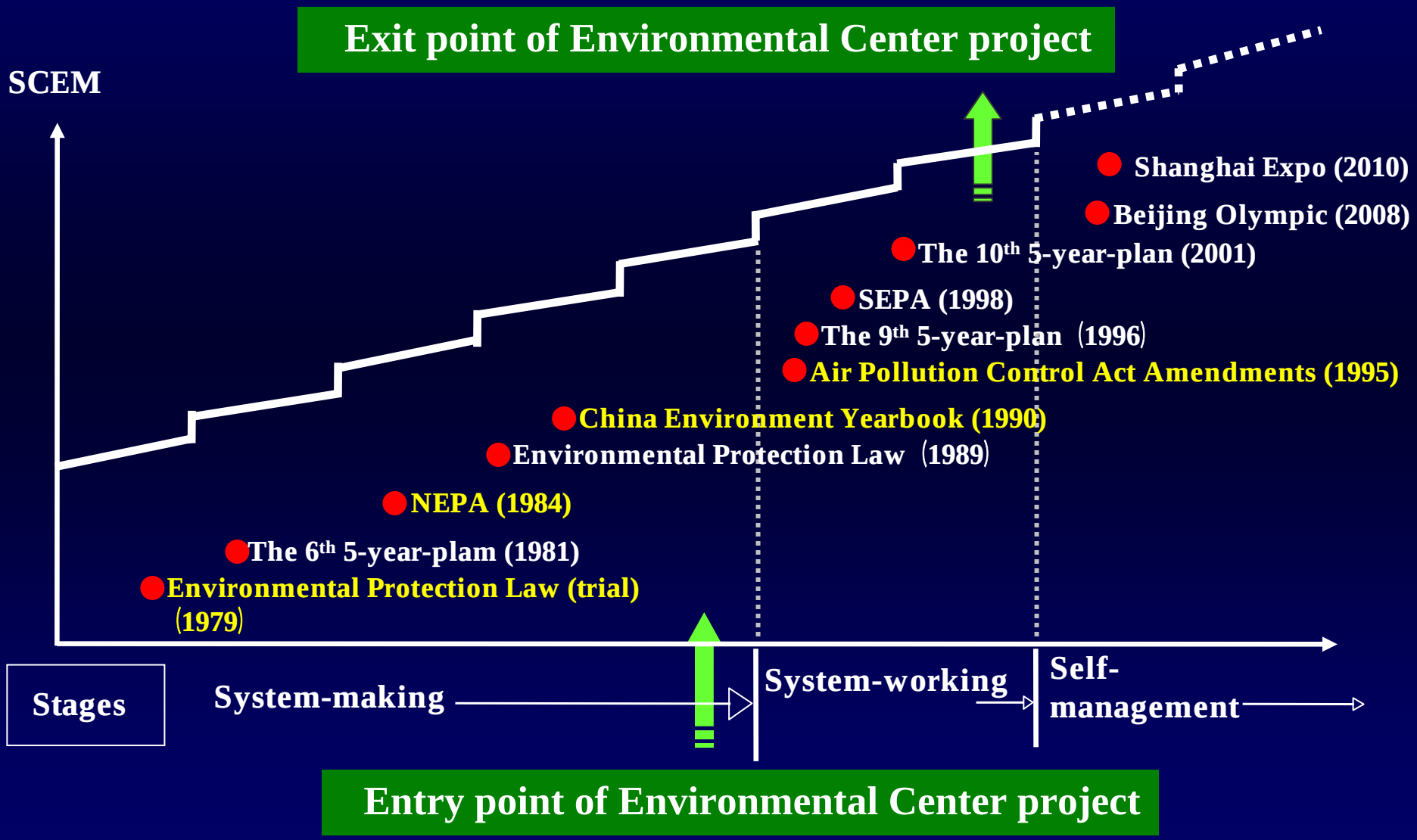
Source: Li (1999)

3-2 Environmental Center Approach in China – Entry/exit points -

SEMS and Project Inputs



Policy Application (China)



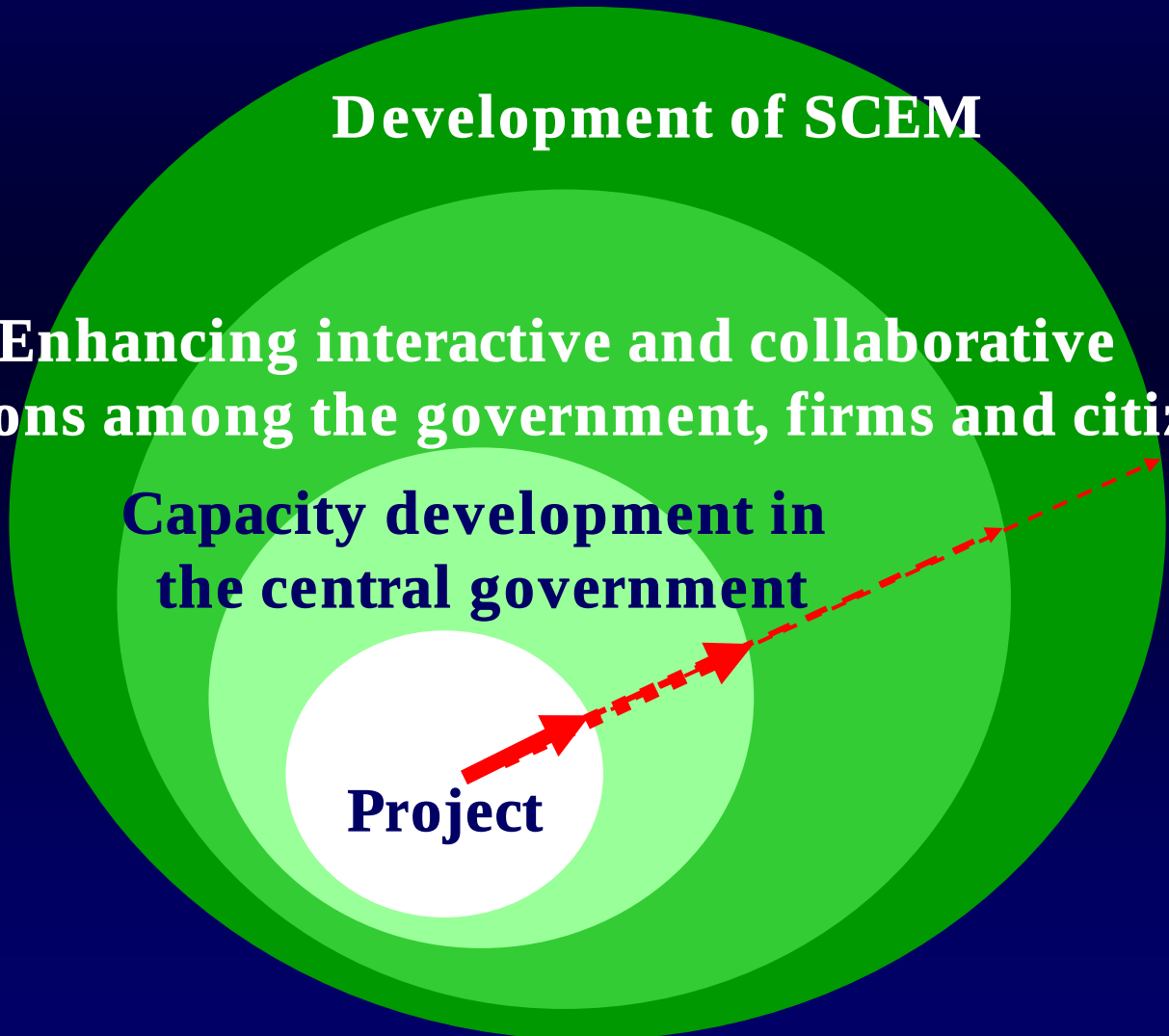
Entry/exit Points

- China

Entry point (1992) was appropriate. The Environmental Center, now in its 3rd phase, has gone beyond the Environmental Center project. Advanced public-private partnership, central / local relationship are strongly expected.

3-3 Impacts on SCEM Development

Impact Layers of Environmental Center Approach to SCEM



Impacts on the Government

Training	Practical training for central administrative office
Monitoring	・Department that oversees monitoring data of the entire country ・100-city monitoring network
Research	・Practical policy studies for pollution reduction under Policy Research Center for Environment and Economy (PRCEE) ・Research reports released at SEPA's requests

- The Sino-Japan Center contributes sufficiently to the capacity development for environmental management of the government through monitoring, research, and training.

Impacts on Firms and Citizens

Training	Training for NGOs.
ISO authorization	・Approved by the government in 2002 as an ISO 14000 certificate authority organization. ・1,085 companies approved as of 2001.
Information dissemination	・Annual environmental performance reports for 600 cities, daily air pollution level reports in 46 main cities ・Mass media's role has increased

- Since information disclosure and reports are restricted by the government's control, it is difficult to say that all information reaches the citizens.
- The Sino-Japan Center has some impact on the citizens through joint projects with universities / research organizations and preparing environmental education materials. However, it needs to expand training beyond targeting NGOs.

Impacts on the Local Level

Training	Training for the local environmental administration bureau directors / staff
Survey	・Data exchange with local monitoring stations ・Environmental network, connecting 100 cities

- The Sino-Japan Center has become the representative organization for the training of environmental administrative officers and the government technology agency, including local representatives.
- Upgrading of local monitoring data in the central core is becoming easier, which will help strengthen the relationship between the central and local levels.
- Central-local relationships need to expand beyond training and monitoring data exchange.

Evaluation Summary

Evaluation Summary (1)

- Overall, the Sino-Japan Center was successful in enhancing capacity building in environmental management in China, especially in government sector.
- Development of SCEM at the local level, especially in the inland provinces and the western region is the challenge the center faces.
- It is urgent to consider the center's new roles in China's self-management stage (after Phase III).

Evaluation Summary (2)

- The Sino-Japan Friendship Center for Environmental Protection works as a *"window"* actor in Japan-China environmental cooperation including business and research
- The center promoted externalization of each countries' tacit knowledge by exchanging explicit knowledge .

  - More than 50 short-term experts dispatched from Japan
  - Training in Japan, seminars, research in China
  - Partnerships among research institutions, universities, and private institutions from both countries

Future Roles of the Sino-Japan Center

- Medium between central / local governments and various organizations through joint researches / programs.
- Promoter of horizontal cooperation between China and Japan.

4. Steps Forward

Contribution of China-Japan cooperation to…

- Further enhancement of three actors' capacity and their relationships in China for self-management of environmental problems.
- SCEM development in the inland provinces and western region.
- Building East Asian environmental management regime.

China's Further SCEM Development

1. **Policy-making**
   - **Enhancement of each actor's capacity development**
2. **Dynamism of social capacity development and institutional change in China**
   - **Consideration of influence of external & internal pressure to SCEM development**
3. **Appropriate measurement of SCEM**
   - **Development of SCEM benchmarks and indicators**

SCEM Development in the Inland Provinces and Western Region

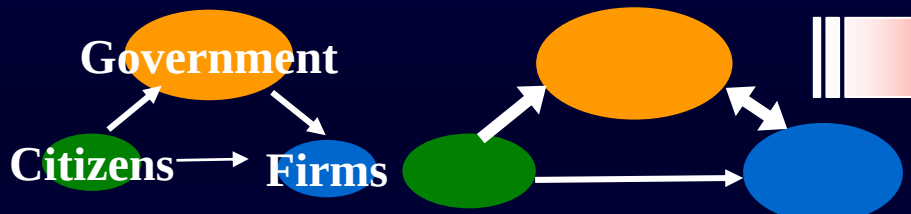
1. Government-oriented cooperation to cross-sectoral cooperation
2. Focus on research / academic sector.
   (Strengthening local universities through human resource development and joint research with universities in the metropolitan areas)

East Asian Environmental Management Regime

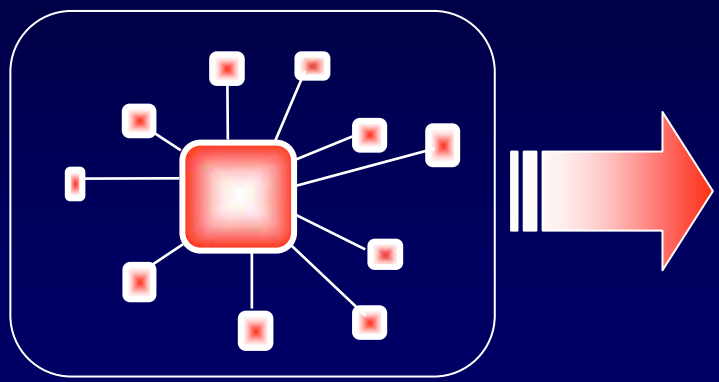
1. Importance of dialogues for seeking common ground / common interests
2. China-Japan-Korea relationship for strong leadership
3. Horizontal cooperation (equal partnership) to build mechanism for sustaining regional common goods.

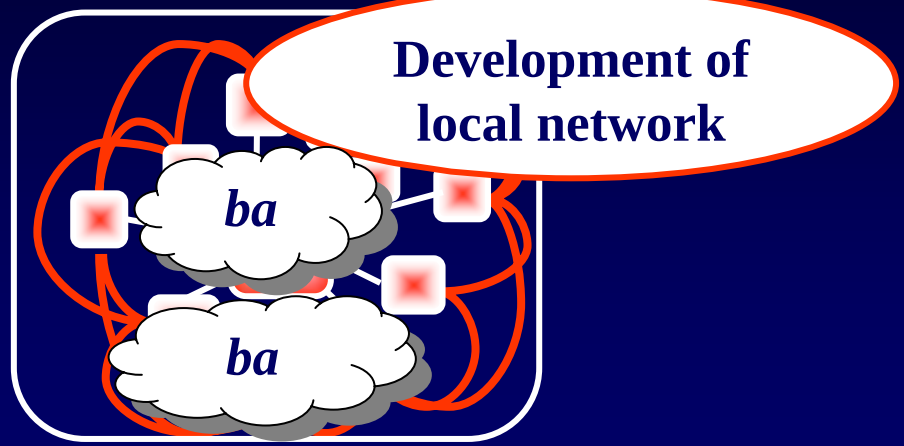
Institutionalized Dialogues *"ba"* and SCEM

Development of interactions among government, firms and citizens



Development of relations between national and local levels





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