Public Works Evaluation in Japan

- to improve efficiency of investment for infrastructure -

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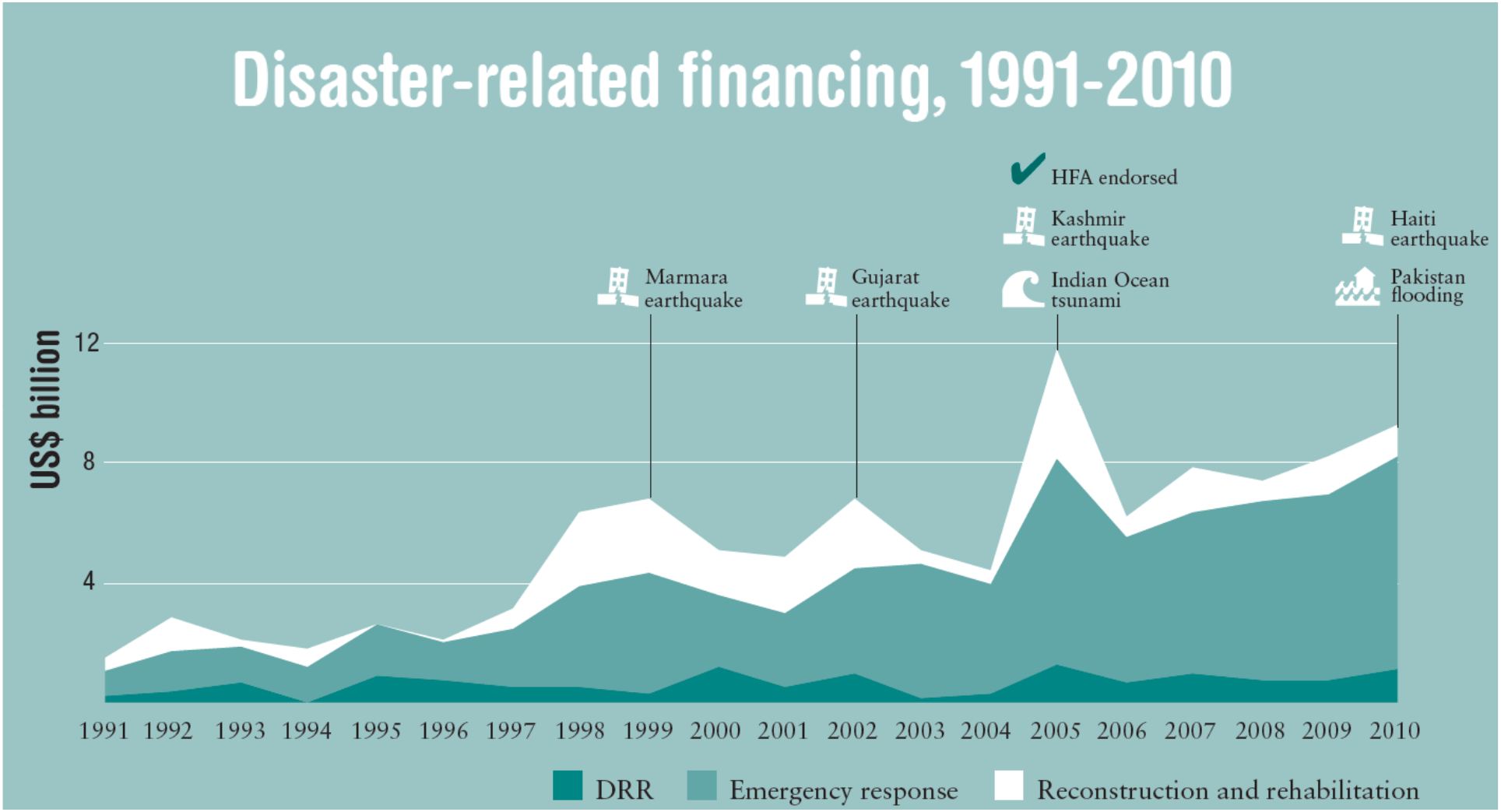
DRR investment



(Source: Financing Disaster Risk Reduction, ODI & GFDRR, 2013)

65.5%

Emergency response

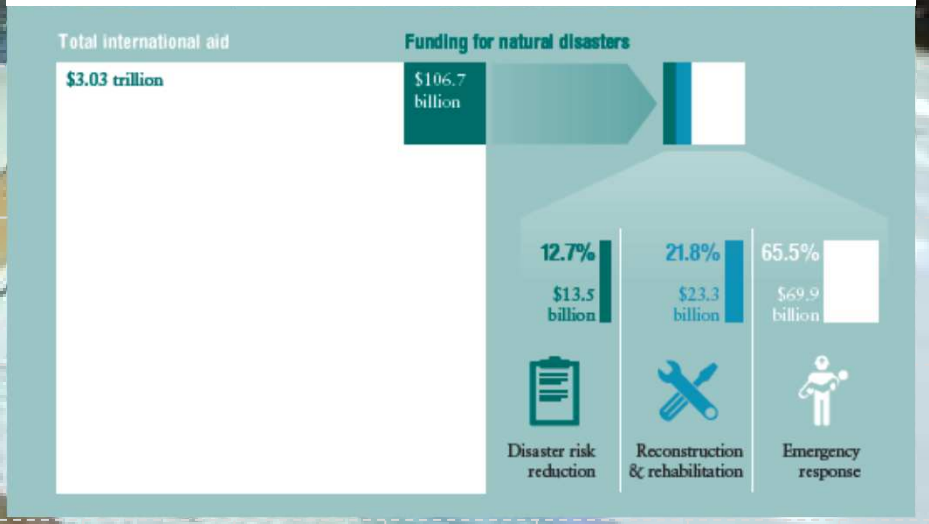
21.8%

Rehabilitation & Reconstruction

12.7%

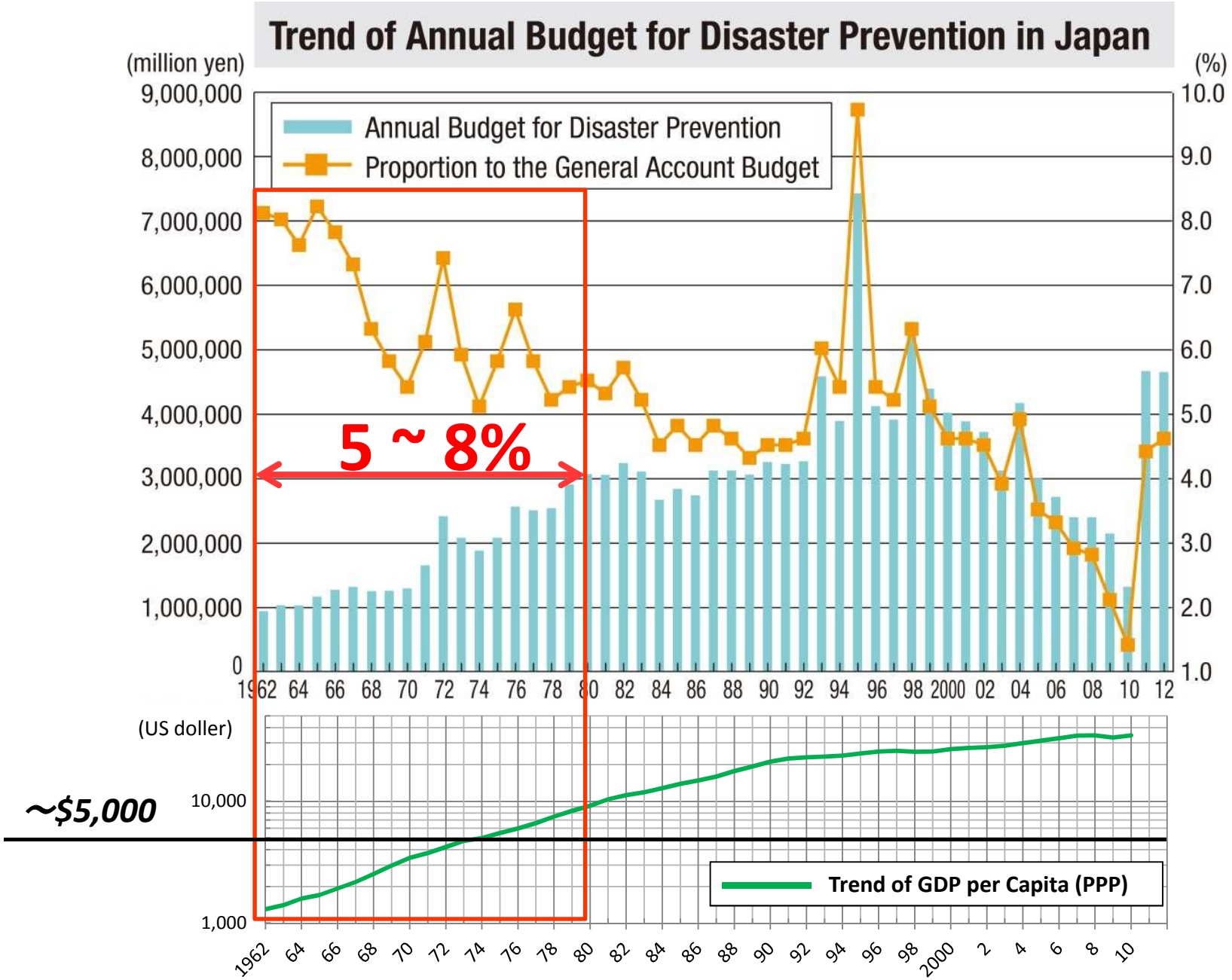
Risk Reduction

Disaster Financing as a proportion of total international aid, 1991- 2010

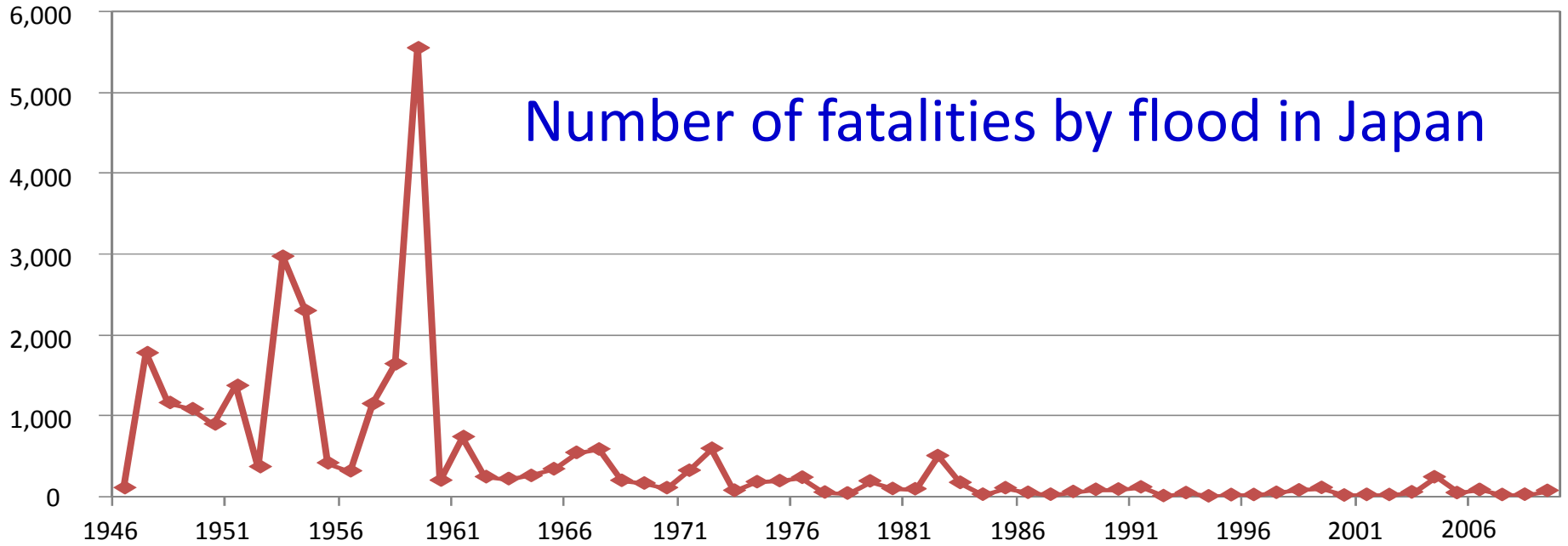


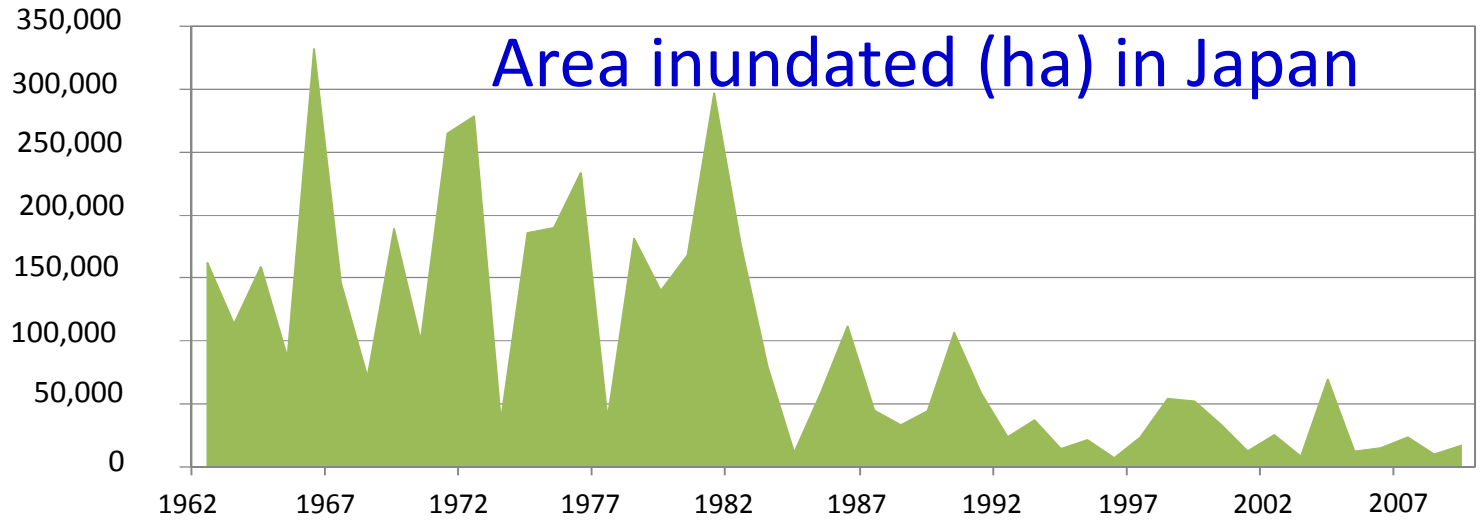
Major portion of funds for DRR has been allocated to emergency response, rehabilitation and reconstruction.

(Source: Financing Disaster Risk Reduction, ODI & GFDRR, 2013)



(Source: Cabinet Office, Japan : Modified by JICA)



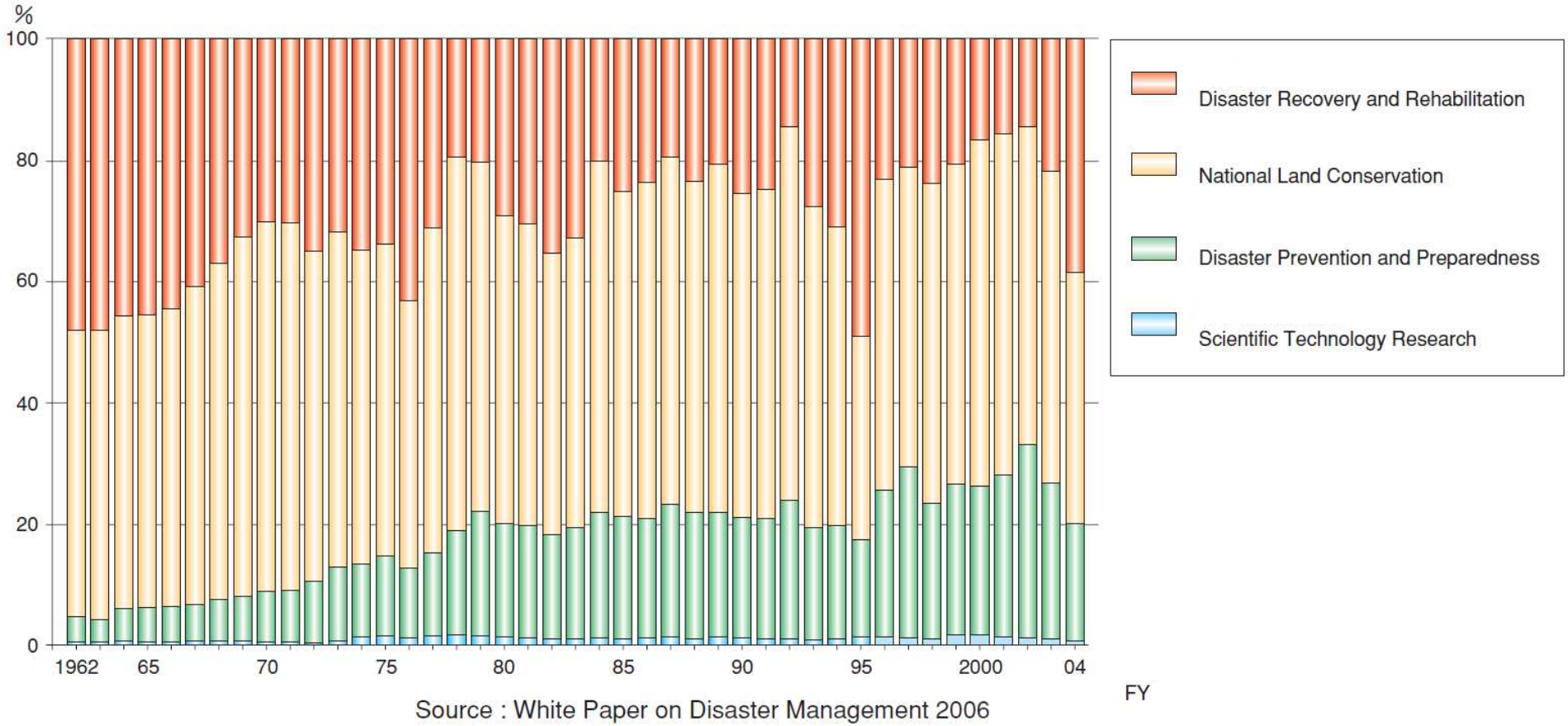


Number of fatalities and inundation area have dramatically been reduced in Japan due to continuous investment in and efforts for flood mitigation.

(Source: Water Disaster Statistics, Ministry of Land, Infrastructure Transport and Tourism, Japan)

Annual Budget for Disaster Risk Reduction in Japan

Change in Disaster Management Related Budget by Field



Source : White Paper on Disaster Management 2006

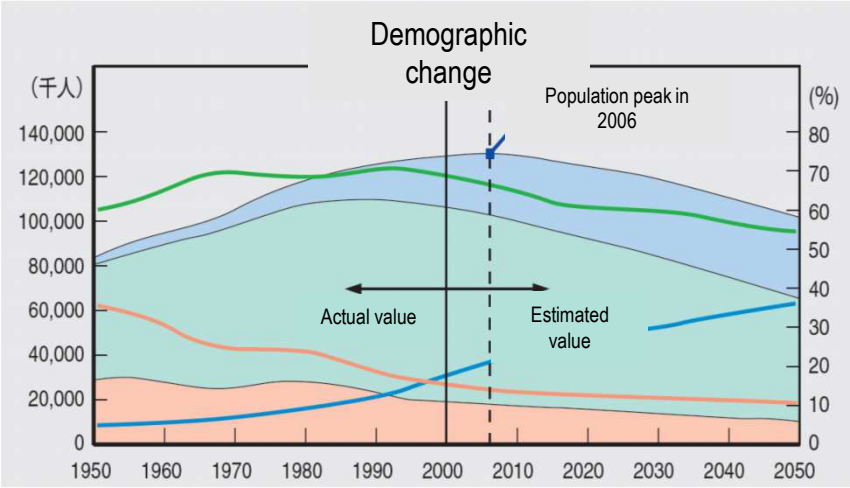
Outline of Today's main part

1. Necessity of public works evaluation
2. Example of evaluation system in Japan
3. For next step

1. Necessity of public works evaluation

Background

■ Rapid change (social & economic environments)



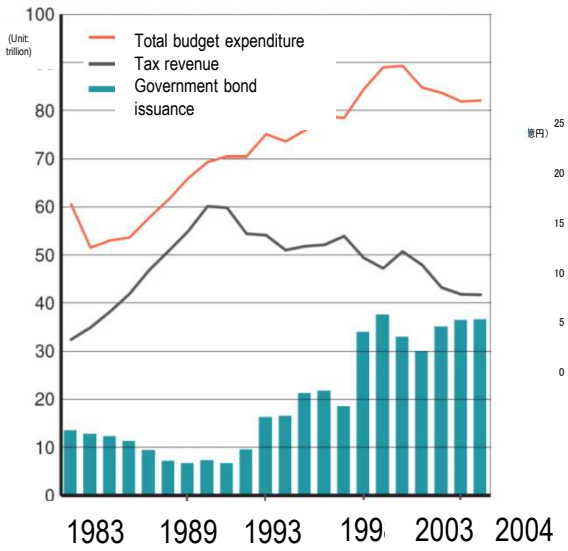
Document) Compiled based on the "National Population Census" issued by the Internal Affairs and Communications and the "Japan's future estimated population" issued by the National Institute of Population and Social Security Research in January 2002

-The population aging faster than other developed countries

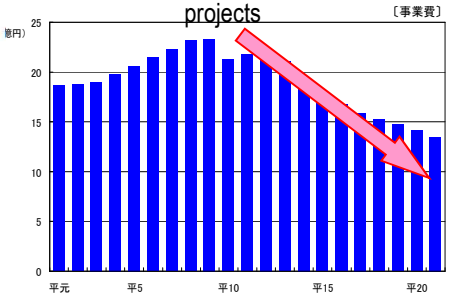
- Increasing global environment issues etc.

■ Current tight budgets

Trends in the general account tax revenue, total budget expenditure and government bond issuance amount



Trend in the budget for flood control projects



- The tax revenue is declining after peaking in 1990
- The issuance of government bonds is remaining at a high level.
- The budget for DRR is also reducing.

Required viewpoints

✓The output-oriented programs with the mindset of the general public need to be implemented.

✓ The quality-oriented social capital improvement is demanded with a focus on "quality."

What is required in public works

<Back ground>
- Vulnerabilities of Japan's land
- The aging and diminishing population
- Limitation of public finance

<Role of public works>
- To secure safety and comfort
- To vitalize communities and their economy
- To create environment of living and preserve environment

<Mission>
- In carrying out public works, "efficiency" and "transparency" must be secured.

Project evaluations implemented

What is project evaluation?

<Objectives>

- To improve efficiency of public works
  - Launch / continue only those whose necessity is confirmed.
  - Cancel those whose necessity has diminished or progress is hopeless.
- To Make more transparent the process of public works
  - Disclose the evaluation methods, results, etc.

<Methods of evaluation>

- Conduct comprehensive evaluations, including cost-effectiveness analysis.
  - Confirm whether or not a new project deserves to be launched and decide whether an existing project should be continued or canceled, considering all the relevant issues, comprehensively.
  - This should include these effects of the work that are hard to convert into monetary value.

2. Example of the evaluation system

(Case of MLIT; Ministry of Land, Infrastructure, Transport and Tourism)

History of the Policy Evaluation System

October 1995

"Report Issued by the Committee for Studying the Comprehensive Method of Evaluating Large-Scale Pubic Works"

Responding to the changes in the Japanese economy and society, a comprehensive evaluation system was established to evaluate large-scale public works.

December 1997

Meeting of cabinet ministers concerned with the "Special Framework of Economic Structure Reform by Making logistics Efficient"

Prime Minister's directives

−Integration of Revaluation System for all public works into the evaluation system

−Application of cost-effectiveness analysis

March 1998

Design of the "Procedures for Evaluating New Public Works Adopted and Controlled by the Ministry of Construction" and of the "Procedures for Revaluating Public Works Controlled by the Ministry of Construction"

April 2002

Enforcement of the "Government Policy Evaluations Act"（No. 86, 2001)

Japan's efforts for policy evaluation

■ Policy evaluation promoted by the entire government

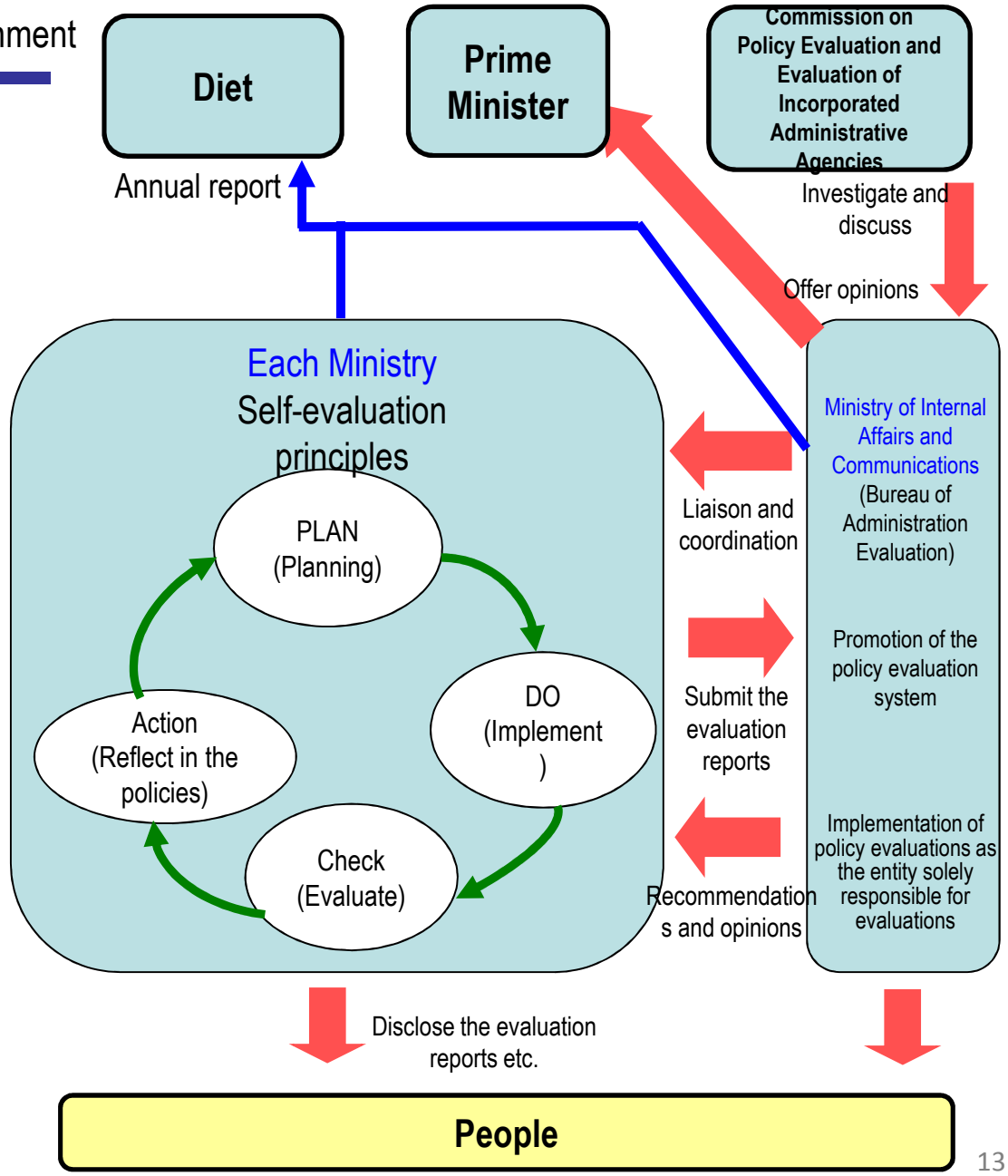
Since April 2002, the policy evaluations have been implemented under the "Government Policy Evaluation Act."

Each Ministry

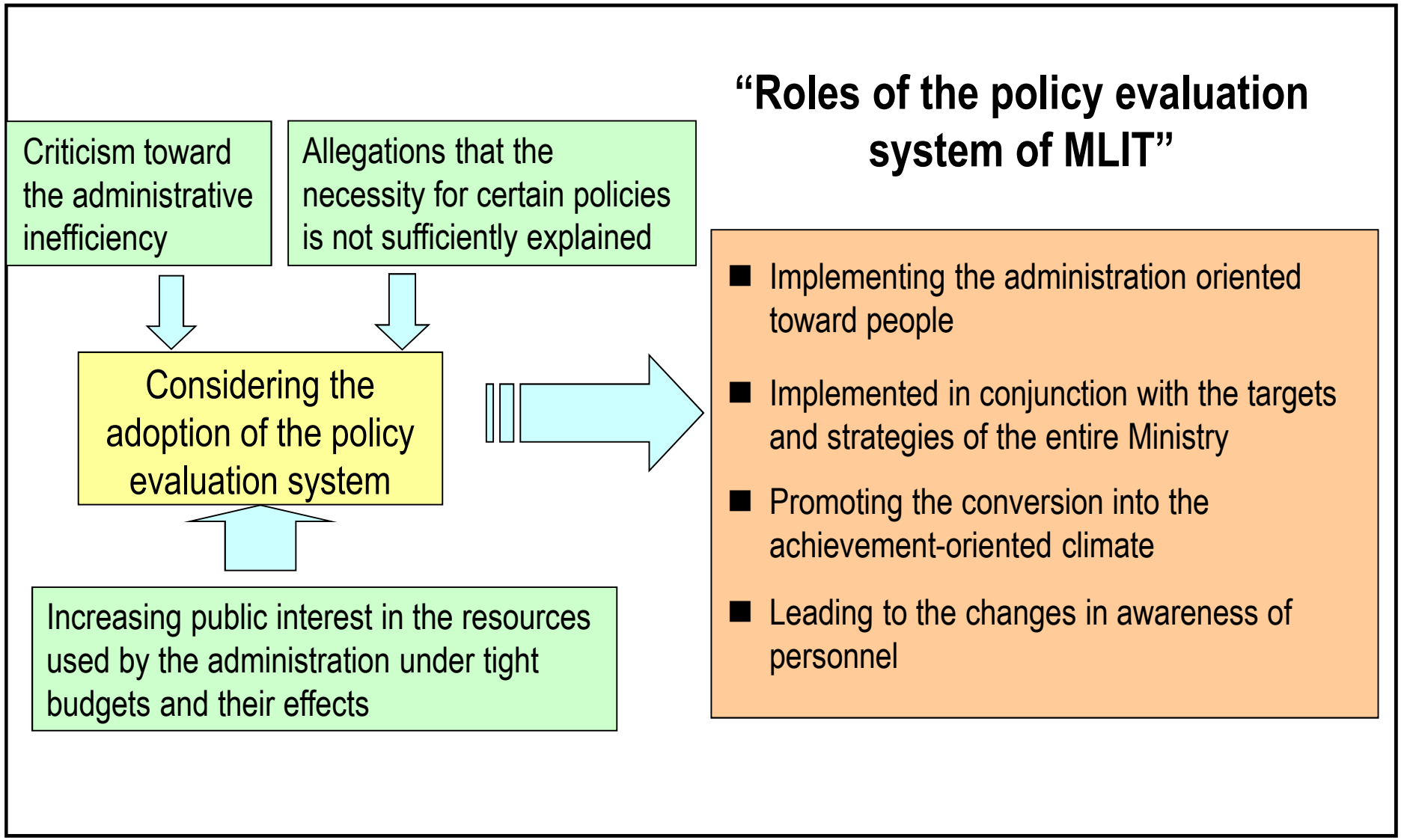
Specialized in planning and drawing up policies

Ministry of Internal Affairs and Communications

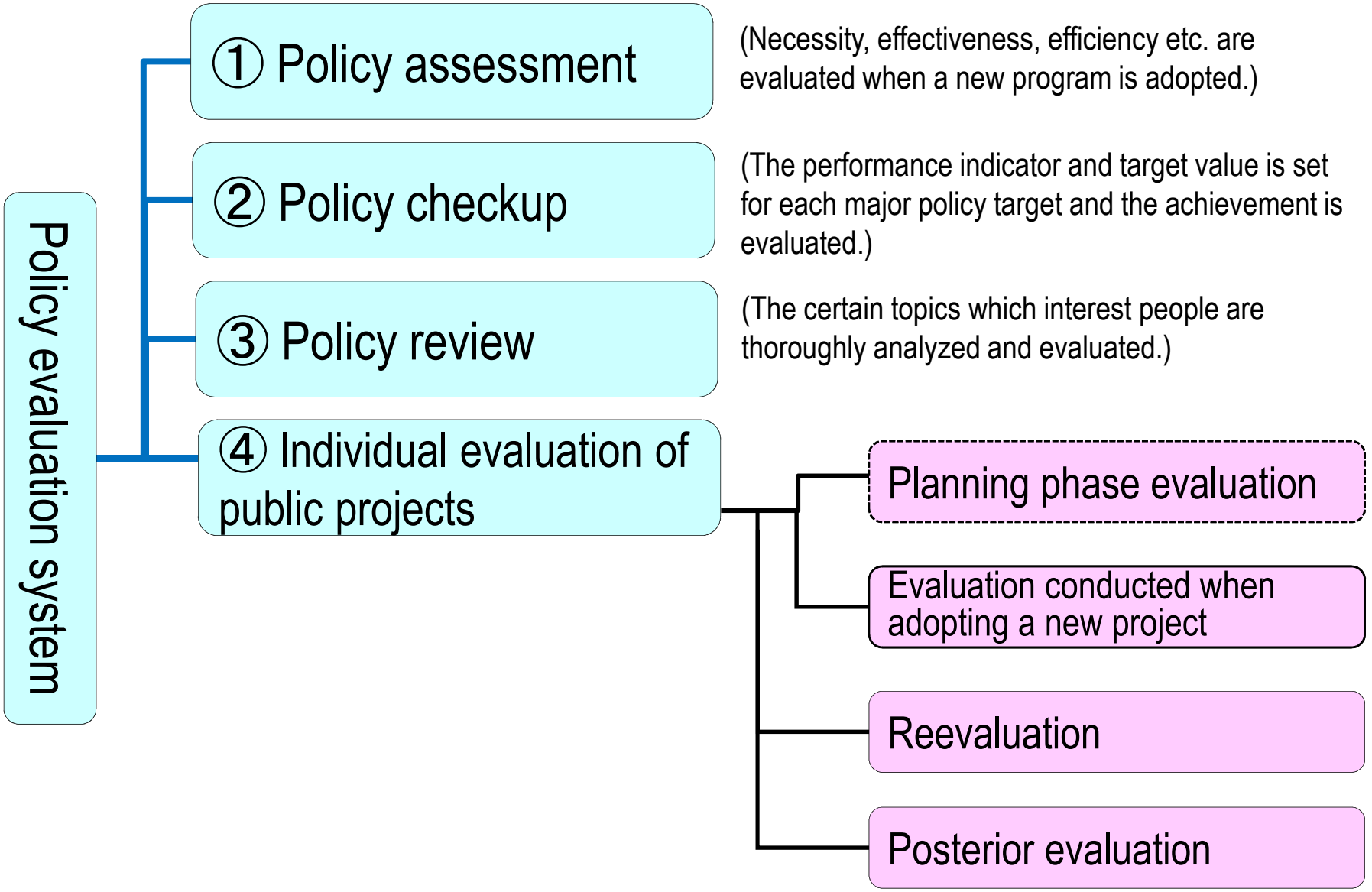
Specialized in implementing the evaluations



Background of the adoption of policy evaluation



Policy evaluation system of MLIT



Policy evaluation system of MLIT

■ The characteristics of the policy evaluation system of the Ministry of Land, Infrastructure, Transport and Tourism

✓By implementing the 3 evaluations: "policy assessment", "policy checkup" and "policy review," the "policy management cycle" is established.

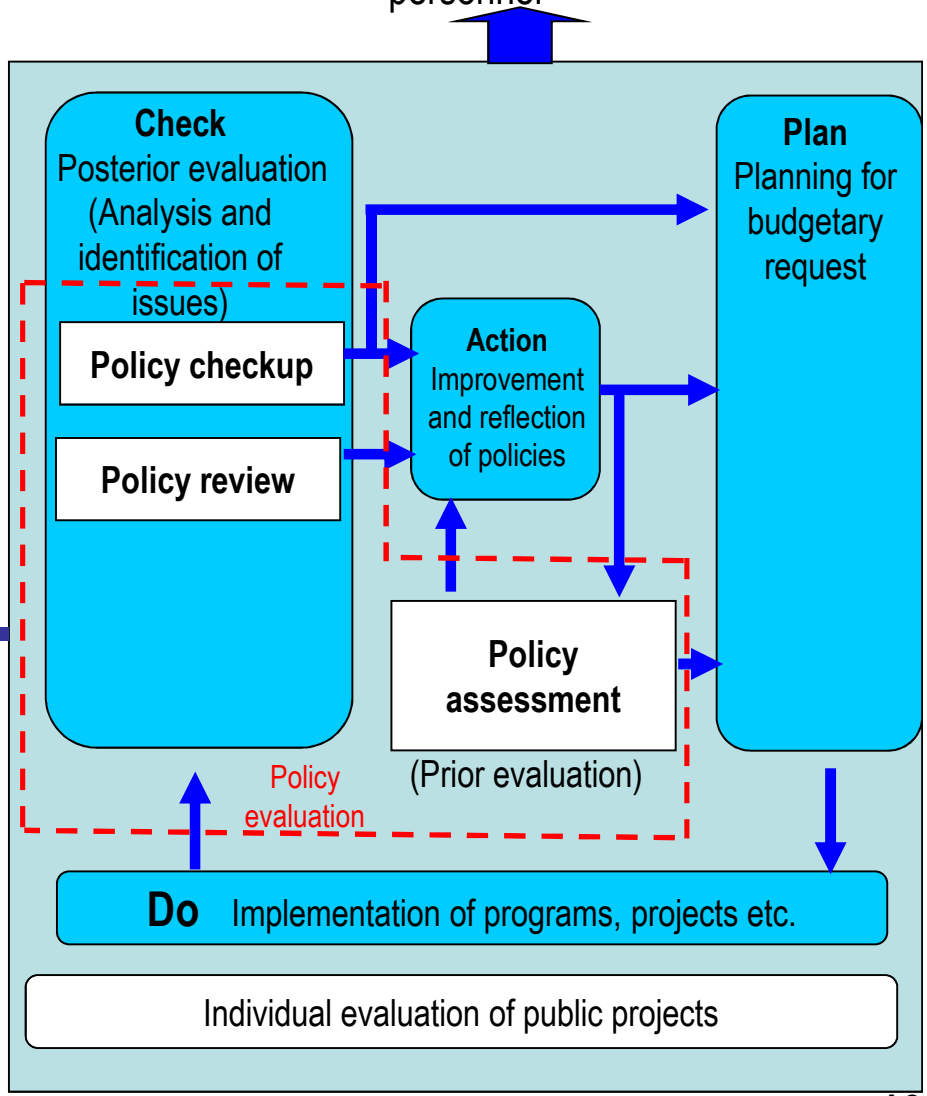
✓By constantly being aware of the effects and issues of the programs, projects etc. implemented, the budgetary request is made and the policies are planned.

✓"Public projects" are individually evaluated.

■ The objectives the Ministry of Land, Infrastructure, Transport and Tourism is aiming at through policy evaluations

- Implement the efficient and high-quality administration oriented toward people.
- Attempt to convert into the achievement-oriented climate.
- Promote the strategic policies in the entire Ministry by making use of the benefits of integration.
- Fulfill the accountability to the public (Accountability).

Achieving the policy targets ("life and environment," "safety" and "vitality") and increasing the awareness of personnel



Policy Assessment Procedure

Policy assessment

The **policy assessment (prior evaluation)** is a method to evaluate the planned programs to be newly adopted in terms of the following factors.

- Objective - Necessity
- Efficiency - Effectiveness

Objectives

- ✓ Clearly specify the intensions of policies and the expected effects, and disclose the process of planning to the public.
- ✓ By intensively assigning budgets to the programs required by the public, thoroughly eliminate waste from the budget.

(Example)
- Drawing up the "(tentatively called) 100 millimeter/h safety plan" for assuring secure lives in anticipation of torrential downpours.
- Promoting the measures against high tides and waves as emergency measures in anticipation of the sea level elevation due to global warming.

Target programs

- ○ The programs, attempts are made to adopt
- ○ Those of the existing programs, attempts are made to revise, abolish, alleviate or extend

Check the following items regarding the target programs.

Specification of targets
Specify the targets of objectives (policy targets, program targets, performance targets and their target values)

Necessity
By using the "logical framework analysis procedure (logical analysis method)," identify the objective necessity of programs and the logical process for achieving the targets.

Logical framework analysis procedure (Logical analysis method)

- STEP1 Clearly indicate the gap between the target and the current status.
- STEP2 Analyze the cause of the gap.
- STEP3 Demonstrate that it is necessary to revise or improve the current system in order to achieve the target (= policy issues).
- STEP4 Propose the specific measures and methods (=programs and projects) used for solving such policy issues.

* Evaluate whether other social needs are met and the administration (government) is needed to take the responsibility.

Efficiency
Demonstrate that the implementation of programs is more effective in terms of cost-benefit performance.

Effectiveness
Identify the effects gained by implementing the programs and the contribution to the achievement of the targets.

Policy Checkup Procedure

Policy checkup

The **policy checkup (performance measurement)** is the method to provide information on the achievement of targets, used by setting the performance indicators and target values for each policy target specified by the Ministry of Land, Infrastructure, Transport and Tourism and measuring the values of indicators regularly (annually).

(Example)

-The number of households vulnerable to the inundation above floor level in the areas with central and core functions

--The proportion of water systems with the sophisticated disaster prevention information systems.

Attempts are made to achieve the following 2 objectives by implementing the policy checkup.

- ✓ Establish the achievement-oriented method for proceeding with the duties.
- ✓ Fulfill the accountability to the public by regularly disclosing the information on the achievement of targets.

Plan: Setting the performance indicators and target values

① Setting the policy targets
By focusing on the outcomes for the public, select the policy targets cross-sectionally covering the major administrative areas.

↓

② Setting the performance indicators and target values
Select the performance indicators enabling the achievement of policy targets to be properly indicated and quantitatively measured, and set the target values to be achieved within future 5 years.

↓

③ Setting the program targets
Set the program targets to clarify the relationships between policy targets and performance indicators as specific methods and measures used for implementing the policies.

Do

Implementation of programs: Implement the programs in accordance with the targets specified etc.

Check: Measuring and evaluating the performance indicators and target values

【Annual evaluation】

- Measure each performance indicator
- Evaluate the achievement of target values.
- If the targets are not sufficiently achieved, analyze the cause and identify the issues.

Action: Defining the policy orientation and the remedial measures

Define the policy orientation and the remedial measures in order to solve the identified issues and clearly indicate the future measures.

Policy Review Procedure

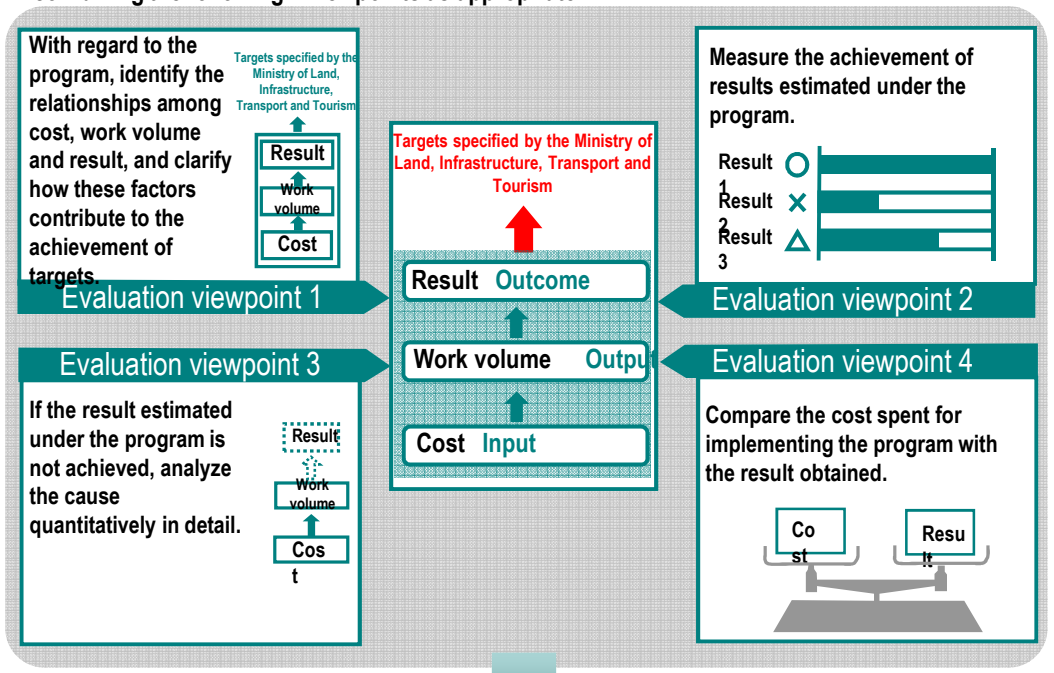
Policy review

The method for deeply analyzing and comprehensively evaluating specific topics from various viewpoints.

From the programs the Ministry of Land, Infrastructure, Transport and Tourism is working on, select the topics as those shown below and conduct the evaluations according to the plan.

- ○ The topics considered to be important as issues relating to policies of the Ministry of Land, Infrastructure, Transport and Tourism
- ○ The topics, whose evaluations are especially desired by the public
- ○ The topics which require more comprehensive evaluations based on the results of other evaluations
- ○ The topics which are supposed to be revised to some extent in accordance with the changes in social and economic situations

In accordance with the characteristic of programs, evaluations are done by selecting and combining the following 4 viewpoints as appropriate.



Identify the issues and the points to be improved to achieve the targets

<Policy review topics (Examples)>

- Law Concerning the Promotion of Sediment-related Disaster Prevention in Sediment-related Disaster Hazard Area
- Comprehensive flood control measures

History of the Project Evaluation System

March 2003
Design of "Procedures for the Post-Evaluation of Public Works Controlled by the Ministry of Land, Infrastructure, and Transport and Tourism"

February 2004
Design of the "Technical Policies on the Cost-Benefit Analysis Applied to the Evaluation of Public Works"

December 2009, April 2010

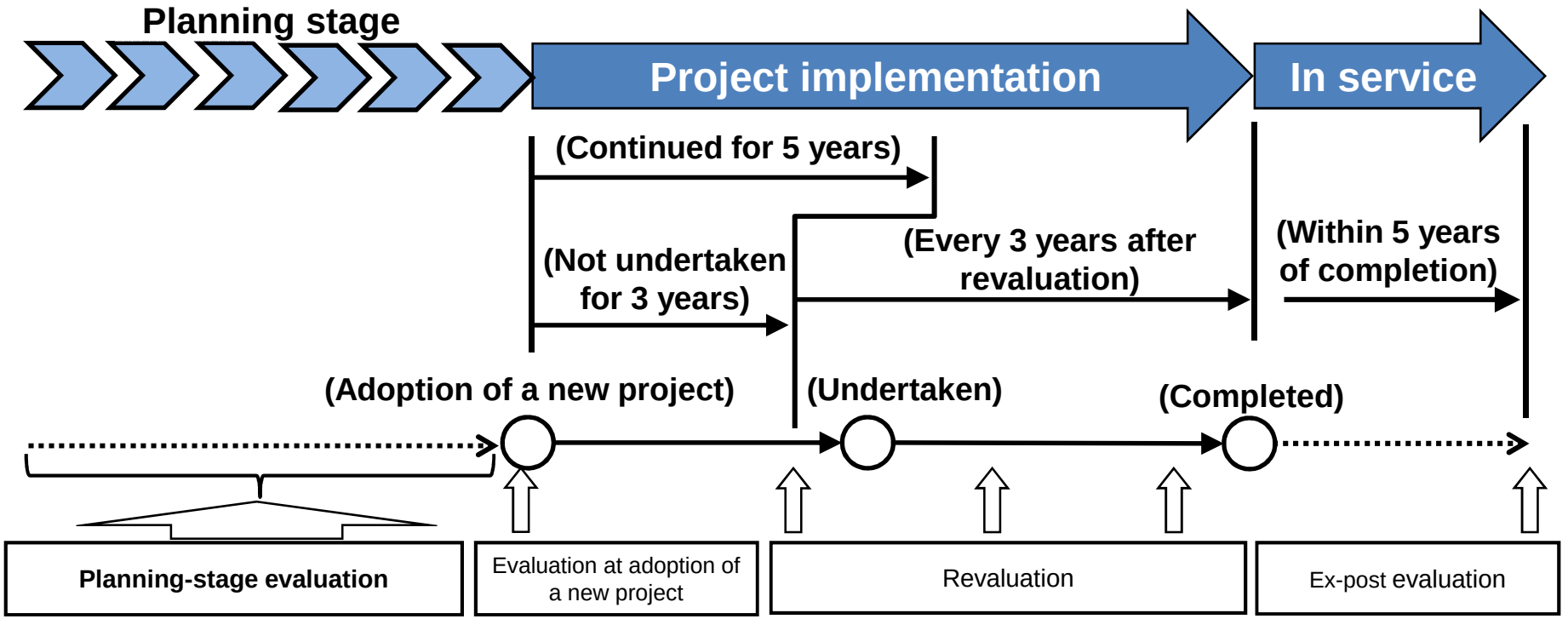
−Institutionalization of hearing sessions in prefectures and ordinance-designated cities, etc.

−Enhancement of the ex-ante evaluation by the third parties

December 2012

Design of "Procedures for the Planning-stage Evaluation of Public Works Controlled by the Ministry of Land, Infrastructure, and Transport and Tourism"

Workflow of project evaluation



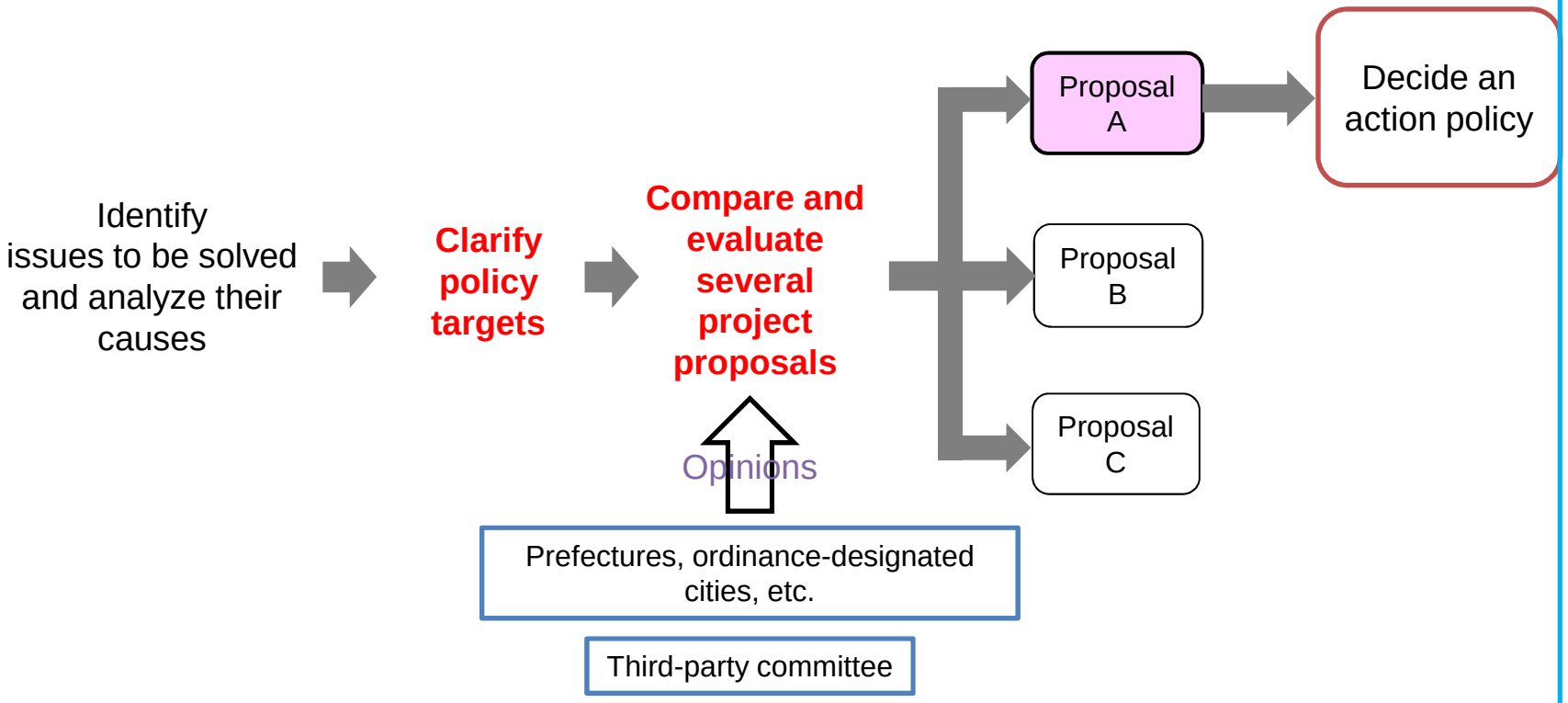
1. **Planning-stage evaluation**
   Clarify policy targets, and compare and evaluate several project proposals
2. **Evaluation at adoption of a new project**
   Evaluate the necessity of a new project to decide whether to launch the project
3. **Revaluation**
   Review the necessity of a project to decide whether to continue the project or discontinue the project
4. **Ex-post evaluation**
   Check the effects and environmental impacts of a project after its completion and, if necessary, discuss more proper measures and planning to apply to future projects

1. Planning-stage evaluation of public works projects

Objectives

- Compare and evaluate several project proposals by taking into consideration local issues, goals to be achieved and local opinions.
- Check the necessity and validity of the project.

Workflow of project evaluation



2. Evaluation at adoption of a new work

-- Only these projects whose necessity is confirmed are to be adopted. --

Projects covered by new project evaluation

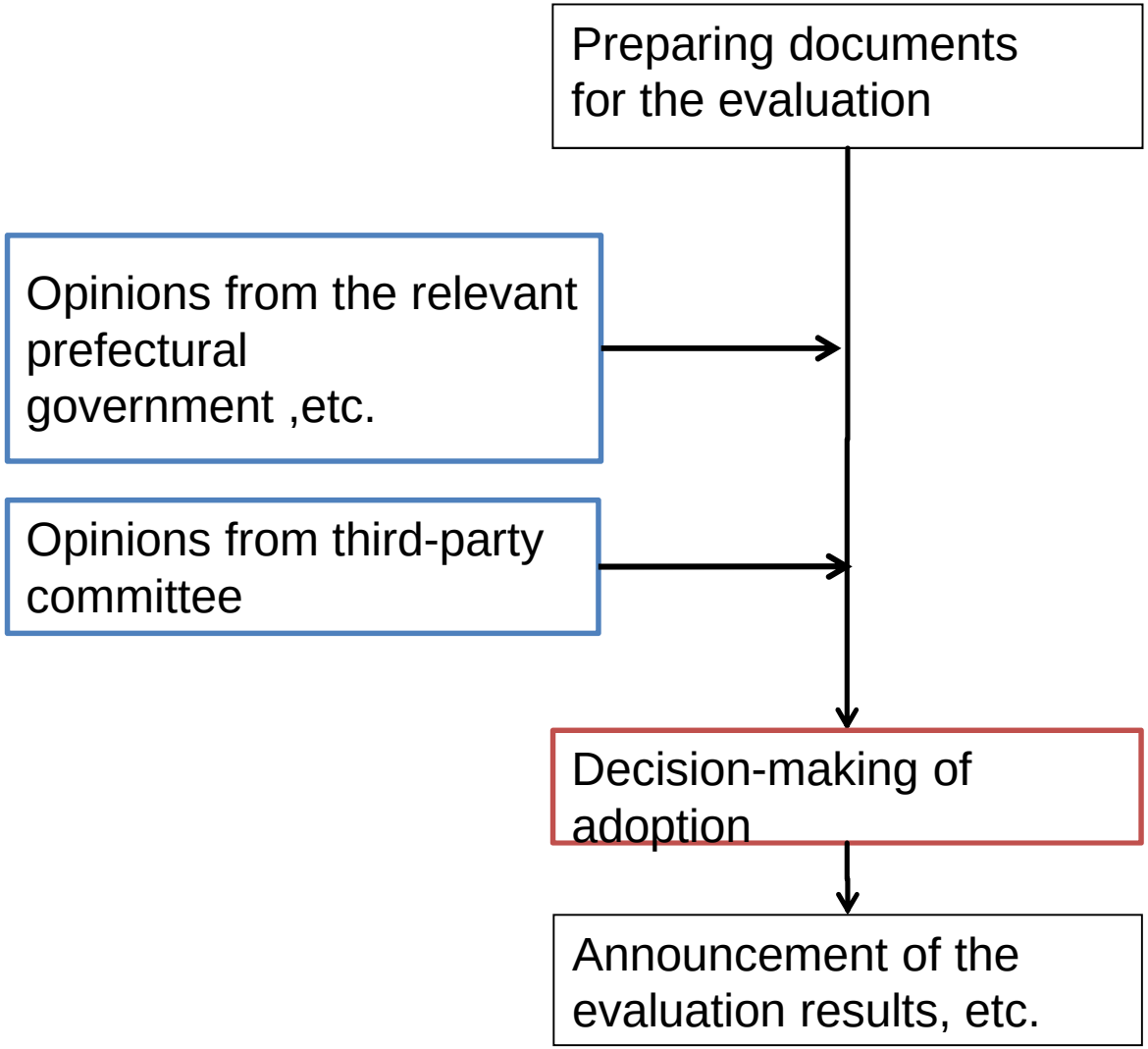
Projects whose expenses are to be financed by the national budget except for maintenance projects

Viewpoints in adoption evaluation of new projects

1. Effectiveness of investment in the project (cost-effectiveness analysis should be conducted, basically)
2. Socio-economic situations, etc., related to the project

2. Evaluation at adoption of a new work

Implementation workflow of adoption evaluation of a new project



3. Revaluation

-- Cancel projects whose necessity is not confirmed or progress doesn't seem prospective --

Projects subject to revaluations

Not launched after its adoption

(1) A project a specified time length has passed since its adoption and not launched yet.

(3 years for a directly-run project, 5 years for a subsidy project)

Launched

(2) A project 5 years have passed since its adoption and still in progress

(3) A project a specified time length has passed since its revaluation.

(3 years for a directly-run project, 5 years for a subsidy project)

Other

(4) A project in need of revaluation, in response to a drastic socio-economic change, etc.

3. Revaluation

○ Viewpoints in revaluation

(1) Necessity of the project, etc.
1)Changes in socio-economic situations
2)Effects of investment in the project
(Conduct cost-effectiveness analysis, basically.)
3) Progress of the project
(2) Expected progress of the project
(3) Possibilities of cost cutting of and an alternative plan to the project

○ Criteria in revaluation

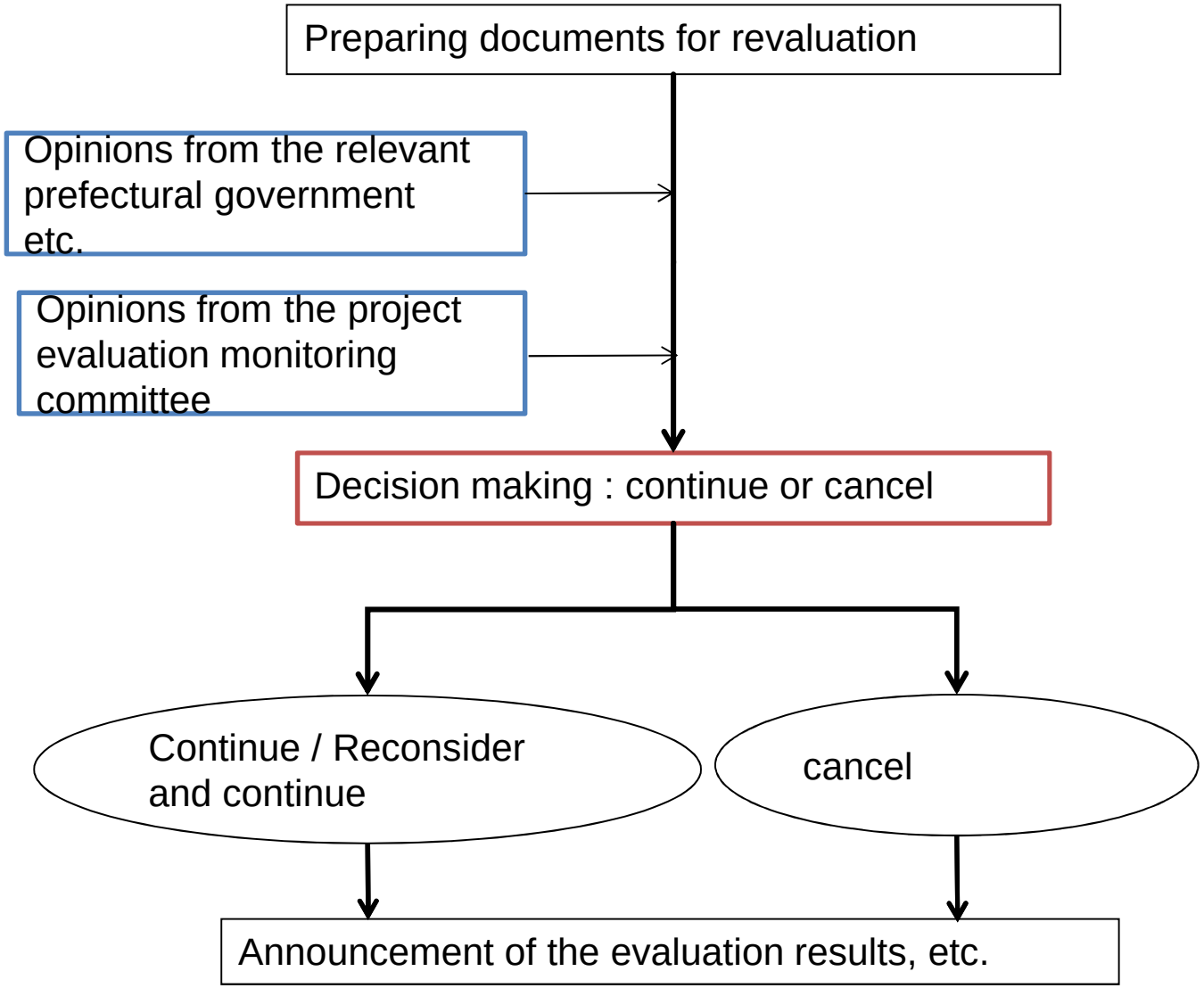
[Continue]
•The project judged to deserve continuation from viewpoints of (1) and (2) .
•The project reconsidered from (3) and it is still to be continued from (1) and (2).

[Cancel]
•The project deemed not to deserve continuation from either (1) or (2) or both.

Announce the evaluation results, reasons, and what to do after the revaluation, etc.

3. Revaluation

○ Workflow of revaluation



3. Revaluation

○Result of revaluation

Major reasons for cancellation

- "Changes in social and economic circumstances surrounding the project" due to the likelihood of less demand than expected
- "No prospect for the progress of the project" due to difficulties in land acquisition and the adjustments with local people, etc.

(Units: Nos, 100 mill. Yen)

Projects Cancelled from FY2004 to FY2013			
	Number of projects revalued	Number of projects cancelled	Total cost of the cancelled projects
FY2004	930	17	1,302
FY2005	899	23	6,368
FY2006	750	11	707
FY2007	924	6	325
FY2008	3,658	14	2,688
FY2009	266	6	1,172
FY2010	461	0	0
FY2011	575	10	2,405
FY2012	254	12	4,178
FY2013	415	10	2,307
Total	9,132	109	21,452

215 mill. $ =

※ 1 $ ≒ 100 Yen

4. Post-evaluation after the project completes

-- Follow-up activities --

Projects subject to post-evaluations

○ A project a certain time length (up to 5 years) has passed since completion

Objectives

- To verify the completed project's effects, influences to environment, etc. and to consider improvement measures, if necessary
- To use the post-evaluation results for planning of similar projects in the future and reconsidering of project evaluation methods

4. Post-evaluation after the project completes

Viewpoints, etc. in post-evaluations

○ **Viewpoints in post-evaluations**

1. **Changes in the factors used in the cost-effectiveness analysis**

E.g. Benefits: Traffic volume, cargo volume, etc.
Costs: Construction, land purchase, etc.
Duration of the project: The cause of the delay, etc.

2. **Project's effects**

E.g. Elimination of traffic congestions, alleviation of flood damages, etc.

3. **Changes to environment**

E.g. Changes in the vegetation, reduction in noises, reduction in CO_2 emission, etc.

4. **Changes in socio-economic situations**

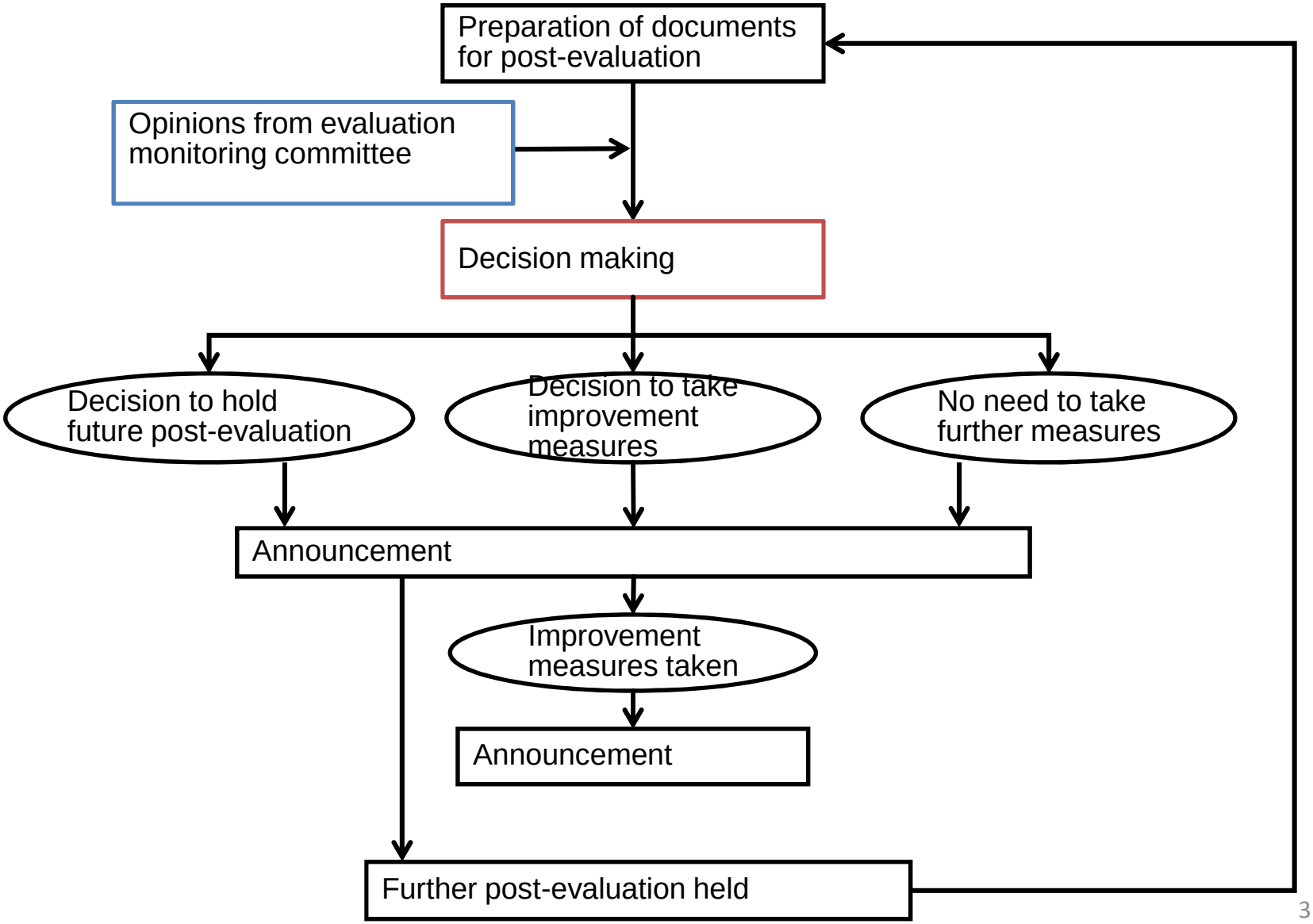
○ **Consideration**

1. **necessity for future post-evaluations**
2. **necessity for improvements**
3. **necessity for reconsideration of planning of similar projects and project evaluation methods**

Announce the evaluation results

4. Post-evaluation after the project completes

○ Workflow of post-evaluation



3. For next step

Voices about project evaluation

From officers carrying out a project

- B/C is just one of the indices in evaluation.

  Evaluation should be comprehensive, taking in many different items.

  ⇨ The current B/C is incomplete. The “B” (Benefits) of the current B/C fail to take in environmental, safety, and many other effects.

From citizens

- Information disclosure still has a long way to go

  ⇨ People distrust these figures, suspecting some window dressing. Or the calculations might be left to consultants, some suspect.

- B/C should be at the center of evaluations. Efficiency matters most.

  ⇨ Evaluations should start with these high-B/C projects.

Problems with the current evaluation system

○ Many are still criticizing public works over their necessity.
○ Many are also blaming the existing evaluation system.

○ Problems with evaluation methods

(1) Limitation of accuracy

・Evaluation stands upon some predictions and therefore inevitably involve some errors in its results.

(2) Limitation of measuring technology

・Some projects' effects are not measurable.
・If effects can be quantified, still many of such quantities cannot be expressed in monetary value.

February 2004 Technical Guideline on Cost-Benefit Analysis in Public Work Evaluation was designed.

June 2008 and June 2009, the Technical Guideline was revised.

○ Problems with use of evaluation results

(1) Unclear relationship between evaluation results and decision-making

・Though we are making comprehensive evaluations including cost-benefit analysis results and many other data, it is hard to see how such results are used in priority setting, budget allocation, and other decision-making.

(2) Disclosure of information on evaluation

Database of evaluation results for users

- ○ Record in a single sheet record the whole story of each and every project's new project adoption evaluation, revaluation, and post-evaluation(s).
- ○ Publish records over the Internet, including data of cost-benefit analysis, etc. (for instance, planned traffic volume, predicted demand, etc. in new project adoption evaluations)
- ○ Clearly indicate the Section responsible and its Manager's name.
- ○ Show the locations of projects over a map.

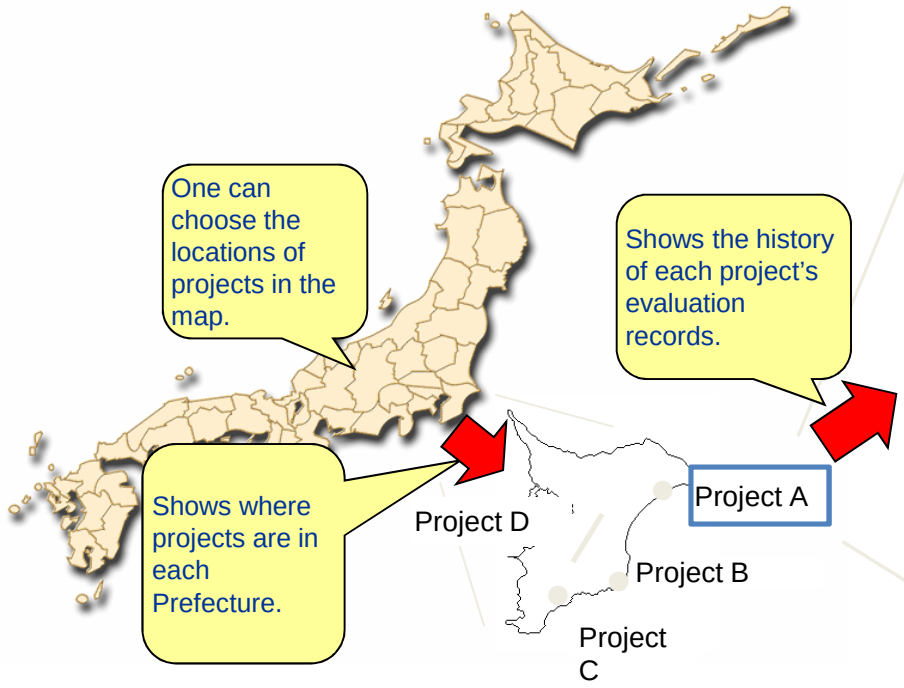


Table: "Project medical records" (examples)

Project's name	Project A
Section responsible (Name of the Section manager)	XX Section, XX Bureau (Manager: XXXX)
Year of post-evaluation	FY XXXX (X years after the project's completion)
Post-evaluation results	• Changes with factors involved in the cost-benefit analysis • Project's effects • Influences to environment • Changes in socio-economic situations
Opinions of the Project Evaluation Monitoring Committee	
Measures to take in response to the post-evaluation	・Need for improvement
Decision to continue / cancel	Continue
decision	

Post-evaluation
revaluation
new project adoption evaluation

Mottoes for those engaged in public works evaluation

Those engaged in public work evaluations must hold on to:
–Be tough to yourself. Think and act truly for the benefits of the people.
–Disclose the evaluation methods, data, and results to the public, to fulfill better your accountability. Also, respond with sincerity to many criticisms.
–Be well aware that scientific knowledge has its limitations.

¡¡Gracias por su atención!!

Thank you for your attention!