



# Airport Environmental Measures Taken by JAPAN.

**Civil Aviation Bureau (CAB)**  
**Ministry of Land, Infrastructure, Transport and Tourism (MLIT)**

**JCAB HQ, Tokyo, Japan**

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## ← Contents

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- 1.Environmental measures on PLANNING stage
- 2.Environmental measures on CONSTRUCTION stage
- 3.Environmental measures on MAINTENANCE stage



## ← Outline of this Presentation

- The consistent airport environmental measures are taken from the planning to operation stages. This makes coexistence with environment.
- Measures at each stage are introduced.

Planning

**Example:**  
**Naha Airport Runway Expansion Project**

Construction

**Example:**  
**Naha Airport Runway Expansion Project**

Operation  
&  
Maintenance

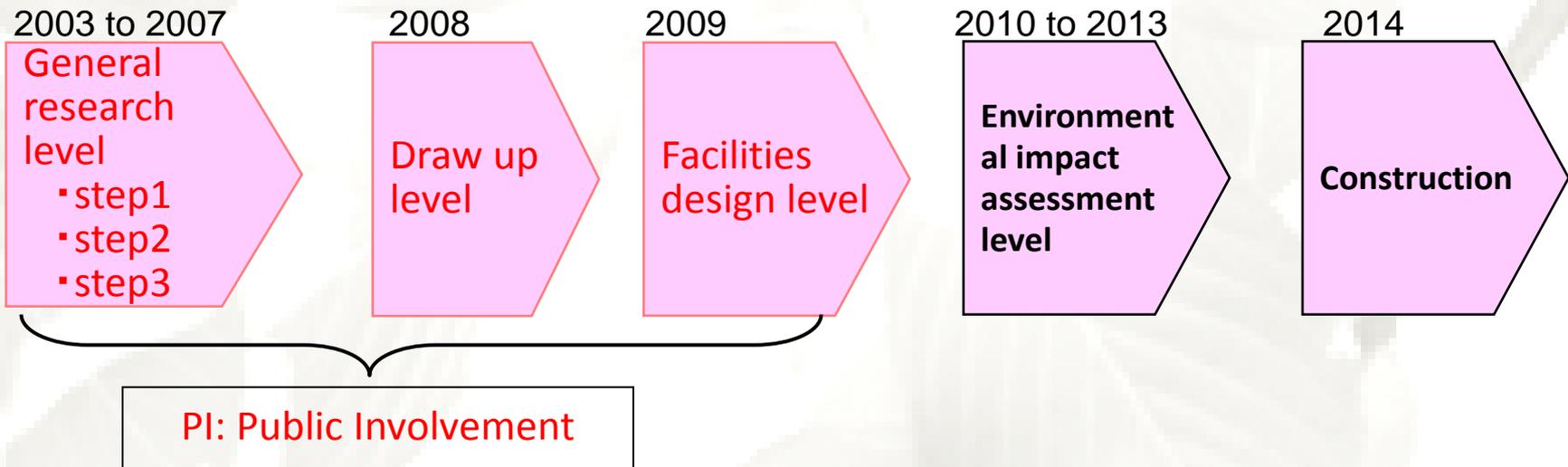
**Example:**  
**Activities of Eco-Airport in Japan and ASEAN Countries**



## Planning Naha Airport Runway Expansion Project - 1

### Flow of PI procedure

- PI was applied from the beginning of project

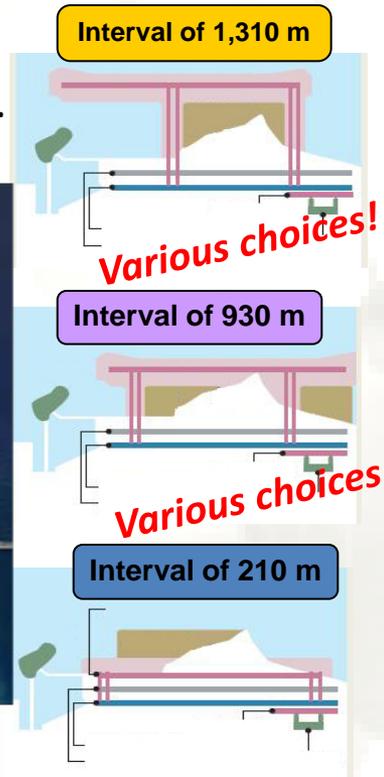




## Planning Naha Airport Runway Expansion Project - 2

How to take a proper care of environmental aspect on this phase?

- PI was applied to determine the location of new runway.
- 3 proposals of locations were discussed.



- Overall evaluation on expansion effect, costs, environmental load, etc.
- 1,310m was the cheapest and less environmental load.
- Integrated plan of user-friendliness and environmental consciousness at early stage.
- No setback on construction

### Public Involvement

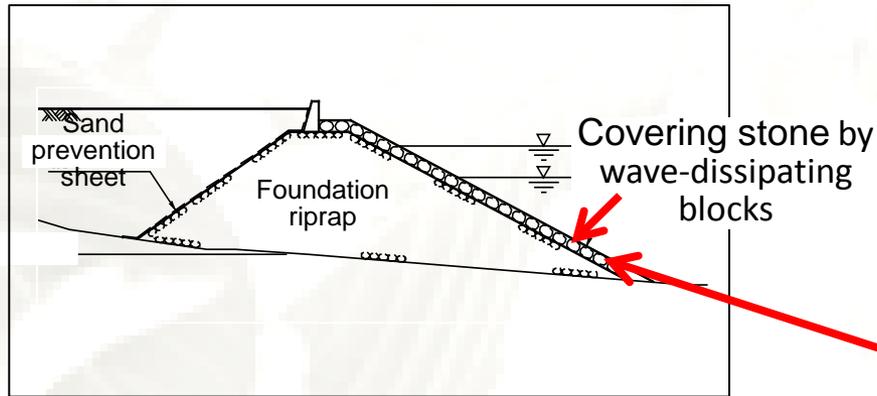




## Construction Naha Airport Runway Expansion Project - 3

### Revetment work

- Creation of marine habitat on gentle slope
- Special wave-dissipating block for easy epiphyte



Cross section of gentle slope



Wave-dissipating blocks with uneven surface



Corals attached to wave-dissipating blocks





## Construction Naha Airport Runway Expansion Project - 4

### Key environmental measures

#### Monitoring committee



- Established monitoring committee
- Consisted by academics and local government

- Preservation and transplantation of important species
- Creation of new bio-base



- Transplant by special sampling container
- Stable after 1 or 2 months



1~2 months after transplantation





Operation & Management

Activities of Eco-Airport in JAPAN and ASEAN Countries

Concepts of Eco-Airport

- Environmentally-friendly airport
- Voluntary environmental policy/measures at or around the airports
- The government formulates “Eco-Airport Guideline”
- The Eco-Airport Council of each airport formulates an annual Environmental Plan and takes initiatives
- Improvement of the country’s image (an airport is the gateway to the country) -> Ecology
- Reduction of operation costs by saving energy at airports ->

Economy

**Double ECO**



Operation & Management

Activities of Eco-Airport in JAPAN and ASEAN Countries

Purpose of survey

- To ascertain and share progress in the implementation of Eco-Airport measures

Flow of establishing a sustainable Eco-Airport management

1  
*Eco-Airport  
Guideline (EAG)  
approved in 2008*

2  
*Preparation of  
**plans and  
implementation**  
of measures  
**Now!***

3  
***PDCA**  
implementation*

4  
*Establishing eco-  
airports in ASEAN  
countries (**Building  
sustainable  
systems**)*



Operation & Management

Activities of Eco-Airport in JAPAN and ASEAN Countries

Results of survey

**Term** : Feb. 2013 to Mar. 2014

**Subject** : 18 airports in all 10 ASEAN countries

1. Questionnaire survey

| Rates for measures introduced                | Done | Done + Planning |
|--|------|-----------------|
| •organizational structure<br>(3measures)     | 30%  | 71%             |
| •operation & management<br>(14measures)      | 45%  | 68%             |
| •building/facility/equipment<br>(39measures) | 37%  | 40%             |

**Progress differs from airport to airport**

2. Field survey



Wastewater facility



Greening wall



Sensor-based water faucet



Solar panel

**Good Practices**

Future measures

-To promote the Eco-Airport measures and managements, ASEAN countries and Japan will share new technologies and each airport's problems and solutions.



Operation & Management

Activities of Eco-Airport in JAPAN and ASEAN Countries

Sustainable management

Plan

"Airport Environmental Plan" → 1. PLAN

Act

Review of the Plan  
→ 4. ACT

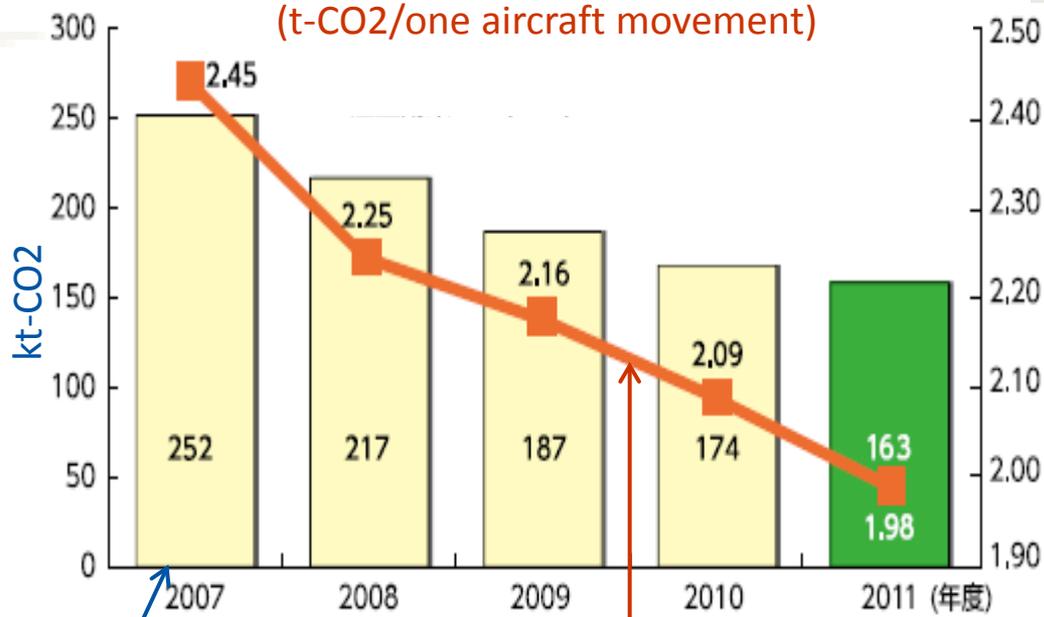
Do

Implementation of the Plan → 2. DO

Check

Mid-Term Evaluation  
→ 3. CHECK

Trends in CO2 reduction  
(t-CO2/one aircraft movement)



Bars: Total CO2 emissions

Lines: Basic unit of CO2 emissions per one aircraft movement

Reference: Centrair Green Report 2012, Central Japan International Airport Co., Ltd.

- Monitoring is important for sustainable management.
- The review is conducted every year, 5 years, or 10 years.



# ← Conclusion

## Ex: Naha Airport Runway Expansion Project

- ◆ Overall evaluation based on the expansion effect, costs, environmental load and other factors as indicators.
- ◆ Project created integrated plan of user-friendliness and environmental consciousness from an early stage, and could embark on the construction with no setback.

## Ex: Environmental Measures Taken for Naha Airport Runway Expansion Project

- ◆ Water pollution prevention, conservation/transplantation of marine, creating habitats for epiphytes were conducted.
- ◆ Despite various constraints are imposed on the builders, such as limited working spaces and severe weather conditions, the safe and smooth construction has been underway.

## Ex: Activities of Eco-Airport in Japan and ASEAN Countries

- ◆ To elicit effects of environmental impact mitigation by Eco-Airport initiatives, it is important to create the PCDA cycle for the continual improvement.

Planning

Construction

Operation & Maintenance



*Thank you for your  
attention.*

