Japan’s Measures on Climate Change and Ocean

Oct. 15, 2019

Director, Office of Global Environment and Decarbonizing Innovation, Global Environment Bureau, Ministry of the Environment

Keiko YOSHIKAWA
Overview of the Act on Promotion of Global Warming Countermeasures

1. Aim of the Act

It is a task shared by all humankind to stabilize the GHG concentration in the atmosphere and to prevent global warming. Japan advances global warming countermeasures through measures such as those promoting reduction of GHG emissions due to socioeconomic activities.

2. Development of the base for comprehensive and systematic advancement of global warming countermeasures

- Formulate the Plan for Global Warming Countermeasures *Check the progress annually. Make a review once in every three years.
- Establish the Global Warming Prevention Headquarters (Chairman: Prime Minister, Vice Chairman: Chief Cabinet Secretary, Minister of the Environment, and Minister of Economy, Trade and Industry)

3. Individual measures for GHG emission control, etc.

- National and local government’s action plans
  - Plans for reducing GHG emissions from the administration and undertakings of national and local governments
  - Prefectures and core cities, etc. and bigger cities have the obligation to formulate plans for measures such as GHG emissions control in accordance with the social and natural conditions of their local areas including promotion of natural energy and improvement of the convenience of public transportation
  - Urban planning and plans for agricultural promotion regions should be linked to the execution plans
- Promotion centers for climate change action, etc.
  - Japan Center for Climate Change Action (designated by the Minister of the Environment)
    Designate the Japan Center for Climate Change Actions
  - Prefectural promotion centers for climate change action (designated by prefectural governors, etc.)
    Prefectural governors, etc. designate the Climate Change Action Officers
- Guidelines for emissions control, etc.
  - Control of business emissions (introduction of high-efficiency equipment, minimizing the use of air conditioning, rational use of office equipment, etc.)
  - Control of daily emissions (promotion of visualization of CO2 regarding products, promotion of 3R, etc.)
  - The national government announces effective implementation guidelines of such emissions control

4. Other

Trading scheme of the Kyoto Mechanism (quota account inventory, etc.)
Chapter 1: Basic Concept

**Vision:** Proclaiming a “decarbonized society” as the ultimate goal and aiming to accomplish it ambitiously as early as possible in the second half of this century, while boldly taking measures towards the reduction of GHGs emissions by 80% by 2050. An unconventional vision of an “ideal future model” contributing to the achievement of the long-term goals of the Paris Agreement, including efforts to limit the temperature increase to 1.5°C.

**Basic Principles of Policy:** Realizing “a virtuous cycle of environment and growth” towards the vision with business-led disruptive innovation, Swift implementation of actions from now, contributing to the world, Action Towards a bright Society with Hope for the Future.

Factors: Achievement of SDGs, Co-creation, Society 5.0, the Circulating and Ecological Economy, leading country in solving problems.

Chapter 2: The Vision of Each Sector and the Direction of Measures

1. **Energy**
   - Pursuing every option for promoting energy transitions and decarbonization

2. **Industry**
   - Decarbonized manufacturing

3. **Transport**
   - Contribution to the challenge of “Well-to-Wheel Zero Emission”

4. **Community and Living**
   - Realizing carbon neutrality, resilient and comfortable communities and lives by 2050, creating the “Circulating and Ecological Economy”

5. **Measures for Carbon Sinks**
   - Conserving the natural environment and creating sustainable new values in agriculture, forestry and fisheries industries to secure sufficient carbon sink for decarbonized society.
Chapter 3: Cross-sectoral Measures to realize “a virtuous cycle of environment and growth”

1. **Promotion of Innovation**
   Promoting innovation for practical application and wider usage of cross-sectoral decarbonization technologies that lead to drastic reduction of GHG, achieving cost that allows commercialization
   (1) Progressive environment innovation strategy
   (2) Innovation in economic and social systems/Lifestyle innovation

2. **Promotion of Green Finance**
   Appropriate “visualization” of innovation, and mobilization of finance for the innovation by financial institutions
   (1) Mobilizing green finance through TCFD※ disclosures and dialogues
      ※ Task Force on Climate-related Financial Disclosures
   (2) Promoting initiatives to expand ESG finance

3. **Business-led International Application and International Cooperation**
   Promoting environmental technologies and products that excel/
   Promoting “Co-innovation” that benefits both sides in collaboration with partner countries
   (1) International application of decarbonization technologies
      linked to policy / institution building and international rule-making
   (2) Increasing infrastructure development and investment that contributes to CO₂ emissions reduction
   (3) Building platforms for decarbonized societies on a global scale

Chapter 4: Other Measures
- Human resource development
- Just transition
- Government-led initiatives
- Integrative promotion in collaboration with development of a resilient society by adaptation to climate change
- Carbon pricing (expert-driven technical debate is necessary)

Chapter 5: Review and Implementation of Long Term Strategy
- **Review:** Flexibly considering of the long-term strategy taking circumstances into account and as necessary reviewing it, about every 6 years
- **Implementation:** Analysis that takes future change in situation into account/Partnerships/Dialogue.
1. Comprehensive Adaptation Programme

- Decide roles of national and local governments, private sectors, and citizens to promote climate change adaptation.
- National government shall formulate **National Adaptation Plan (NAP)** to promote adaptation in all sectors.
- MOE shall implement **climate change impact assessments, every 5 years**. The NAP needs to be revised accordingly.

**Promote effective adaptation measures in various fields based on reliable scientific information**

<table>
<thead>
<tr>
<th>Agriculture, Forestry, Fisheries</th>
<th>Natural Disasters</th>
<th>Human Health</th>
<th>Industries and Economic Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Environment and Resources</td>
<td>Natural Ecosystems</td>
<td>City and Life of Citizens</td>
<td></td>
</tr>
</tbody>
</table>

2. Information Platform

- The National Institute for Environmental Studies (NIES) operates Climate Change Adaptation Platform (A-PLAT) as center of excellence.
- NIES gives technical advice and assistance to local gov'ts and centers

3. Adaptation in Local Areas

- Local gov'ts are asked to;
  - Formulate **Local Adaptation Plans**.
  - Designate **Local Adaptation Center** for climate change data collection and provision locally.
  - Organize **Regional Councils** to promote adaptation measures in a cooperative manner with neighbor local governments.

4. International Actions and Business

- Promote International cooperation.
- Promote adaptation business.
# National Adaptation Plan (Basic Direction)

## Objective

**Prevention/reduction of Climate-related impacts**
- Stabilization of people’s life
- Sound development of society & economy
- Preservation of Natural environment

**Society ensuring safety, security and sustainability**

## Period

Planning for next 5 years considering long-term perspective until the end of 21st century

## Key strategies

1. **Mainstreaming adaptation into government policies**
2. **Promotion of the Climate Change Adaptation based on scientific findings**
3. **Gathering information/knowledge from researchers and institutes and developing information infrastructure**
4. **Promotion of adaptation considering local background**
5. **Deepening understand of people and promoting adaptation action in each business sector**
6. **Contribution for capacity enhanced in the developing countries**
7. **Securing close relationship and collaboration among the relevant government agencies**

## Progress management

- Submission to the Central Environment Council
- Assessment by 2020
- Follow-up every year by PDCA cycle
- Grasp of effectiveness to blush up the method

## Role & Responsibility of each actor

**National government**
- To promote the various actors’ adaptation in each subject
**Local government**
- To promote adaptation policies in local area
**Business**
- To introduce adaptation action in each business sector
**Citizens**
- To take adaptation action

**The National Institute for Environmental Studies (NIES)**
- To develop information infrastructure
- To provide technical support for local authorities
Impacts of sea level rise in Japan

- No clear increasing trend is observed in the sea areas around Japan in the period 1906 - 2018.
- Quantitative attribution to global warming is difficult because the sea level depends on many factors. (excerpts from Integrated report on observation, projection and impact assessment of climate change 2018)

- The future sea level rise can increase the risk of storm surges.
- Tourism business can be damaged if beaches disappear because of the sea level rise. (excerpts from National Adaptation Plan)

Projected disappearance rate of beaches at the end of 21st century

With dedicated mitigation measures (RCP2.6)

Without dedicated mitigation measures (RCP8.5)

Beach disappearance rate maps displayed by A-PLAT (an information platform operated by National Institute for Environmental Studies)
Impacts of sea water temperature increase in Japan

• Global average sea surface temperature is rising at the pace of 0.54 °C per 100 years.
  (Japan Meteorological Agency: Right figure)

• Changes in distribution, migration patterns and catches of fishery products, which is probably attributed to sea water temperature increase, are reported.
  *Estimates of Impacts on fish catches have large uncertainties because of factors unrelated to global warming such as resource management, etc.

• Impacts on cultivation of scallops, oysters, seaweeds, etc. are reported, and adaptation measures are considered.
  *Yields depend on various factors in addition to sea water temperature increase due to climate change.

(excerpts from Integrated report on observation, projection and impact assessment of climate change 2018)

Changes in the catche of sagittated calamaries between August and November in the sea areas around Japan (MAFF, 2015)

Left: Delay in the starting of production of Nori (seaweed) due to higher sea water temperature in Autumn. Right: Decreasing production of Nori (MAFF, 2015)
Measures to Conserve Coral Reef

Coral reefs support regional economies of tropical/subtropical regions
- Fisheries, tourism resources, nurture of regional culture, natural breakwater function
- The value of coral reefs in Japan is at least 239.9 billion yen/yr.

Coral reefs are very vulnerable ecosystems
- Worldwide coral bleaching has been under way since 2015.
- It happened in Japan in 2016. Over 90% of coral reefs has been bleached in Sekisei Lagoon.
- Considering temperature rise and increase of coral bleaching, urgent measures are needed for critical coral reef ecosystems.
- Aichi Target: minimize artificial pressures on vulnerable ecosystems such as coral reefs.

Int. measures
- Promoting the International Coral Reef Initiative (ICRI)
- Promoting information gathering on East Asia region to share with Global Coral Reef Monitoring Network (GCRMN)

Domestic measures

⇒ Three focused challenges to address by FY 2020: "Countermeasures against land originated load" / "Promote sustainable tourism" / “Build relationship between people and coral reefs“

⇒ Implementing three on-site model projects to address the three challenges, conducting climate-change vulnerability assessments in three coral reefs etc.
### Marine Protected Area (MPA) of Japan

#### Aichi Biodiversity Target

Conserve 10% of marine area as protected areas by 2020

#### Japan’s Target

- **The National Biodiversity Strategy of Japan 2012-2020**
- **The 3rd Basic Plan on Ocean Policy**
  Designate 10% of marine jurisdictional area as protected areas by 2020, and protect and manage adequately

#### Marine Biodiversity Conservation Strategy (March, 2011)

**Definition of MPA of Japan** (approved by National Ocean Policy Secretariat in 2011)

- The clearly designated area managed by law or other effective method with consideration of its use to conserve biodiversity and sustainable use of ecosystem.

#### The area applied as MPAs in Japan

- The total area is approx. **369K km²** (except overlapping area), about **8.3%** of marine jurisdiction area (Territorial water and EEZ)
- Breakdown: MPAs for nature conservation: approx. **21K km²** (about 0.5%), MPAs for fishery management: approx. **364K km²** (about 8.1%)
Asia-Pacific Adaptation Information Platform (AP-PLAT)

- AP-PLAT was established on 16th June, 2019 during G20 Ministerial Meeting.
- A website opened to share the scientific knowledge including climate change impact assessment (Based on the Japan’s Information Platform “A-PLAT” established in Aug. 2016)
- AP-PLAT also explores practical partnership aiming to enable environment for climate change risk informed decision making and practical adaptation action.
- Providing the latest scientific climate risk information and supporting adaptation planning and project formulation in collaboration with the partner countries and organizations.

Three Core Pillars of actions in cooperation with the Partners

1. Develop scientific knowledge/information
2. Showcase supportive tools for adaptation
3. Capacity Building on adaptation planning and project formulation

Extend to Asia Pacific area
**International Vision ・ Framework**

1. **Osaka Blue Ocean Vision (G20 Osaka Summit)**
   - Aim to reduce additional pollution by marine plastic litter to zero by 2050
2. **G20 Implementation Framework for Actions on Marine Plastic Litter (Ministerial Meeting)**
   - A new effective framework where each country—including developing/emerging countries—implements voluntary measures.

**Japan’s Domestic Plan ・ Strategy**

1. **Resource Circulation Strategy for Plastics (May, 2019)**:
   - Strategy to comprehensively promote resource circulation for plastics by setting a top level, ambitious “Milestone” as the course of action.
   - Effective measures to realize a world without additional pollution.
3. **Basic Policy on the Promotion of Measures Against Articles that Drift Ashore (May, 2019)**:
   - Treatment of articles that drift ashore and control of waste generation to preserve coastal landscape and environment.

---

<table>
<thead>
<tr>
<th>Reduce/Convert to Substitute Materials</th>
<th>Convert to Substitute Materials</th>
<th>Reduce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aid for converting to substitute materials</td>
<td>Aid for converting to substitute materials</td>
<td>Initiatives within industrial circles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recycle/Resource Circulation</th>
<th>Establish Domestic Resource Circulation System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aid for constructing recycling facilities</td>
<td>Initiatives of Industrial Circles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measures Against Marine Plastic Litter in Japan</th>
<th>International cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aid for the processing of waste articles that drift ashore</td>
<td>International cooperation on waste management and recycling:</td>
</tr>
<tr>
<td>Measures Against Floating Litters, etc</td>
<td>ASEAN +3 Marine Plastics Debris Cooperative Action Initiative:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>National Movements/Awareness Rising</th>
<th>Plastics Smart</th>
<th>Marine Plastic Public Private Innovation Partnership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastics Smart</td>
<td>Marine Plastic Public Private Innovation Partnership</td>
<td>UMIGOMI Zero Week</td>
</tr>
<tr>
<td>Plastics Smart Forum</td>
<td>UMIGOMI Zero Week</td>
<td>UMIGOMI Zero Award</td>
</tr>
</tbody>
</table>
Circulating and Ecological Economy

Mountainous, agricultural and fishing villages
- self-reliant and decentralized society
  - circulation of regional resources [natural, material, human, financial]
  - local production for local consumption
  - introduction of renewable energy

Forests

Cities
- self-reliant and decentralized society
  - circulation of regional resources [natural, material, human, financial]
  - local production for local consumption
  - introduction of renewable energy

Rivers

Country side

Multi-dimensional functions:
- Biodiversity
- Renewable energy
- Ecosystem-based adaptation / Disaster Risk Reduction

Multi-stakeholders
- National/Local governments
- Industries
- Academia
- Citizens

Each region demonstrates its strengths by utilizing its unique characteristics
- Makes use of regional resources and builds a self-reliant and decentralized society
- Complements and supports one another according to unique characteristics of each region