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Ministry of the Environment

Climate Change Adaptation Policies and Programmes in Japan

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Climate Change Adaptation Act

1. Comprehensive Adaptation Programme

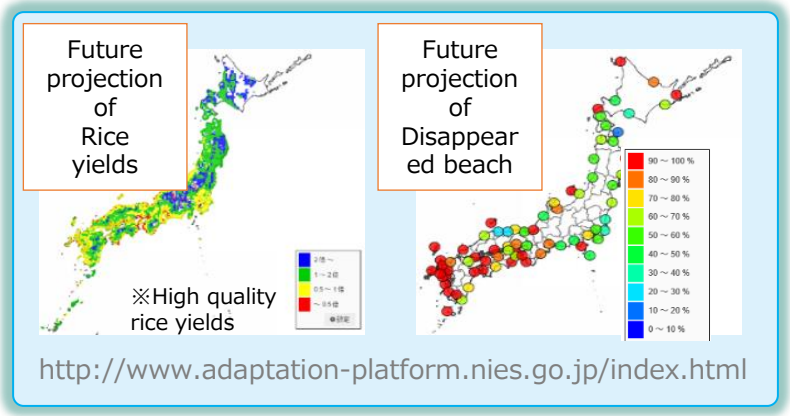
- Decide roles of national and local governments, private sectors, and citizens to promote climate change adaptation.
- National government shall formulate **National Adaptation Plan (NAP)** to promote adaptation in all sectors.
- MOE shall implement **climate change impact assessments, every 5 years**.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

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

Agriculture, Forestry, Fisheries	Natural Disasters	Human Health	Industries and Economic Activity
Water Environment and Resources	Natural Ecosystems	City and Life of Citizens	

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.

Climate Change Impact Assessment in Japan (Summary)

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Sector	Category	Sub-category	Significance (RCP2.6/8.5)	Urgency	Confidence
Agriculture Forest/, Forestry, Fisheries	Agriculture	Paddy field rice	●/●	●	●
		Vegetables, etc.	◆	●	▲
		Fruit trees	●/●	●	●
		Barley/wheat, soybean, feed crops, other crops	●	▲	▲
		Livestock farming	●	●	▲
		Plant pests, weeds, etc.	●	●	●
		Water, land and agricultural infrastructure	●	●	●
		Food supply and demand	◆	▲	●
	Forest/Forestry	Timber production (e.g., plantations)	●	●	▲
		Non-timber forest products (e.g., mushrooms)	●	●	▲
	Fisheries	Migratory fish stocks(ecology of fishes)	●	●	▲
		Propagation and aquaculture	●	●	▲
		Fishery environments in coastal areas and inland waters, etc.	●/●	●	▲
Water Environment, Water Resources	Water environment	Lakes, marshes, dams (reservoirs)	◆/●	▲	▲
		Rivers	◆	▲	■
		Coastal zones and closed sea areas	◆	▲	▲
	Water resources	Water supply (surface water)	●/●	●	●
		Water supply (groundwater)	●	▲	▲
		Water demand	◆	▲	▲
Natural ecosystems	Terrestrial ecosystems	Alpine/subalpine zone	●	●	▲
		Natural forests, secondary forests	◆/●	●	●
		Countryside-landscape ("satochi-satoyama")	◆	●	■
		Planted forests	●	●	▲
		Damage from wildlife	●	●	■
		Material ballance	●	▲	▲
	Freshwater ecosystems	Lakes, marshes	●	▲	■
		Rivers	●	▲	■
		Marshlands	●	▲	■
	Coastal ecosystems	Subtropics	●/●	●	●
		Temperate, subarctic	●	●	▲
	Marine ecosystems		●	▲	■
Natural ecosystems	Others	Phenology	◆	●	●
		Shifts in distribution and populations (Endemic)	●	●	●
		Shifts in distribution and populations (Exotic)	●	●	▲
	Ecosystem services		●	–	–
		Nutrient and turbid material retention functions in watersheds	●	▲	■
		Supply of fisheries resources by coastal seagrass ecosystems	●	●	▲
		Eco-DRR functions of coral reefs	●	●	●
		Recreational functions related to natural ecosystems	●	▲	■

Note: For some categories, urgency has been assessed separately for RCP2.6/ RCP8.5 senarios.

Sector	Category	Sub-category	Significance (RCP2.6/8.5)	Urgency	Confidence
Natural Disasters, Coastal Areas	Rivers	Floods	●/●	●	●
		Inland waters	●	●	●
	Coastal areas	Sea-level rise	●	▲	●
		Storm surges, high waves	●	●	●
		Coastal erosion	●/●	▲	●
	Mountain areas	Debris flows, landslides, and other disasters	●	●	●
	Others	Strong winds, etc.	●	●	▲
	Impacts of complex disasters				
Human health	Winter warming	Mortality in winter season	◆	▲	▲
	Heat stress	Risk of mortality, etc.	●	●	●
		Heat illness, etc.	●	●	●
	Infectious disease	Water- and food-borne diseases	◆	▲	▲
		Vector-borne infectious diseases	●	●	▲
		Other infectious diseases	◆	■	■
	Others	Complex impacts of warming and air pollution	◆	▲	▲
		Impacts on vulnerable populations (elderly, children, persons with underlying health conditions, etc.)	●	●	▲
		Other health impacts	◆	▲	▲
Industrial / Economic Activities	Manufacture	—	◆	■	■
		Food manufacturing industry	●	▲	▲
	Energy	Energy supply and demand	◆	■	▲
	Commerce		◆	■	■
		Retail industry	◆	▲	▲
	Finance, insurance		●	▲	▲
	Tourism	Leisure	◆	▲	●
		Leisure industry based on natural resources	●	▲	●
	Construction		●	●	■
	Medical		◆	▲	■
	Others	Others (overseas impacts)	◆	■	▲
	Others	Others	–	–	–
Life of Citizenry, Urban Life	Urban infrastructure, critical services	Water supply, transportation, and others	●	●	●
	Life with sense of culture and history	Phenology, traditional events/ local industry (Phenology)	◆	●	●
		Phenology, traditional events/ local industry (Local industry)	–	●	▲
	Others	Impacts on life due to heat stress, etc.	●	●	●
Inter-sectoral Impact Linkages	Impacts of disruptions of urban infrastructure and critical services				

Legend

Significance

- ● : Recognized as having particularly significant impacts
- ◆ : Recognized as having impacts
- – : N/A (cannot currently be assessed)

Urgency and Confidence

- ● : High
- ▲ : Medium
- ■ : Low
- – : N/A (cannot currently be assessed)

Indicates that changes and/or updates have been made in categories and/or assessment results since the first impact assessment.

Assessment of significance and/or urgency has been revised upwards

New category added for this assessment

Adaptation legislation

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Central Government

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Vertical Integration

Various Line Ministries

Horizontal Integration

Climate Change Adaptation Act

Tackle

Various / Specific Climate Change Risks

Local Government

Promotion of Climate Change Adaptation in Japan
under the Leadership of the Ministry of the Environment

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Government initiatives

- **Establishment of a new Climate Change Adaptation Promotion Council, chaired by the Minister of the Environment and consists of top officials from concerned ministries and agencies**

- Establishment of a close coordination system among concerned ministries and agencies.
- The government takes the initiative and promotes measures on climate change adaptation in a comprehensive and systematic manner.

Climate Change Adaptation Promotion Council

The 1st meeting was held on December 3, 2018.
The 2nd meeting was held on November 25, 2019.
The 3rd meeting was held on September 11, 2020.
The 4th meeting was held on March 24, 2021.

Members

Chair: Minister of the Environment

Vice Chair: Vice-Minister of the Environment

- Cabinet Secretariat
- Cabinet Office
- Financial Services Agency
- Ministry of Internal Affairs and Communications
- Ministry of Foreign Affairs of Japan
- Ministry of Finance
- Ministry of Education, Culture, Sports, Science and Technology
- Ministry of Health, Labour and Welfare
- Ministry of Agriculture, Forestry and Fisheries
- Ministry of Economy, Trade and Industry
- Ministry of Land, Infrastructure, Transport and Tourism
- Ministry of the Environment
- Ministry of Defense

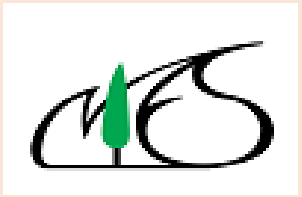
*Administrative works are handled by the Ministry of the Environment.

Role of Government, Local Government and Research Institutes

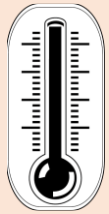
Government

- Promote adaptation measures in all sectors based on National Adaptation Plan (NAP).
- Support local governments adaptation measures.

Research Institutes (NIES and Local Climate Change Adaptation Centers)



- Provide climate change impacts and adaptation Information.
- Technically support planning and implementation of adaptation measures.



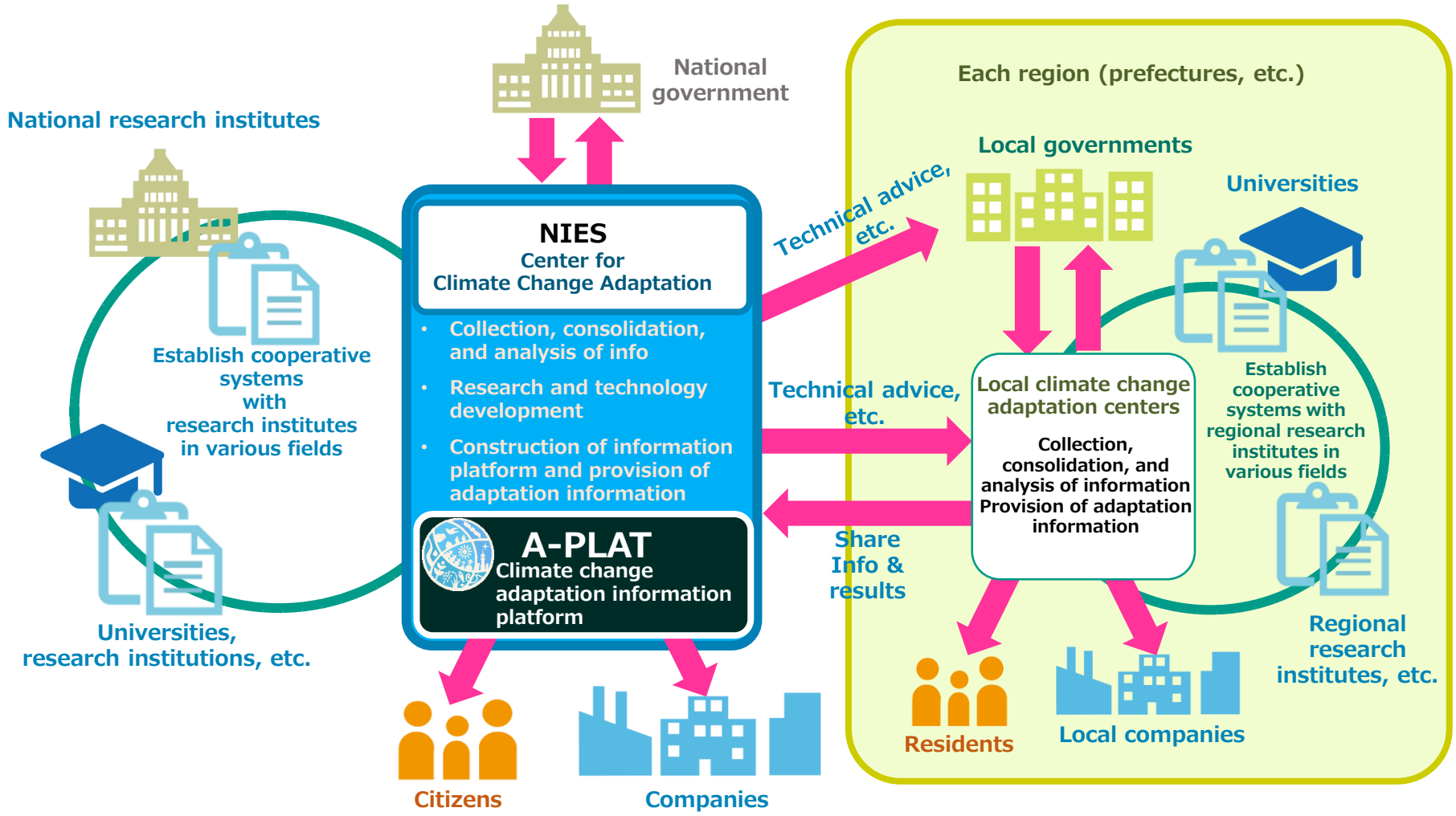
Local governments (Prefectural governments and municipal governments)

- Promote planning and implementation of adaptation measures considering local circumstances.

National Institute for Environmental Studies (NIES)
- Center of Information Infrastructure

Initiatives of the NIES

- **Center for Climate Change Adaptation newly established on December 1, 2018**
- Coordinating with research institutes in various fields, the Center consolidates information on the climate change impacts and adaptation measures and develops the infrastructure for initiatives by the national government, local governments, companies and citizens.
- Provides technical advice and support to local governments and local climate change adaptation centers.



Supporting Local Governments: Regional Adaptation Consortium

○ MOEJ- MAFF-MLIT partnership project.
○ 2017-2019 three-year implementation period.
○ Establishment of **Regional Adaptation Consortium** consisted of national and local governments, local research institutions, private sectors etc.
○ Main topics of study and discussion
・Sharing experience and knowledge on adaptation among regional council members.
・Implementation of **impact assessment** on the specific **needs of local governments**.
・Discussion concrete adaptation measures based on scientific findings.

National steering committee

■ composed of MOEJ, MAFF, MLIT and relevant research institutions.
■ supported by Climate Change Adaptation Platform （NIES）

Coordination
Cooperation

Regional councils

○ Promotion of formulation and implementation of concrete adaptation measures in region.
○ Making use of scientific findings to “Second Climate Change Impact Assessment” which will be achieved by 2020.

Research Items in Regional Adaptation Consortium Initiatives (Regional Initiatives - 1)

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Hokkaido and Tohoku Regions

Phase I study	1-1. Study of the impacts on apples by rising temperatures and meteorological disasters	Agriculture
Phase I study	1-2. Study of the impacts on scallop and seaweed aquaculture in enclosed bays due to rising seawater temperatures, etc.	Fisheries
Phase I study	1-3. Study of the impacts on the volume of catches of salmon and so on due to rising seawater temperatures, etc.	Fisheries
Phase I study	1-4. Study of the impacts on the tourism industry due to climate change and extreme weather phenomena	Industrial and economic activity
Phase II study	1-5. Study of the impacts on summer environments of masu salmon due to climate change [Yamagata Prefecture]	Fisheries
Phase II study	1-6. Study of the impacts on the Kushiro-shitsugen water environments and ecosystems due to rising temperatures and changes in precipitation [Hokkaido]	Water environments/ Water resources, Natural ecosystems

Chubu Region

Phase I study	3-1. Study of the impacts on fisheries and biological habitat beds (seaweed beds, eelgrass beds) due to climate change	Fisheries
Phase I study	3-2. Study on the impacts of changes in snowfall and timing of snow melting on water resource management and utilization of groundwater resources	Water environments/ Water resources
Phase I study	3-3. Study of the impacts on freshwater ecosystems, etc. of the Five Lakes of Mikata due to climate change	Natural ecosystems
Phase II study	3-4. Assessment of the impacts on the development of Noto-Dainagon Azuki beans due to climate change [Ishikawa Prefecture]	Agriculture
Phase II study	3-5. Assessment of disaster risks due to increases in localized torrential rain [Nagoya]	Natural disasters/ Coastal areas

Scallops (Source: Aomori Prefectural Fisheries Research Institute)(Study 1-2.)

Regional Adaptation Consortium Initiatives

Promoting effective adaptation measures by enriching knowledge on regional resources, etc.

Kanto Region

Phase I study	2-1. Study of the impacts on tea cultivation due to high temperatures and low precipitation in summer	Agriculture
Phase I study	2-2. Assessment of flood risks in urban area with consideration toward increased rainfall and changes in socioeconomic conditions	Natural disasters
Phase I study	2-3. Assessment of the impacts of climate change on Inba-numa Lake and its watershed and methods to manage the watershed	Natural disasters, Water environments
Phase I study	2-4. Assessment on risk of arthropod-borne infectious diseases	Health
Phase I study	2-5. Development and creation of assessment methods for the risk of heatstroke	Public health/ urban life
Phase II study	2-6. Study of the impacts on alpine and subalpine ecosystems due to climate change [Gunma Prefecture]	Natural ecosystems
Phase II study	2-7. Study of the impacts on wetland environments due to climate change [Niigata]	Water environments / Water resources, Natural ecosystems

Five Lakes of Mikata (Source: Fukui Prefectural Satoyama-Satoumi Research Institute) (Study 3-3.)

Tea fields (Source: City of Fuji) (Study 2-1.)

Research Items in Regional Adaptation Consortium Initiatives
(Regional Initiatives - 2)

Kinki Region		
Phase I study	4-1. Study of the impacts on Tamba black soybeans due to changes in precipitation, etc.	Agriculture
Phase I study	4-2. Study of the impacts on Japanese sand lance stocks due to rising seawater temperatures, etc.	Fisheries
Phase I study	4-3. Study of the impacts on salt water moving upstream in rivers due to sea level rise, etc.	Water environments / Water resources
Phase I study	4-4. Study of the impacts on upland wetland biological communities due to climate change	Natural ecosystems
Phase I study	4-5. Study of the impacts on urban life due to increasing heat stress	Public health / urban life
Phase II study	4-6. Study of the impacts on water environments of Lake Biwa due to climate change [Shiga Prefecture]	Water environments / Water resources

Tamba black soybeans (Source: Hyogo Prefecture website)
(Study 4-1.)

Hiroshima Beef (Source: Hiroshima Prefecture website)
(Study 5-2.)

Ariake Sea (Source: Kyushu Environmental Evaluation Association)
(Study 6-1.)

Regional Adaptation Consortium Initiatives

Promoting effective adaptation measures by enriching knowledge on regional resources, etc.

Chugoku and Shikoku Regions		
Phase I study	5-1. Study of the impacts on pear cultivation due to warmer winters	Agriculture
Phase I study	5-2. Study of the impacts on livestock growth and breeding rates due to rising temperatures	Agriculture
Phase I study	5-3. Study of the impacts on organisms in fisheries/aquaculture in Seto Inland Sea due to rising seawater temperatures	Fisheries
Phase I study	5-4. Study of the impacts on water quality, etc. in Lake Shinji and Nakaumi due to climate change	Water environments / Water resources
Phase I study	5-5. Examination of disaster prevention and mitigation (Eco-DRR) adaptation measures utilizing ecosystems	Natural ecosystems, Natural disasters, Agriculture
Phase I study	5-6. Study of the impacts on alpine vegetation and rare plants due to climate change	Natural ecosystems

Kyushu and Okinawa Regions		
Phase I study	6-1. Study of the impacts on fisheries /coastal ecosystems in Ariake and Yatsushiro seas due to climate change	Fisheries
Phase I study	6-2. Assessment of flood risks due to climate change	Natural disasters/ Coastal areas
Phase I study	6-3. Analysis of causes of heatstroke and examination of preventive actions	Public health/ urban life
Phase II study	6-4. Study of the impacts on Kashibaru Wetland ecosystems due to climate change [Saga Prefecture]	Natural ecosystems
Phase II study	6-5. Study of the impacts on sweat peas due to climate change [Miyazaki Prefecture]	Agriculture

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