

Charting the effects of global warming and adaptive measures

Compiling and enhancing charts of the effects of global warming and adaptive measures
Based on a participatory model by JSCE as a whole, using the Internet, etc.

- Collect the knowledge and experience of persons involved in a wide range of areas
- Raise awareness of the effects of global warming and adaptive measures through the participation of many persons
- Develop new adaptive measures by compiling and enhancing charts
- Develop tools that can be used in various settings including practical operations, education, and research

Chart of effects and adaptive measures (example)

Phenomena caused by global warming	Phenomena	Effects	Adaptive measures
Rising air and water temperatures	Waste-related	Massive amounts of carbon dioxide emitted in recycling PET bottles	Discontinue recycling PET bottles
	Urban life	Increasing use of cooling equipment and decreasing use of heating equipment	Dissipate heat by sprinkling treated wastewater and groundwater
			Dissipate heat by planting trees
	Rural life	Land suitable for production is changing	Vitalize waterfront tourism industry
			Change farmland utilization
		Accelerated timing of cultivation	Breed new varieties of crop seeds
Decreasing snowfall and snow accumulation	Water supply	Accelerated timing of snow melting	A decision support system for agricultural crops that are suitable to the climate conditions
			Plant trees as windbreaks and shades
			A device to operate dam reservoirs
Urban life	Decrease in albedo (ratio of reflected to incident light)	Review water rights	
		Adjust agricultural work according to the seasons	
		Control snow removal	
Changing rainfall patterns 1 (measures for droughts)	Water supply	Increasing draught risk	For the tourism industry, actively use artificial snow
			Use recycled water in homes and buildings
			Use recycled wastewater
Wastewater processing	Increasing demand for recycled wastewater	Dam operation using high technology	
		Develop and apply advanced wastewater processing technology	
		Develop systems and standards to promote the use of treated rainwater	
Changing rainfall patterns 2 (measures for flooding due to torrential rains)	Water-related disasters (drainage basins, rivers)	Increasing flooding	Make efforts to increase the capacity of facilities, including levees and dams
			Concentrated measures for core function areas
		Increasing flooding risk	Divide flood hazard areas into blocks to prevent flood water from spreading
			Improve the disaster management support system and construct a disaster management network to provide against flood damage
			Improve the accuracy of rainfall forecast
Rising sea levels	Urban life	Increasing zero-meter zones, and decline in land prices	Increase the height of buildings
			Construct high-specification levees
			Increase the height of riverbanks
			Construct elevated land
			Increase the capacity of draining water in the areas protected by levees
Northward expansion of public health inspect pests	Rural life	Dengue fever, malaria, and others	Eliminate pools of water without fish
			Avoid damage to agricultural crops
Issues deriving from the relationship to mitigative measures (especially energy saving measures)	Water-related disasters (drainage basins, rivers)	Urban development of low-carbon and flood damage-adaptive type (such as "Lake Town" and intensive type urban development)	
	Water supply	Upstream water intake and water supply by gravity	
			Micro hydropower generation
	Waste-related	Use of biogases	
			Convert waste into solid fuel
			Convert waste into bioethanol
	Urban life	Use groundwater and treated wastewater to sprinkle on the buildings to cool them	
			Plant trees along urban rivers and construct parks and greenways to form greenery networks for wind to pass through

Describing the effects and adaptive measures regarding each of the phenomena caused by global warming

Phenomena caused by global warming

- Rising air and water temperatures
- Decreasing snowfall and snow accumulation
- Changing rainfall patterns (measures for droughts)
- Changing rainfall patterns (measures for flooding due to torrential rains)
- Changes in typhoons and high tides
- Compound disasters
- Rising sea levels
- Northward expansion of public health inspect pests
- Issues deriving from the relationship to mitigative measures (especially energy saving measures)

Subject areas

- Water-related disasters
 - Drainage basins (rivers)
 - Coastal areas
- Water supply
- Wastewater processing
- Waste-related
- Water environment
- Urban life
- Rural life
- Small island states
- Others

Comments were given on 300 types of adaptive measures to mitigate 150 types of effects caused by global warming.

We continue to seek comments to further develop the options of ensuring the creation of sustainable society based on smart choice and persistent adaptation.