

Republic of Korea

3. Drought (Focal point: Nation Emergency Management Agency)

General

There are many drought occurrences in dry seasons, in some part of Korea where it is difficult to secure water supply sources, due to the meteorological and topographical aspects. In terms of meteorology, Korea's annual precipitation is 1,245mm, which is 1.4 times of world's average. However, due to characteristic of the season, two thirds of annual rainfall is concentrated on summer rainy season. Thus, most of drought occurrences in Korea are meteorological droughts due to the shortage of rainfall in dry season. In terms of topography, because of narrow drainage basin of rivers, sharp inclination of basin, and short length of flow channel, huge amount of water is flows out all at once when it rains heavily. This outflow brings about shortage of underground water resources, which causes drought.

Droughts last relatively longer period compared with typhoon or heavy rain, and cause very serious damages, once it occurs. In 1967 and 1968, there were the worst drought damages in the southern Korea causing record-high drought victim households of 365 thousand households. In 2001, drought, which occurred particularly seriously in the middle part of Korea, caused damages in crops in 19,000ha. In addition, 93,615 households nationwide were provided with emergency water supply.

<Table 2> Occurrence of Drought

Year	'67	'68	'72	'77	'78	'80	'82	'88	'94	'97	2000	2001
Duration (Months)	May ~ Jul.	Jan. ~ Jun.	Jun. ~ Jul.	Jun. ~ Aug.	Jan. ~ May	May ~ Jun.	Jan. ~ May	Jun. ~ Aug.	Jun. ~ Jul.	Aug. ~ Sep.	Feb. ~ May	Mar. ~ Jun.
Affected Area (1,000ha)	403	470	14	65	43	6	59	1	140	3	58	19

Legal and Administrative System against Drought

It is projected that drought occurrences in Korea would increase due to i) maximized land utilization in urban areas, ii) increase of impermeability layer due to expansion of industrialization and development, iii) characteristic of precipitation where rainfall is concentrated in summer rainy season, and iv) lack of water reservation facilities in islands, and etc.

Therefore, the Republic of Korea formulated "Framework Act on the Disaster and Safety Management" in 2005 to establish legal foundation of the preparation for various disasters including drought. In accordance with the act, the Korean government established 'the National Disaster and Safety Countermeasures Headquarter (NDSCH)', and local autonomous governments established 'the Local Disaster and Safety Countermeasures Headquarters (LDSCHs)'. These measures are to establish administrative system to prepare for disasters such as drought.

Ministries related to disaster management participate in NDSCH. National Emergency Management Agency takes the leading role to comprehensively administrate the management of all kinds of disasters including drought, in accordance with 'Framework Act on the Disaster and Safety Management'. Ministry of Environment draws up countermeasures for water for living, and Ministry of Agriculture and Forestry for agricultural water. In addition to aforementioned ministries, Ministry of Construction and Transportation and Korea Meteorological Administration are participated in the NDSCH. The LDSCH in each local autonomous government plays role to implement countermeasures drawn by NDSCH and cope with drought effectively.

Countermeasure for Drought

In order to prepare for droughts, the NDSCH, in collaboration with related ministries and agencies including National Emergency Management Agency, Ministry of Environment, and Ministry of Agriculture and Forestry, establishes comprehensive measures for drought. The measures are divided into 3 stages, which are mitigation and preparedness, response, and recovery. The Republic of Korea promotes various countermeasures including,

- Research and study on countermeasures against drought;
- Measures to secure water for agriculture and living;
- Establishment and promotion of mid-long term plan to relieve areas with habitual drought occurrence in rural areas;
- Measures to prevent water pollution during dry season;
- Development of underground water and reinforcement of aftercare and management;
- Promotion and education on water saving.

In order to prepare for drought in the area of living water, various mitigative and preparative measures are promoted, such as mid-long term measures including linking local water supply with wide area water supply for stable water supply, building small scale reservoir for drinking water, and developing water source in rural areas and islands, and water saving measures including installation of water saving devices and waste water reuse system. In case of drought occurrence, the government takes various responses in accordance with the manual. Such measures includes, limited water supply, water supply using water truck, limiting business hour of businesses with large amount of water consumption, and development of emergency well. In addition, after drought, many recovery measures are promoted, including restoration of water supply system, post-management of emergency well, and water quality management.

In the area of agricultural water, the measures are divided into 3 stages, mitigation and preparedness, response and recovery and restoration. In particular, when drought area is spreading, the government actively promotes "3 Movements Campaign for Overcoming Drought" This campaign is to utilize all kinds of available water source most efficiently. The campaign includes the following.

- Reservation: to pump river water and underground water and reserve the water in reservoir, and irrigation channels.
- Water Saving: to promote water saving practices (living, agricultural, and industrial water), and farming that consumes less water.
- Development of Water Source: to develop underground water such as water well, secure

surface water, and dredge reservoirs.