

# LCQ10: Fresh water supply in Hong Kong in times of droughts in Guangdong Province

Following is a question by the Hon Kwok Wai-keung and a written reply by the Secretary for Development, Mr Michael Wong, in the Legislative Council today (June 27):

Question:

At present, 70 to 80 per cent of the fresh water in Hong Kong comes from Dongjiang water. Regarding fresh water supply in Hong Kong in times of droughts in Guangdong Province, will the Government inform this Council:

(1) whether it is stipulated in the Agreement for the supply of Dongjiang water to Hong Kong signed between the Hong Kong Government and the Guangdong Provincial Government that the two governments may discuss the adjustment of quantities of water to be supplied to Hong Kong in times of severe droughts in Guangdong Province; if so, of the details;

(2) whether it has formulated measures to cope with the situation that the supply of Dongjiang water to Hong Kong is inadequate due to severe droughts in Guangdong Province; if so, of the details, and under what circumstances water rationing will be imposed; and

(3) given that the daily water supply of the Tseung Kwan O Desalination Plant, upon completion of its first stage construction works, will only meet around 5 per cent of the daily water consumption of the whole territory, and that global water resources are getting increasingly tight, whether the authorities will study the setting of a target percentage of the fresh water output of the desalination plant in the water consumption at 30 per cent?

Reply:

President,

The Government is committed to maintaining the reliability of water supply in Hong Kong. Currently, the fresh water supply for Hong Kong comprises the imported Dongjiang (DJ) water from Guangdong and rainwater from local water gathering grounds, representing 70 to 80 per cent and 20 to 30 per cent of our total fresh water consumption respectively. The "package deal lump sum" approach has been adopted for the DJ water supply agreements since 2006. This approach enables us to import DJ water as needed according to the amount of local yield collected each year up to an annual supply ceiling. The annual supply ceiling in the current supply agreement is set at 820 million cubic metres (mcm) based on fresh water demand analysis conducted by the Water Supplies Department (WSD) to ensure water supply reliability of 99 per

cent, such that water supply can be maintained round-the-clock even under extreme drought condition with a return period of one in 100 years.

My response to the three parts of Hon Kwok's question is as follows:

(1) and (2) Although the agreement signed between the Hong Kong Government and the Guangdong Provincial Government for the supply of DJ water to Hong Kong does not have provision for the adjustment of supply quantities by negotiation between the two governments in times of severe droughts in the Guangdong Province, the annual supply ceiling of 820 mcm under the current supply agreement represents only about 3 per cent of the annual mean flow of the main stream of DJ. Furthermore, there are three large reservoirs, namely Xinfengjiang Reservoir, Fengshuba Reservoir, and Baipenzhu Reservoir, in the middle-upper stream of the DJ River Basin with a total storage capacity of 17 060 mcm. The storage in these reservoirs can be utilised to balance the flow of DJ, enabling us to import DJ water up to the annual supply ceiling as stipulated in the current supply agreement.

As mentioned above, water supply can be maintained round-the-clock even under extreme drought condition in Hong Kong with a return period of one in 100 years under the current water supply arrangement. If Hong Kong suffers from persistent extremely dry weather leading to insufficient water supply, we will take into account a host of factors including fresh water demand, supply situation of various water resources and rainfall forecast, for implementing appropriate responsive actions, such as imposing restriction on non-essential supplies including landscape irrigation, filling of swimming pools and street cleansing.

(3) Tenders are being invited for the "Design, Build and Operate" contract of the first stage of Tseung Kwan O desalination plant, which is anticipated for commissioning by 2022. The first stage of the desalination plant will have a water production capacity of 135 000 cubic metres per day to meet about 5 per cent of fresh water demand in Hong Kong. There is also provision for future expansion to the ultimate water production capacity of up to 270 000 cubic metres per day if necessary. The Government will study the programme for implementing the second stage of Tseung Kwan O desalination plant having regard to the supply situation of various water resources, water demand forecast and development of desalination technology.

Besides, we are also exploiting two other new water sources which are reclaimed water and recycled grey water/harvested rainwater to supplement the three existing water sources, namely local yield, DJ water and seawater for flushing, thus increasing the water sources from three to six, making water sources in Hong Kong more diversified. Currently, we have no plan on studying if the output of the desalination plant should be set at a target percentage of 30 per cent of the total water consumption. We will conduct regular review on the positioning of the desalination plant and the percentage of its output against the total water consumption based on the supply situation of various water sources, reliability, environmental impact, technological development, sustainability, cost effectiveness and demand for water resources.