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for information

Information Paper on Red Tide

Objective

This information paper advises Members on actions taken by Government to address environmental and health concerns arising from the occurrence of red tides.

Background

2. Red tides, a natural phenomenon caused by a rapid bloom of marine algae, first appeared in the northeastern waters of Hong Kong around Kat O on 18.3.98. It then spread south into Long Harbour and Port Shelter areas and appeared to have subsided in early April. However, on 10.4.98, the red tide resurged at Lamma Island and Lantau Island. It caused substantial fish kills and most of the 1,500 licensed mariculturists suffered losses.

3. Government immediately coordinated inter-departmental actions to clear the dead fish for disposal at landfills. On the other hand, the Finance Committee of the Provisional Legislative Council approved at its special meeting on 23.4.98 Government's proposed financial assistance package for the affected mariculturists.

To Avert the Occurrence of Red Tides

4. The red tide resurged at Lamma Island and Lantau Island on 10.4.98. Mariculturists were immediately warned of the red tide outbreak. They were advised to observe any changes in water quality, the occurrence of red tide and to take precautionary measures to minimise its impact, such as moving their rafts away from red tide water. Nonetheless, this red tide incident caused massive fish mortality in almost all of the 26 fish culture zones in Hong Kong, affecting some 1500 licenced mariculturists.

5. The Agriculture and Fisheries Department (AFD) identified the dominant red tide species in fish culture zones as *Gyrodinium aureolum*, which causes damage to the gills and kills the fish. AFD's daily water sampling of fish culture zones has been ongoing to monitor the algae composition of the water. Mariculturists are therefore duly warned, as is the normal practice, if there are increases in algal abundance which would signify a possible red tide bloom.

Actions to Safeguard the Health of Swimmers and Food Hygiene

6. As far as gazetted beaches are concerned, the established procedures are that the "Red Flag" will be hoisted immediately on sighting of red tide within or in close proximity of the designated swimming area of the affected beach. The "Red Flag" aims to warn public of the presence of red tide and convey the message of "Swimming at this beach is unsafe. Please do not enter the water". At the same time, swimmers will be advised through public address system not to enter the water and notices will be displayed at the beach to advise public of the situation.

7. During red tide events, Regional Services Department (RSD) and Urban Services Department (USD) staff collect water samples from affected beaches and send them to AFD for analysis. Because of the severity and extent of recent red tide bloom, EPD also mobilised resources to collect samples from affected beaches to provide early feedback on beach water quality. Based on that feedback, the beach management authorities decided on the appropriate actions to be taken. Lifeguards at the beach will frequent their patrol and advise public to stay out of water. The Government Information Services will also be informed of the situation and requested to arrange for necessary publicity. The "Red Flag" will only be lowered when there is no further sighting of the red tide in the swimming area and its vicinity.

8. The Department of Health (DH) started sampling seafood from fish culture zones and markets since 20.3.98. Results of their toxicity tests have shown that seafood is safe for human consumption. The DH is continuing with their food surveillance and is keeping the situation under close monitoring. DH participated in various media interviews on the safety of fish consumption and also issued a 'Health Advice on Red Tides' via press release from the Economic Services Bureau. Members of the general public were advised on the following -

- (i) Avoid swimming or coming into the contact of sea water in beaches where red tide bloom is reported. Direct contact with sea water containing the red tide organism may result in symptoms like redness of eyes, itchiness of skin (aerosol may cause asthma-like symptoms).
- (ii) It is safe to eat fresh water fish. As for marine fish, the public are advised to purchase those fish in good condition: intact red gills (魚腮鮮紅), clear eyes (魚眼明亮), firm flesh (魚肉結實有彈性) intact body (身體完整).
- (iii) According to marine experts, fishes affected by the predominate red tide organism, *Gyrodinium aureolum*, may develop haemorrhagic red spots in gills and on the body. Bacterial infections may set in and cause various bruises and lesions on the fish bodies. The fish may decompose and give out unpleasant smell. Fishes with visible sores, dark gills, cloudy eyes and unpleasant smell should be avoided.

9. Similarly, the Urban Services Department (USD) took measures to safeguard public safety and to ensure that fish on sale were fit for human consumption. A press release was issued advising the public to buy marine fish which were in fresh condition. Inspections were conducted to all 1234 fish retail outlets, comprising 423 fresh provision shops and 811 fish stalls in Provisional Urban Council markets. Restaurants and other eating places were inspected and advice was given to the operators on the choice of marine fish.

Preservation of Ecology

10. The question of whether the ecology of HK can be better preserved covers the following two broad areas:

- (i) Whether sufficient action is being taken to reduce the risks of red tides occurring to a minimum (thereby increasing the degree of protection to marine flora and fauna).

Government has in place a comprehensive programme for the provision of new sewers and sewage treatment infrastructure. High priority is accorded to those areas where red tides are most likely to be exacerbated by pollution, i.e., semi-enclosed embayments. By its nature, provision of the new infrastructure is a lengthy process but it is going forward steadily. The government will continue to accord the programme a high priority. The programme is backed up by vigorous controls over the discharge of wastewater and the disposal of chemical waste.

- (ii) Whether, prior to and during a red tide event, sufficient action is being taken to prevent adverse impact caused by the red tide on marine flora and fauna.

In this respect, the Marine Department, USD, RSD, EPD and AFD has worked closely together in the collection of dead fish for appropriate disposal at landfills. This joint cooperation between departments has facilitated the effective clean up of dead fish and hence in minimising any adverse impact the presence of decaying fish may have on the marine ecology.