

**For discussion  
on 11 May 2010**

**LegCo Panel on Food Safety and Environmental Hygiene  
Report of Committee on Sustainable Fisheries**

**Purpose**

This paper briefs Members on the Report which has just been submitted to the Government by the “Committee on Sustainable Fisheries” (the Committee).

**Background**

2. The fisheries industry has a long history in Hong Kong and can be categorised as capture fisheries and aquaculture fisheries. In capture fisheries, there are currently about 3 700 fishing vessels in Hong Kong, of which about 1 100 are trawlers while the remaining are mostly sampans and small fishing boats engaged in inshore fishing. In 2009, Hong Kong’s fishing fleet had a production of about 159 000 tonnes valued at approximately HK\$2 billion, supplying about 30% of the local consumption of marine products.

3. Local aquaculture fisheries consist of marine fish culture and pond fish culture. Marine fish culture is regulated by the Marine Fish Culture Ordinance (Cap. 353). The Ordinance states that any person conducting marine fish culture activities must possess a licence and can only operate in designated fish culture zones. At present, there are a total of about 1 000 holders of marine fish culture licence operating in 26 designated fish culture zones in Hong Kong. The production of marine fish culture in 2009 was about 1 400 tonnes, amounting to about HK\$92 million in value. As for pond fish culture, the total

area of fish ponds covers an area of about 1 000 hectares and they are mainly located in Northwestern New Territories. Pond fish culture produced about 2 100 tonnes in 2009 with a total value of approximately HK\$35 million.

4. There are at present about 10 000 fishermen in Hong Kong directly engaged in capture and aquaculture fisheries, while about 8 000 Mainland deckhands are employed to assist in operation in fishing vessels or fish farms.

5. As compared to the last century, the fisheries resources within the traditional fishing grounds of Hong Kong's fishing fleet, namely local waters and the South China Sea, have been beset with problems of excessive fishing effort, marine pollution and marine works, leading to a significant reduction in the quality and quantity of fish catch. Taking into account the rise in operating costs, the fishermen's business has become increasingly difficult, as is the case of capture fisheries around the globe. In view of this, the Government established the Committee in late 2006 to study the long-term direction and goals for the development of the territory's fisheries industry, as well as feasible strategies and options to promote its sustainable development, to be submitted to the Government for consideration.

6. Chaired by the Director of Agriculture, Fisheries and Conservation, the Committee comprised of Legislative Council members, representatives from the fisheries industry, academics and experts from various fields and representatives from relevant Government departments. The Committee has studied and discussed in detail matters relating to the sustainable development of the fisheries industry. It has also made two local and one Mainland study visits as well as listened to and collected views from various stakeholders on different occasions, including the fisheries industry, green groups and advisory committees relevant to local fisheries.

7. The Committee has completed its report and just submitted it to the

Government for consideration. The salient points and recommendations of the report are set out below. A copy of the report is **at Annex.**

### **Salient Features and Recommendations of the Report**

8. Upon careful appraisal of the situation in both international and local fisheries industries, and recognising the contributions made by the local fisheries industry to various aspects of our economy and society, the Committee considers that notwithstanding the changes it has undergone in line with the structural development of Hong Kong's economy, the local fisheries industry, which has a long history and symbolises the traditional culture of Hong Kong, has prospects for sustainable development. The objectives of sustainable development for the fisheries industry are to allow fishermen to be self-reliant, improve their livelihood and their ability to cope with the changing operating environment. The Committee further considers that a sustainable fisheries industry would not only provide job opportunities for the fisheries community, but also continue to supply fresh and quality fisheries products to the people of Hong Kong. To promote the sustainable development of fisheries, measures to control fishing efforts would have to be introduced. These measures, in the long run, will help conserve the local marine ecosystem and fisheries resources, as well as establish and maintain a marine ecological environment that is abundant in resources and could be passed on to our future generations for the benefit of the general public.

9. To achieve the above mentioned objectives, the Committee has proposed two major directions for promoting the sustainable development of fisheries, namely:

- (i) to assist fishermen to develop or switch to modernised and sustainable practices; and
- (ii) to protect, conserve and rehabilitate the marine ecosystem and fisheries resources.

10. The Committee recommends the following strategies on three fronts to promote the sustainable development of the local fisheries industry.

*Promoting Modernised and Sustainable Practices*

11. First, the Committee considers that modernised and sustainable practices should be promoted. At present, the technology employed by the fisheries industry in Hong Kong is generally not advanced enough, which leads to high operating costs and low efficiency, and hence low competitiveness. The development prospects of the fisheries industry are also limited by its family-based mode of operation. The Committee proposes to promote the modernisation and development of sustainable fisheries through the following measures:

- (i) imparting to fishermen the concept of sustainable fisheries to raise their awareness of the importance of marine resources conservation to the ecology and economy so that they will engage more actively in the management and conservation of the fisheries industry and marine resources;
- (ii) promoting the formation of cooperative enterprises and cooperation with academic institutes and non-profit-making organisations to assist fishermen in learning multi-pronged expert knowledge and financing the development of the industry;
- (iii) considering the establishment of a “Sustainable Fisheries Funding Scheme” to provide financial assistance to fishermen, fishermen organisations, academic institutes or non-profit-making organisations for carrying out research and development programmes which will help improve the operating environment and competitiveness of the entire industry or restore marine and fisheries resources;

- (iv) reviewing the existing conditions and vetting procedures for fisheries loans and making appropriate adjustments where necessary to ensure that they can better meet the needs of fishermen who intend to develop or switch to modernised and sustainable fisheries operations;
- (v) providing individual operations which has potential for further development (including aquaculture and recreational fisheries) more support on technical development and research. Details are set out in paragraphs 13-15; and
- (vi) enhancing liaison and communication with Mainland fisheries authorities and fishing companies, as well as providing necessary information and suitable assistance to fishermen who intend to develop business in the Mainland.

13. On promoting the sustainable development of aquaculture, the Committee recommends to conduct a review of the existing management and regulatory regime of aquaculture, which may include, for example, studying the culture environment and operation of local marine fish culture zones, reviewing the moratorium on issuing new marine fish culture licences and studying the development of new sites for fish culture, extension or alternative use of fish culture zones, etc, with a view to supporting the future development of aquaculture.

14. Besides, the Committee considers that current studies and training in relation to hatchery should be enhanced and efforts to develop new culture species and improve quality of cultured fish should also be stepped up. The Committee also proposes to foster the development of marketing networks in the local and Mainland markets for local quality fisheries products through setting up and enhancing promotion and publicity of the brand name of “Accredited Fish

Farms” and by making use of the “Mainland and Hong Kong Closer Economic Partnership Arrangement” (CEPA).

15. On recreational fishing, the Committee recommends designating fisheries protection areas and marine parks as well as deploying artificial reefs and restocking to create and improve recreational fishing. The Agriculture, Fisheries and Conservation Department (AFCD) should, in collaboration with other departments and non-profit-making organisations, enhance the operating environment of recreational fishing, including assisting in the identification and upgrading of destinations and route designs for recreational fishing, strengthening publicity to bring in more tourists, and providing loans, technical support and training to interested fishermen to help them develop or switch to recreational fishing.

#### Controlling Fishing Effort

16. At present, the catch and fishing effort have far exceeded the “maximum sustainable yield” and “optimum fishing effort”<sup>1</sup> as assessed by experts. Therefore, the Committee proposes to establish a regulatory mechanism to restrict new entrants and ex-fishermen from rejoining the capture fisheries industry in order to control fishing effort and overfishing in Hong Kong waters.

17. To effectively implement measures to restrict new entrants would involve legislative amendments. The Committee recommends that the relevant Government departments should study measures to restrict new entrants, but at the same time considers that such measures should avoid causing any inconvenience or additional expenses to fishermen.

18. To better deter and control fishing activities in Hong Kong waters by non-local fishing vessels, the Committee considers that fishing in Hong Kong

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<sup>1</sup> The South China Sea Fisheries Research Institute, Chinese Academy of Fisheries Sciences conducted a research on the maximum sustainable yield and optimum fishing effort in 2006.

waters by non-local vessels should be prohibited through legislation<sup>2</sup>. On the other hand, the Committee also suggests that fishing in Hong Kong waters by non-fishing local vessels should be restricted and that only recreational fishing with specified fishing gear or method such as hand lining be allowed on these vessels.

19. Besides, the waters in local offshore and Pearl River Region are fish spawning and nursery grounds. Trawling in inshore waters, because of its non-selective nature, would capture fingerlings even though they have no immediate commercial value, thereby seriously affecting the recovery ability and the production of local offshore and Pearl River fisheries resources. Intensive bottom trawling would also disturb and alter the seabed, thus reducing the quantity and diversity of marine species. Therefore, the Committee suggests that the Government should ban all trawlers from operation in local waters by amending the relevant legislation. Having recognised that the livelihood of fishermen which operate in Hong Kong waters would be directly affected should the above proposal be adopted, the Committee suggests that the Government could consider providing them with appropriate financial assistance.

#### *Conservation and Enhancement of Fisheries Resources*

20. Apart from prohibiting trawlers to operate in Hong Kong waters, the Committee also proposes that a statutory mechanism be established to designate important spawning and nursery grounds within Hong Kong waters as fisheries protection areas and to step up the management measures in these areas, such as setting up “no take” zones and implementing a seasonal fishing moratorium etc. Consideration may also be given to deploying artificial reefs and carrying out fish restocking in order to enhance the protection of fisheries resources in these areas.

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<sup>2</sup> While there is currently no legislation in Hong Kong prohibiting fishing in Hong Kong waters by non-local vessels, the marine police may arrest and repatriate illegal immigrants found on board of these vessels under the *Immigration Ordinance* (Cap. 115).

21. Besides, after drawing reference from arrangements in the marine reserve areas of other places, the Committee proposes that commercial fishing should be prohibited in marine parks to further preserve Hong Kong's important marine ecology.

22. The Committee considers that through the proposals and measures outlined in paragraph 10 – 21 above, the excessive fishing effort in Hong Kong waters could be controlled and kept at a level below the “maximum sustainable yield”. Important nursery and spawning grounds within Hong Kong waters could also be conserved. Fishermen who remain in the fishing industry, including those who choose to continue engaging in trawling outside Hong Kong waters, as well as those in non-trawling activities in Hong Kong and nearby waters, will benefit as a result of the conservation of inshore nursery grounds which lead to gradual improvement and restoration of fisheries resources.

23. In addition, the Committee takes the view that promoting the sustainable development of aquaculture and recreational fisheries will help create a more favourable operating environment for the industry. Opportunities would also be provided for fishermen to further develop or switch to other modes of operation to improve their income. This will ultimately enable fishermen engaged in the fishing and aquaculture industries to be better equipped to cope with changes in the operating environment and achieve self-reliance.

### **Way Forward**

24. The Committee recommends that the proposals and measures set out above be implemented in phases. Priority could be accorded to those proposals which could be implemented with existing resources or legal framework. Besides, the Government should initiate wider consultation on the proposals for controlling the fishing effort and enhancing conservation of fisheries resources. After consensus has been obtained and appropriate measures have been drawn up



to assist the affected fishermen, the relevant legislation should be amended expeditiously for implementation of the proposals.

25. The Government is studying the report and its recommendations in detail. The Government has already actively taken forward certain proposals which are worthy of support and which could be implemented immediately. For example, the AFCD will provide training programmes for fishermen during the fishing moratorium this year and introduce a pilot hatchery scheme. On the proposal to ban commercial fishing in marine parks, the Environmental Protection Department has also consulted the relevant LegCo Panel and is in discussions with stakeholders. The Government will conduct further studies on individual proposed measures to evaluate whether the recommendations should be supported and are feasible, implications for stakeholders and requisite resources. Industry members and relevant stakeholders would be consulted if necessary.

### **Advice Sought**

26. Members are invited to comment on the contents of the report.

Food and Health Bureau

Agriculture, Fisheries and Conservation Department

May 2010

TRANSLATION

# **Report of the Committee on Sustainable Fisheries**

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## I. Summary

The Government established the Committee on Sustainable Fisheries (the Committee) in late December 2006 to study the long term directions and goals as well as feasible options and strategy for the sustainable development of the local fisheries industry. The results of the study will be submitted to the Food and Health Bureau for consideration.

2. Following careful consideration of the situations of the international and local fisheries industries, as well as the contributions of the local fisheries industry to Hong Kong's economy and society, the Committee agrees that the local fisheries industry has changed in tandem with Hong Kong's economic development. However, the local fisheries industry, as an important local cultural asset with a long history, is sufficiently valuable and has potential for sustainable development.

3. The goals of the sustainable development of the fisheries industry are to enable fishermen and fish farmers to achieve self-reliance, help them maintain their own livelihoods and cope with the changing business operating environment, provide job opportunities to the fisheries community and ensure the supply of fresh and quality fisheries products to Hong Kong people. Meanwhile, our society will benefit from a sustainable fisheries industry, as it will help establish and maintain a marine ecological environment that is abundant in resources and can be passed on to our future generations.

4. To achieve the goals of the sustainable development of the fisheries industry, the Committee has formulated two directions for promoting the industry's sustainable development:

- (1) To assist fishermen to develop or switch to modernised and sustainable modes of operation; and
- (2) To protect, conserve and rehabilitate the marine ecosystem and fisheries resources.

5. The Committee proposes the following measures to promote the sustainable development of the local fisheries industry:

- (I) Promote modernisation of the fisheries industry and sustainable modes of operation;
- (II) Control fishing effort of capture fisheries; and
- (III) Conserve and enhance fisheries resources.

6. The Committee finds the technology employed by the fisheries industry in Hong Kong is not advanced enough, resulting in high operating costs and low efficiency, and hence low competitiveness. Therefore, it recommends that the Government promote modernisation and sustainable development of

the fisheries industry and assist fishermen to develop or switch to modernised and sustainable modes of operation and businesses, through the following measures:

- (1) Enhance fishermen's understanding of sustainable fisheries;
- (2) Promote fisherman cooperative enterprises;
- (3) Provide stable financial support to sustainable fisheries development programmes;
- (4) Review fisheries loans requirements and approval procedures;
- (5) Implement specific support measures for sustainable fisheries operations (e.g. aquaculture, recreational fisheries, fisheries product logistics and processing); and
- (6) Strengthen communications with the Mainland counterparts to help fishermen seek business opportunities.

7. At present, the catch and fishing effort of capture fisheries have far exceeded experts' estimates of the maximum sustainable yield and optimum fishing effort. The Committee considers that the above-mentioned measures to promote modernised and sustainable operations alone cannot solve the problems. Further measures should be in place to control the fishing effort of local capture fisheries. Hence, the Committee proposes the following measures to control the fishing effort:

- (1) Maintain an appropriate number of fishing vessels;
- (2) Prohibit fishing by non-local vessels in Hong Kong waters;
- (3) Ban trawling in Hong Kong waters;
- (4) Assist trawler fishermen to switch to other operations; and
- (5) Strengthen fisheries management and law enforcement.

8. The Committee also proposes certain measures to protect important marine and fisheries ecosystems, such as fish spawning and nursery grounds, and to promote the rehabilitation and growth of fisheries resources in Hong Kong waters. The measures include:

- (1) Strengthen regulation of coastal and marine development projects;
- (2) Designate fisheries protection areas (FPAs); and
- (3) Prohibit commercial fishing in marine parks

9. The Committee considers that through the above proposed options and measures, the current excessive fishing effort can be reduced to a level below the maximum sustainable yield, and important fish spawning and nursery grounds in Hong Kong waters can be conserved. These proposed measures can also provide fishermen with choices, including assisting trawler fishermen to switch to other operations. Those who continue to engage in capture fisheries will then benefit from the improvement and recovery of marine fisheries resources. Consequently, the whole fisheries community will be better able to cope with the changing operating environment and achieve self-reliance.

10. The Committee has consulted stakeholders on the proposed options and measures. Though the stakeholders hold different views regarding individual measures, they generally accept the long term goals and directions proposed by the Committee and agree on the positive impacts resulting from the proposed measures. The Committee recommends that the Government conduct a more comprehensive consultation with the industry and stakeholders whilst studying and formulating the implementation details of the measures, and strive to consider and balance the views of different parties, with a view to obtaining wide support for the proposals.

11. Finally, the Committee suggests that the proposed options and measures can be implemented in phases. Highest priority should be given to proposals that can be implemented using existing resources or within the existing legal framework. On the other hand, the Government should conduct consultations on the proposals for controlling fishing effort and enhancing fisheries resources conservation. In order to enhance conservation of marine ecosystems and fisheries resources, the Government should amend the relevant legislation to implement the proposals on maintaining an appropriate number of fishing vessels, prohibiting non-local fishing vessels from fishing within Hong Kong waters, prohibiting commercial fishing in marine parks, designating FPAs and banning trawling in Hong Kong waters, after reaching consensus and formulating the appropriate measures for assisting affected fishermen.

## II. Preface

### Establishment of the Committee

In recent years, in addition to rising operating costs and declining quality of catch, the continued decrease in fisheries resources in Hong Kong and its surrounding waters has made the operating environment increasingly difficult for fishermen. In view of this, the Government established the Committee on Sustainable Fisheries (“the Committee”) in late December 2006 to study the long term directions and goals as well as feasible options and strategy for the sustainable development of the local fisheries industry. The results of the study will be submitted to the Food and Health Bureau for consideration.

2. The Committee is chaired by the Director of Agriculture, Fisheries and Conservation and its members include Legislative Councillors, fisheries industry representatives, scholars and experts in various professional areas, and representatives of related government departments, who work together to give comprehensive and balanced advice on the sustainable development of the local fisheries industry.

### Terms of Reference

3. The Committee is responsible for advising the Secretary of the then Health, Welfare and Food Bureau (the Bureau was renamed as the Food and Health Bureau in July 2007) on the long term goals and directions for the sustainable development of Hong Kong fisheries, and on the implementation strategy, having regard to -

- (1) local and international trends in fisheries, fisheries resources and trade;
- (2) the ecological sustainability and economic viability of the Hong Kong capture and aquaculture fisheries; and
- (3) other relevant factors including financial implications and social impacts.

**Membership****Chairman**

Director of Agriculture, Fisheries and Conservation

**Members**

Hon WONG Yung-kan	Prof Nora TAM Fung-yee
Hon Fred LI Wah-ming	Dr. Paul SHIN Kam-shing
Hon Vincent FANG Kang	Prof. Francis LUI Ting-ming
Mr KEUNG Yin-man	Mr NG Leung-sing
Ms WONG For-kam	Ms Tennessy HUI Mei-sheung
Mr LEE Tak-wah	Dr. Sarah CHENG Sze-nga
Mr FUNG Shue-fat	Food and Health Bureau representative
Mr CHEUNG Yi-zung	Transport and Housing Bureau representative
Mr KEUNG Bak-hou	Office of Financial Secretary representative
Mr YEUNG Sui-leung	Agriculture, Fisheries and Conservation Department representative
Mr YIK Kwok-leung	Marine Department representative Environmental Protection Department representative

**Secretary**

Agriculture, Fisheries and Conservation Department representative

**Duties and Activities**

4. The Committee held 13 meetings for detailed study and discussion of issues within its purview.

The main areas covered were:

- (1) Trends of international fisheries development, fisheries resources and trade;
- (2) Ecological sustainability and economic viability of capture fisheries and aquaculture;
- (3) Existing measures to support the sustainable development of capture and aquaculture fisheries;
- (4) Present situation of marine conservation;
- (5) Fisheries policies and management of different countries;
- (6) Feasible fisheries management and conservation measures;



- (7) Potential fisheries and relevant sectors for providing alternative livelihood for fishermen; and
- (8) Measures to support sustainable development of the fisheries industry.

5. To increase the understanding and knowledge of the fisheries industry, the Committee conducted two local study tours and one Mainland tour for members. The two local study tours included visits to local wholesale fish markets, fisheries product processing centres, fishing port facilities, fishing vessels, mariculture farms, pond fish culture farms and recreational fishing rafts. The Mainland study tour included meetings with the Ocean and Fishery Bureau of Guangdong Province, the Fisheries Management and Fishing Port Superintendence Bureau of South China Sea, the Hong Kong and Macao Floating Fishermen Business Office of Guangdong Province and a fisheries business corporation. The Committee also visited the wholesale fisheries products market, aquaculture farm, fisheries product processing facilities and recreational fishing businesses in Zhanjiang, Guangdong province.

6. Through the study tours, the Committee obtained a better understanding of the direction and development of Guangdong's fisheries policies, and had opportunities for studying the possibilities of Hong Kong fishermen developing businesses in the Mainland. Additionally, the Committee received Mr. LI Jian-hua, Director of Bureau of Fisheries, Ministry of Agriculture, during his visit to Hong Kong, and discussed with him fisheries policies and the latest development trends in the Mainland.

7. While studying the long term directions and goals, and discussing feasible options and strategy for sustainable development of the fisheries industry, the Committee repeatedly consulted and collected the opinions of stakeholders, including the fisheries industry, green groups and advisory committees related to the local fisheries industry. The Committee then drafted the preliminary proposals for promoting the sustainable development of fisheries in Hong Kong, and consulted stakeholders on the proposals from August to October 2008. Stakeholders included fishermen and fish farmers associations, academics, green groups and non-governmental organisations, the recreational fishing sector and related organisations, advisory committees related to fisheries and marine conservation, District Councils, Heung Yee Kuk, and other organisations and individuals that presented views to the Committee before.

8. After gathering and studying the views of relevant parties, the Committee formulated proposals on the long term directions and goals as well as feasible strategy and options for the sustainable development of the fisheries industry, and compiled this report for submission to the Food and Health Bureau for consideration.

9. The list of the Committee's working papers and details of its work and activities are presented in Annex I and Annex II.

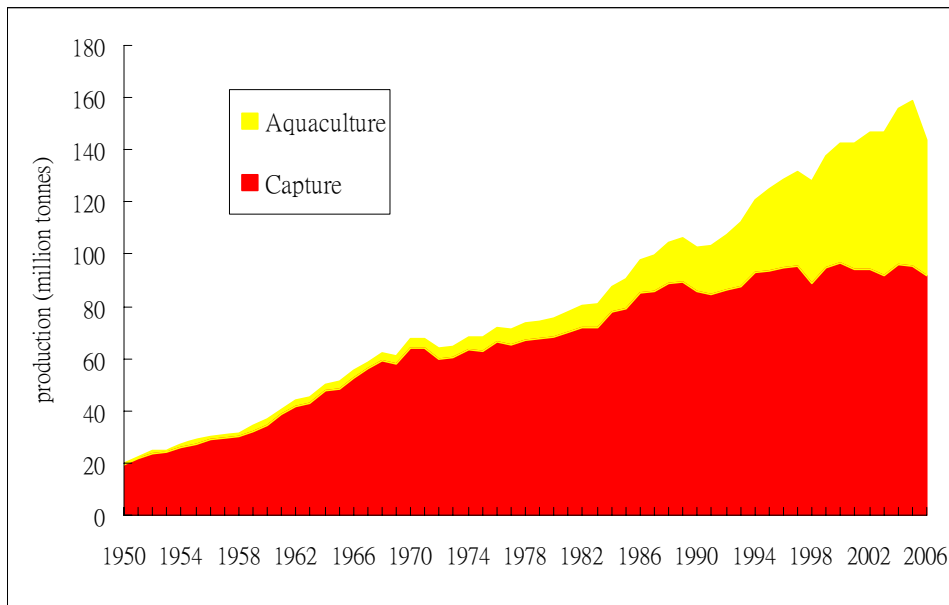
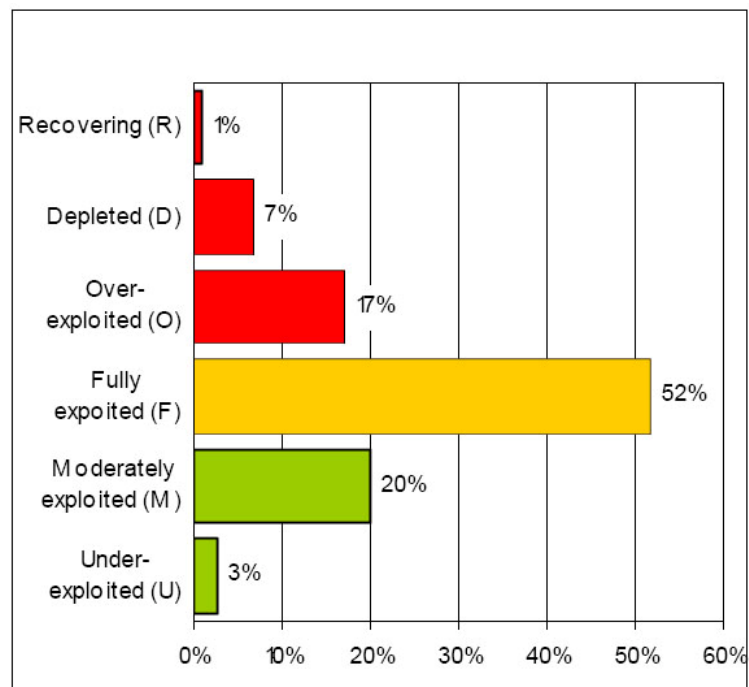
### **III. Current Situations and Challenges of the International and Local Fisheries Industries**

#### **Overview of International Fisheries**

10. Annual global fisheries production increased from 19.9 million tonnes in 1950 to 159.9 million tonnes in 2006 (Figure 1), the majority of which could be attributed to capture fisheries. In 1950 and 1980, capture fisheries yielded 19.2 million tonnes and 68 million tonnes respectively, accounting for 94% of global fisheries production. Although global fisheries production remained high for the past 20 years, the ratio of capture fisheries to aquaculture production has undergone a significant change. Growth in capture fisheries production has fallen well behind that of aquaculture production. After reaching 90 million tonnes in the late 1980s, annual global capture fisheries production remained between 85 million tonnes and 97 million tonnes. In 2006, annual capture fisheries production was estimated at 92 million tonnes, accounting for only 64% of global fisheries production. Meanwhile, the percentage of aquaculture production rose from 10% in the 1980s to 36% in recent years. In 1992, the Mainland fisheries production accounted for 19% of global production, which increased to 36% in 2006 (the increase mainly arising from the aquaculture industry).

11. Global capture fisheries resources have also shown signs of decline. Among all marine capture fish species, around 76% have already been assessed in terms of stocks (accounting for 80% of total production). Of the fish species which have been assessed, 52% are fully exploited, 17% over-exploited and 7% depleted, with only 23% subject to under or moderate exploitation (Figure 2). In the past 30 years, the proportion of species subject to under or moderate exploitation continued to decline, while the proportion of species that are over-exploited or depleted has increased. The composition of fish catch has also changed, shifting from relatively large, slow-growing demersal (living on or near the seabed) carnivorous fish to small, fast-growing marine invertebrates as well as pelagic fish that feed on plankton.

12. Meanwhile, the global capture fishing fleet has a far higher fishing effort than is required, resulting in overfishing. At present, global fisheries resources are either fully or over-exploited. Only in certain regions is there some potential for development with catching individual fish species. As a result, there is little scope for increasing the marine capture production. On the contrary, without adequate fisheries management policies and resource restoration strategy, fisheries resources will likely suffer further decline.

**Figure 1: Global fisheries production (million tonnes) (1950 - 2006) : <sup>1</sup>****Figure 2: Trend of global capture fisheries in 2004<sup>2</sup>**

13. Though the industry continues to suffer from severe and chronic operating losses, the global capture fishing fleet continues to grow. This growth can primarily be attributed to a large amount of government subsidies (it is estimated that subsidies for the annual global capture fisheries amount to

<sup>1</sup> Food and Agriculture Organization of the United Nations, 2008; The State of World Fisheries and Aquaculture 2008.

<sup>2</sup> Food and Agriculture Organization of the United Nations, 2005; Review of the State of World Marine Fishery Resources.

US\$8 billion to US\$10 billion). To tackle this problem, the World Trade Organization has established a negotiating group, with the aim of initiating negotiations to abolish subsidies not conducive to conservation of fisheries resources and sustainable exploitation. The World Trade Organization also considers that in the absence of a fisheries management system among its member countries, all subsidies granted to the fisheries industry would be regarded as unfavourable to the sustainable fisheries development, and will in future be subject to constraints.

14. The Hong Kong Government has long supported the fisheries subsidies negotiations initiated by the Doha Ministerial Declaration, and has actively expressed its views on the issue. On the whole, the Government agrees to restrict the subsidy programmes leading to overfishing and depletion of fisheries resources, and to take fisheries resource management into consideration when setting constraints on subsidies. The negotiations are ongoing, and members of the World Trade Organization may have to terminate all fisheries subsidies that aim to increase fishing effort. The outcome of the negotiations may cause drastic changes to the size of the global capture fishing fleet and its structure.

15. Over-investment and over-subsidisation have led to overfishing. At the same time, certain traditional offshore fishing grounds have been designated as exclusive economic zones (such that fishing fleets from other countries/regions are not allowed to unconditionally operate in these zones). This has resulted in illegal, unreported and unregulated fishing activities. “Illegal fishing” means fishing activities without prior approval; “unreported fishing” means underestimation or false reporting of production quantities, or failure to report known production quantities; “unregulated fishing” means fishing activities that fail to follow conservation management measures and regulations of a country, region or international organisation.

16. To promote the sustainable use of fisheries resources and to combat illegal, unreported or unregulated fishing, various conventions and programmes have been proposed by international and regional fisheries management organisations. They include:

- United Nations Convention on the Law of the Sea (legally binding)
- The Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (legally binding)
- Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (legally binding)
- Code of Conduct for Responsible Fisheries (voluntary)
- International Plan of Action for the Management of Fishing Capacity (voluntary)

- International Plan of Action for Conservation and Management of Sharks (voluntary)
- International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (voluntary)
- EU regulation on illegal, unreported and unregulated (IUU) fishing - enacted on 1 January, 2010. This new regulation requires all imported capture fisheries products entering the EU region to possess capture certificates, stating they were not obtained through IUU fishing capture.

17. While the production of global capture fisheries has reached saturation, the aquaculture industry enjoys a large room for development. In the past 50 years, global aquaculture production increased substantially, with annual production of less than one million tonnes in the early 1950s, rising to 59.4 million tonnes in 2004, representing 59 times growth. In 2004, the value of global aquaculture production totalled US\$70.3 billion (HK\$548 billion), among which 41.3 million tonnes were produced by aquaculture in the Mainland, representing 69.6% of the total production. From 1950 to 2004, the average annual growth of global aquaculture production was 8.8%, with regions in Latin America and the Caribbean having the highest overall average annual growth, and the average annual growth of the Mainland reaching up to 12.4%. The global demand for aquatic products is on the rise, and aquaculture production may help to satisfy the demand. There is also growing demand for safe and quality products, so the regulation and management of the aquaculture industry will attract increasing attention.

18. Overall, capture fisheries will barely see any growth in production, and there may even be a decline. On the other hand, aquaculture production will further increase to meet the growing demand. The volume of trade in fisheries products has been stable or slightly increasing in recent years, and it is expected that developing countries and regions will play a more important role in future. In fisheries management, the shared goal of sustainable development will result in the implementation of even more stringent fisheries management measures around the world.

### **Current Situation of Fisheries Industry in Hong Kong**

19. The fisheries industry in Hong Kong has a long history. As regards capture fisheries, there are around 4 000 fishing vessels in Hong Kong, in addition to 2 500 non-fishing vessels, including fish carriers and workboats for mariculture. Of the 4 000 fishing vessels, around 1 200 are trawlers (including pair trawlers, stern trawlers, shrimp trawlers and hang trawlers), while the others are mainly sampans, gill netters, hand liners and purse seiners (Figure 1) engaged in inshore fishing. In 2008, the production of Hong Kong capture fishing fleet was around 158 000 tonnes, with a value of HK\$1.78 billion. It is estimated that around 26% of the production (around 37 700 tonnes) came from Hong Kong waters, with

the rest mainly from the South China Sea. The supply from the Hong Kong fishing fleet accounted for around 25% of all marine fisheries products consumed in Hong Kong.

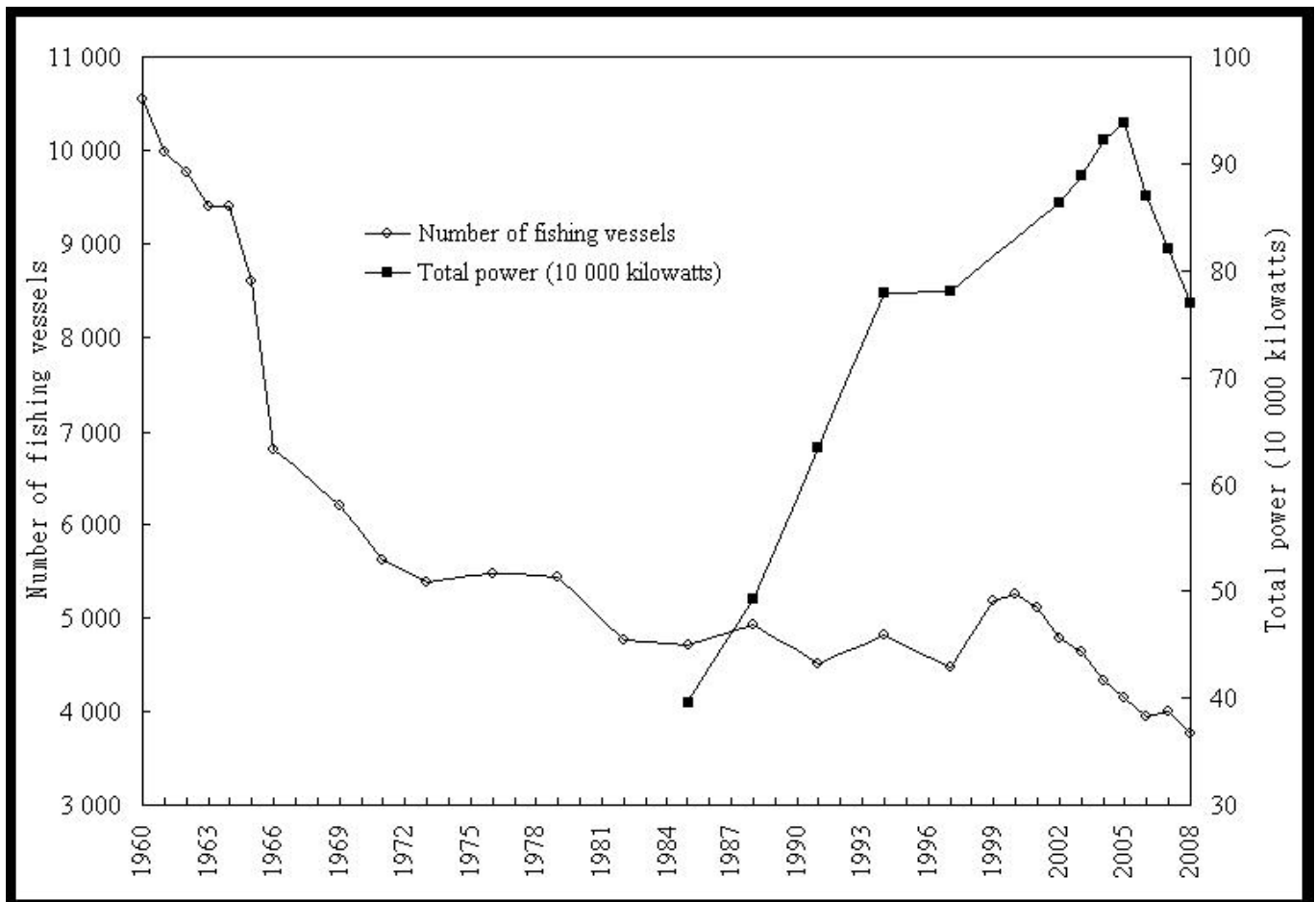
20. The number of fishing vessels in Hong Kong grew rapidly after the Second World War. In the early 1960s, the number of fishing vessels grew to 10 000, most of which were not mechanised. Subsequently, mechanisation became a trend, and the number of fishing vessels gradually decreased to around 4 000 at present (excluding non-fishing vessels). On the other hand, the overall engine power of the fishing vessels increased from 400 000 kilowatts in 1985 to 770 000 kilowatts in 2008. (Figure 3)

21. As a result of mechanisation and growth of the local fishing fleet, Hong Kong's annual capture fisheries production increased from around 100 000 tonnes in 1965 to 230 000 tonnes in 1989. Afterwards, due to declining fisheries resources and competition from the Mainland fishermen, annual production of the local fishing fleet decreased to 160 000 tonnes. Likewise, a similar downward trend in production value was observed (Figure 4). The average annual production per vessel of the Hong Kong fishing fleet also decreased along with capture production since 1989, with a rebound from 2000 (Figure 5) mainly due to the decrease in the number of fishing vessels starting from 2000 (the decrease was mainly among the smaller, low power vessels). Although there were less fishing vessels, their overall engine power continued to increase. Therefore, the catch per unit of effort (CPUE) (i.e. catch per kilowatt of vessel power) still decreased (Figure 5), reflecting a reduction in fishing efficiency. Like the capture fisheries around the world, the fisheries resources in the traditional fishing grounds (the South China Sea and Hong Kong waters) of the Hong Kong fishing fleet exhibit a continual decline due to overfishing, marine pollution and marine development projects.

Table 1: Hong Kong fishing vessel statistics in 2008

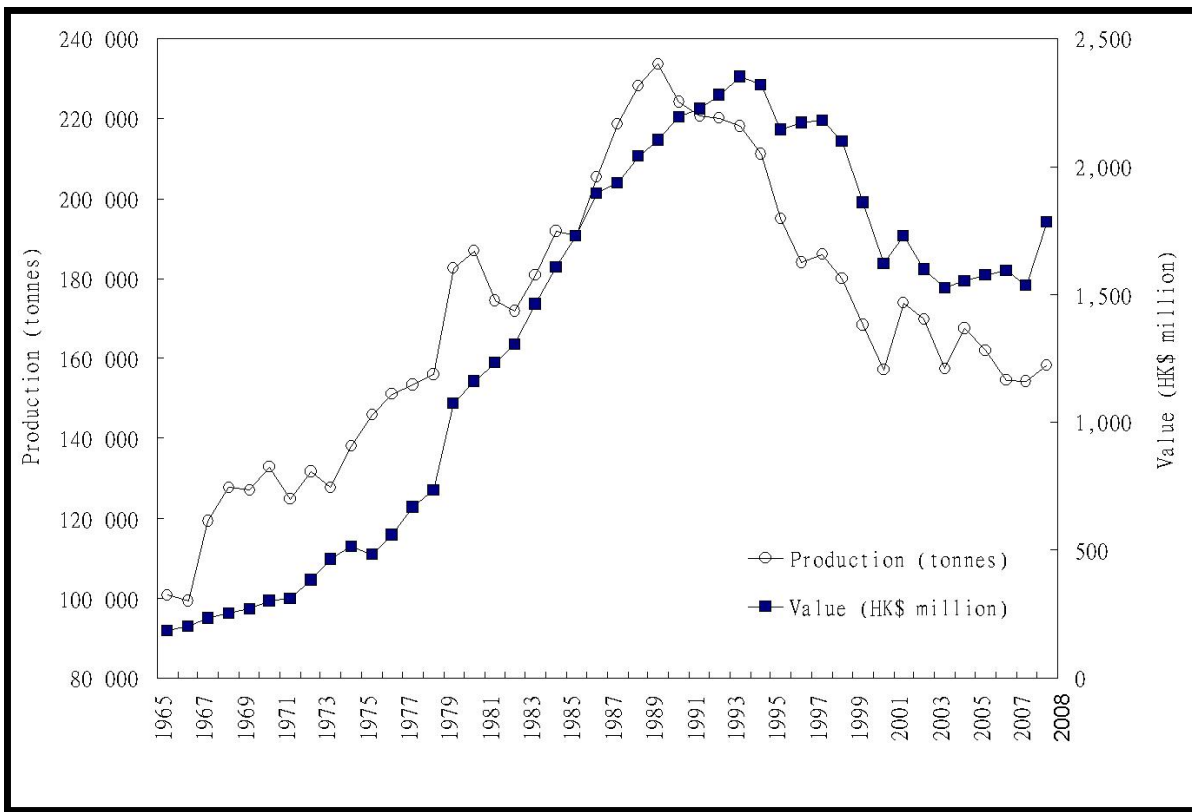
Type of fishing vessel	Number
Capture fishing vessels	3 754
Pair trawler	538
Stern trawler	132
Shrimp trawler	363
Side trawler	44
Gill netter	204
Long liner	113
Hand liner	60
Purse seiner	92
Cage trapping boat	51
Miscellaneous craft	7
Fishing sampan	2 150
Non-fishing vessel/sampan	2 260
Total	6 014

Figure 3: Number of fishing vessels and overall engine power (1960 - 2008)

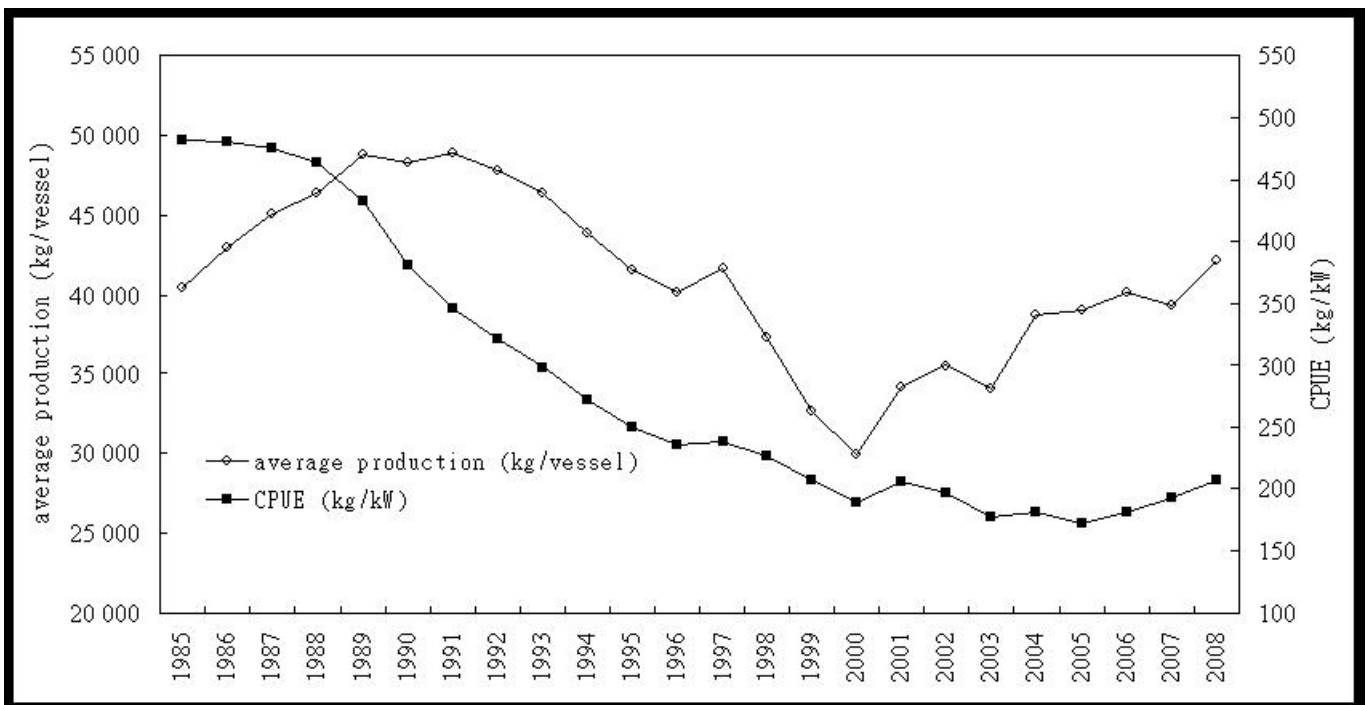




**Figure 4: Production volume and production value of the fishing fleet in Hong Kong (1965 - 2008)**



**Figure 5: Production per vessel of Hong Kong's fishing fleet and the catch per unit of effort, CPUE (1985 - 2008)**



22. Local aquaculture fisheries include marine fish and pond fish culture. Before 1980, marine fish culture was unregulated, and a large number of floating rafts populated the waters of Hong Kong, causing navigation safety and marine environment concerns. To ensure that marine fish culture is conducted in an orderly manner, the Government enacted the Marine Fish Culture Ordinance in 1980. This stipulates that all marine fish culture must be conducted by holders of marine fish culture licence in designated fish culture zone. Since 1987, to improve the environment and water quality of fish culture zones, and to reduce the effects of marine fish culture on the marine environment, the Government introduced a moratorium on the issue of new marine fish culture licences. At present, there are 1 066 holders of marine fish culture licence in Hong Kong, operating in 26 designated marine fish culture zones. The annual production of marine fish culture began to drop since the heyday in the early 1990s, from 3 860 tonnes to around 1 500 tonnes in recent years. In 2008, Hong Kong's marine fish farmers supplied 1 370 tonnes of live marine fish, accounting for about 9% of the local live food fish, valued at around HK\$82 million.

23. As regards pond fish culture, fish ponds are mainly in the northwestern New Territories of Hong Kong, occupying around 1 160 hectares. Pond fish culture does not require a licence. As the New Territories region was increasingly urbanised, the annual production of pond fish culture began to drop since the heyday in the late 1980s, when the highest production was 6 600 tonnes. In 2008, the total production of pond fish culture was around 2 266 tonnes, accounting for 5% of local food pond fishes, with a total value of around HK\$41 million.

24. The capture and aquaculture fisheries in Hong Kong operate mainly on a family basis. Most of the operations are conducted by family members, and local or Mainland fisherman deckhands. The fishing population shows signs of ageing, with about half of the fishermen being over 50 years old. Fishermen in general are not very well educated.

25. Workers employed in the capture and aquaculture fisheries are about 11 000, and about 8 000 Mainland fisherman deckhands are employed to assist in fishing vessels or fish farms. These figures do not include people engaged in ancillary sectors servicing the fisheries industry, such as wholesale and retail marketing of fisheries products, transportation and logistics support for fishing vessels (e.g. fuel, ice manufacturing and fishing gear supply).

### **Challenges Faced by the Local Fisheries Industry**

26. The fisheries resources and production in Hong Kong have been declining since the late 1980s. According to the result revealed by a consultancy study conducted by the Agriculture, Fisheries and Conservation Department (AFCD) in 1998, 12 out of the 17 species under evaluation were heavily

over-exploited, while the remaining five species were fully exploited. Moreover, local catch composition had changed from mainly large, slow-growing, high-value species, to small, fast-growing, low-value species. The report suggested that the major reasons for the continuing decline of local fisheries resources included overfishing, marine development projects (such as reclamation, sand dredging and mud dumping) and marine pollution, which had adverse impact on inshore resources and fishing grounds. The continuing decline in fisheries resources had resulted in poor catch values.

27. Moreover, according to a study conducted by the South China Sea Fisheries Research Institute of the Chinese Academy of Fisheries Sciences in 2006, the maximum sustainable yield (MSY) of Hong Kong waters is estimated to be about 20 500 tonnes, and the fishing effort in terms of engine power should be kept below 140 000 kilowatts. According to statistics in 2006, the fisheries production of Hong Kong waters was around 26 700 tonnes, while the overall engine power of fishing vessels was around 270 000 kilowatts. As such, it can be seen that the fisheries production and fishing effort had far exceeded the estimated MSY and the optimum fishing effort. In view of the continual deterioration of the fisheries resources in Hong Kong waters, it is necessary to further reduce the overall engine power and fisheries production in Hong Kong waters to the level of maximum economic yield in order to accelerate and enhance the recovery of fisheries resources and maximize the economic gains of the fishing vessels operating in Hong Kong waters. If this level is attained, fishermen can have maximum returns at optimal fishing effort, their operations will be the most cost-effective, and fisheries resources will be sustainable. If, however, the present operations and fishing effort are maintained, in the absence of effective fisheries management measures, fisheries resources will never be able to recover, and fisheries production will continue to decline in quality and quantity. At the same time, the marine ecosystem will continue to deteriorate, and fishermen's livelihood will be adversely affected.

28. In 2004, the Government proposed revising the Fisheries Protection Ordinance, and implementing appropriate fisheries management measures, which included the establishment of a fishing licence system, limiting the entry of new fishing vessels, designating FPAs, and introducing a territory-wide closed season in Hong Kong waters to control overfishing. After the close of public consultation, the Government presented the proposal to the Panel on Food Safety and Environmental Hygiene of the Legislative Council for discussion. The fisheries industry considered the proposed measures would have impact on fishermen's livelihood, and suggested the Government provide appropriate support to affected fishermen before implementing the measures. Certain green groups, however, considered the proposed measures insufficient for restoring Hong Kong's fisheries resources. Subsequently, the Panel on Food Safety and Environmental Hygiene of the Legislative Council recommended the Government to further discuss and study the proposals, together with the fisheries industry and all relevant stakeholders, in order to obtain broader consensus before implementing the

proposals. After thorough discussions, the majority of stakeholders recognised the need to study the long term directions and goals as well as feasible strategy and options for sustainable development of the fisheries industry. As a result, the Government established this Committee in December 2006 to conduct this study.

29. There are other factors that have impact on Hong Kong's fisheries industry. In recent years, local fisheries industry has faced competition from the fishing fleets in the three provinces of the South China Sea and from imported fisheries products. Also, the fisheries management measures adopted outside Hong Kong waters are affecting local fishing vessels operating in these areas. In addition, the aging of the fishing population, the lack of newcomers and labour shortage have left Hong Kong's capture fisheries in a critical situation.

30. In fact, the local fisheries industry is not alone in facing such a situation. Many countries and regions with well-developed fisheries are facing problems of declining fisheries stocks, rising operating costs, and low competitiveness of fishermen. To tackle these issues, the Mainland has already implemented measures such as regulating the number and engine power of fishing vessels, implementing fishing moratorium, designating no trawl zones, encouraging coastal fishermen to switch to other operations, and conducting restocking programmes. Regions in Asia with relatively advanced fisheries, such as Japan and South Korea, are also facing the problem of limited scope for developing offshore fisheries, and declining inshore fisheries production. These two countries are now reducing the sizes of their offshore fishing fleets and restoring the fisheries resources of their own exclusive economic zones, in order to reduce excessive fishing effort.

31. Regarding the aquaculture side, despite that aquaculture has a good prospect globally, aquaculture in Hong Kong must overcome various challenges before it can develop further. These challenges include:

- low market share of local aquaculture;
- strong competition from large volume of imported aquatic products;
- inadequate aquaculture technologies;
- limited choices and supply of fry;
- uncompetitive production costs;
- a moratorium on the issue of new marine fish culture licences;
- idling marine fish culture rafts;
- unclear land status concerning fish ponds; and
- the continual decrease in fish pond areas due to urban development.

The above factors limit the scope of development of the local aquaculture industry. Moreover, the aquaculture industry also faces the problems of aging population, labour shortage, and inability to attract young people to join the industry.

32. To assist the industry to overcome the challenges, and to promote its sustainable development, the Government has been providing supporting services and implementing a series of measures for the industry, with a view to improving the industry's competitiveness and efficiency, and assisting fish farmers to cope with the ever-changing operating environment. Major supporting services and measures include:

- offer low-interest loans to the industry for business development, switching to other operations, and production purposes through a number of fisheries loan funds;
- provide technical guidance, occupational training and liaison services for the industry; and
- provide training to help fishermen and fish farmers obtain the necessary knowledge and skills for development or switching to other operations, through the Marine Fish Scholarship Fund of the Fish Marketing Organization (FMO).

Through the Mainland Fisherman Deckhand Scheme and Supplementary Labour Scheme, the Government mitigates labour shortages in the capture and aquaculture fisheries. The Government also implements a number of programmes that aim to promote aquaculture development, including the Accredited Fish Farm Scheme, Good Aquaculture Practice Programme, Fish Health Management Programme, organic fish farming, and red tide monitoring and management measures. It also introduces new culture species through adaptive study, so as to raise the quality and competitiveness of local cultured fishes. Also, the AFCD has initiated hatching trials in collaboration with fish farmers and promoted the development of small scale fish fry nurseries on mariculture rafts to them. The Department has established an experimental hatchery for the purpose of developing local fish fry hatching techniques, with a view to increasing the technological level of fish farmers. To improve marketing of local fisheries products, the Government and the FMO work with the industry to develop and promote the brand of local quality fisheries product and marketing networks, through participating in and organising various promotional activities.

33. In 2008, in view of the impact of high oil prices on the operations of the industry, the Government implemented a set of relief measures through the FMO, aiming at reducing the burdens of the industry. The measures included waiver of fishing vessel licence fees for one year (fishing vessels and fish carriers, and workboats for mariculture), waiver of the interest on special loans for the fishing moratorium in 2008, and lowering the threshold for the fishing moratorium special loan application in

2008. Moreover, eligible applicants could apply for a one-off additional loan, increasing the maximum loan amount to HK\$ 200,000.

34. The fishing moratorium was extended by two weeks from two months to two and a half months in 2009, affecting even more fishermen. The expenses required for resuming fishing operations after the moratorium also increased. After consulting the Fish Marketing Advisory Board, the Government decided to implement special arrangements for the 2009 moratorium loans. These included extending the loan to include new types of fishing vessels affected by the moratorium, and one year interest-exemption for the borrowers of 2009 moratorium loans as well as the additional loans. Moreover, to alleviate the impact of the “financial tsunami” on Hong Kong’s economy, the Government announced a set of relief measures in May 2009, which included waiver of licence fees for transportation, tourism and catering industries, and related industries for one year, under which fishing vessels were also included.

35. Regarding marine conservation, apart from enforcing the Fisheries Protection Ordinance (Cap. 171) to combat destructive fishing activities, the Marine Parks Ordinance (for the designation of marine parks and marine reserve) was enacted and the Artificial Reefs Programme was launched to protect the important marine environment and enhance fisheries resources. Moreover, the Government has taken several measures, including the enforcement of legislation on environmental impact assessments and water pollution control, enhancing control over pollution sources and improving sewage treatment to reduce the impact of development projects and water pollution on the marine environment.

36. Details of measures supporting the sustainable development of the local fisheries industry and conserving Hong Kong’s marine environment are shown in Annex III.

#### **IV. Goals and Directions of the Sustainable Development of the Local Fisheries Industry**

37. Although there are uncertainties about the future of the fisheries industry, and the fisheries output only accounts for a very small percentage (0.034%) of the Gross Domestic Product, the Committee is of the view that the development of fisheries should not be considered solely from an economic perspective.

38. Hong Kong's fisheries industry has a long history, and is an important cultural heritage symbol of Hong Kong. In the area of food supply, while most of our fisheries products are imported, local capture and aquaculture fisheries still play an important role in providing fresh and quality fisheries products to Hong Kong people. At present, fisheries products supplied by local fishermen account for about 20% of local consumption.

39. From a social perspective, there are about 11 000 fishermen and fish farmers in Hong Kong directly engaging in the capture and aquaculture fisheries at present, with the assistance of about 8 000 Mainland fisherman deckhands. Furthermore, quite a number of people are involved in ancillary sectors of the fisheries industry, such as wholesale and retail marketing of fisheries products, transportation and logistics support for fishing vessels (e.g. fuel, ice manufacturing and fishing gear supply). Therefore, the local fisheries industry and its ancillary sectors provide employment opportunities for the group of people who are late in their careers and with low education level and low job mobility.

40. After thoroughly taking into account the international and local fisheries situations as well as various contributions of the industry to Hong Kong's economy and society, the Committee believes the local fisheries industry can develop in a sustainable manner. The goals of the sustainable development of the fisheries industry are to enable fishermen and fish farmers to achieve self-reliance, maintain their own livelihoods and cope with the changing business operating environment, provide job opportunities to the fisheries community and ensure the supply of fresh and quality fisheries products to Hong Kong people. Meanwhile, our society will benefit from a sustainable fisheries industry, as it will help establish and maintain a marine ecological environment that is abundant in resources and can be passed on to our future generations.

## V. Proposed Options and Measures

41. To achieve the goal of the sustainable development of the fisheries industry, the Committee has formulated two directions for promoting the industry's sustainable development:

- (1) To assist fishermen to develop or switch to modernised and sustainable modes of operation;  
and
- (2) To protect, conserve and rehabilitate the marine ecosystem and fisheries resources.

42. The Committee proposes the following measures to promote the sustainable development of the fisheries industry:

- (I) Promote modernisation of the fisheries industry and sustainable modes of operation;
- (II) Control fishing effort of capture fisheries; and
- (III) Conserve and enhance fisheries resources.

43. The Committee considers that promoting modernisation and development of sustainable fisheries will help fishermen switch to other modes of operations, and will facilitate restructuring and diversification of the industry, thereby lowering the operation costs as well as increasing the competitiveness of the industry and enabling fishermen to better cope with the changing operating environment. However, it will take time and require support in various areas to achieve significant results, and it cannot solve the problems of declining fisheries resources and excessive fishing effort in a short time. Therefore, the Committee is of the view that implementation of further measures can be considered, such as controlling fishing effort and protecting the important marine ecological environment and fisheries resources, so as to improve the status of fisheries resources and alleviate the difficulties faced by the industry in a shorter period of time.

44. The Committee is responsible for advising the Secretary for Food and Health on the long-term goals and directions, and the implementation strategy for the sustainable development of Hong Kong fisheries industry. Thus, the Committee aims to provide a clear framework in this report for the Bureau's consideration and follow-up action. After the Government has accepted the Committee's recommendations, the details of the proposed measures and resources required can be worked out based on the framework.



**(I) Promote Modernisation of the Fisheries Industry and Sustainable Modes of Operation**

45. Currently, the technology employed by the fisheries industry in Hong Kong is not advanced enough, resulting in high operating costs and low efficiency, and hence low competitiveness. Thus, the Committee considers that there is a need to provide more supporting measures to promote the modernisation of the fisheries industry and the sustainable modes of operation, and assist fishermen to develop or switch to modernised and sustainable modes of operations or related industries. The Committee suggests that the Government provide assistance through measures outlined in paragraphs 46 to 69.

**(1) Enhance Fishermen's Understanding of Sustainable Fisheries**

46. The policies and measures regarding the fisheries industry could be implemented more effectively, and with less effort, if they are supported and observed by fishermen. Hence, the Committee considers that fishermen should be educated on the concept of sustainable fisheries to raise their awareness of the ecological and economic importance of conserving our marine resources, so that they will be more proactively involved in managing and conserving fisheries and marine resources. The Committee proposes that the AFCD enhance fishermen's awareness on sustainable fisheries through education and promotional activities. The AFCD should consider organising courses, such as concept on modern fisheries, energy saving and environmental protection, to convey the above message to fishermen during the South China Sea fishing moratorium. If fishermen proactively observe the fisheries management measures and report illegal fishing, the Government will face less pressure in enforcing laws and regulations. When situation allows, the Government might even consider allowing fishermen or fisherman's organisations to manage fishing grounds, while the Government and academic institutes could provide technical advice. In the long run, the fisheries industry would be properly managed and the industry and the fishermen's culture could be sustained.

**(2) Promote Fisherman Cooperative Enterprises**

47. The family mode of operation has restricted the development of the fisheries industry. Should fishermen develop new fisheries projects in future, more comprehensive knowledge and considerable financing will be required. The Committee recommends that the AFCD promote the development of the industry, through encouraging fisherman organisations to form cooperative enterprises, and cooperating with academic institutes and non-profit making organisations. The formation of cooperative enterprises

could offer more job opportunities to fishermen, and at the same time attracts interested parties to join fisheries, bringing in new blood for the industry.

(3) **Provide Stable Financial Support to Sustainable Fisheries Development Programmes**

48. In order to promote the formation of fisherman cooperative enterprises and the sustainable development of the fisheries industry, the Committee proposes that financial assistance be provided to fisherman organisations, academic institutes and non-profit making organisations for conducting research and development programmes conducive to improving the industry's operating environment. Such programmes may include projects that support and foster education, scientific research, technical demonstrations and other programmes for the purpose of raising the technological level of the local fisheries industry and facilitating alternative operation or employment, or projects that promote the concept of the sustainable development of the industry, help modernise the local capture and aquaculture fisheries, and enhance their competitiveness (e.g. energy saving).

49. The Committee recommends that a "Sustainable Fisheries Funding Scheme" be established for the purpose of providing financial assistance for projects and researches conducive to the sustainable development of the fisheries industry proposed by local registered non-profit making fisherman organisations, academic institutes, fisherman cooperative enterprises and private organisations. Joint applications by these bodies would be encouraged. As regards the source of funding, the Committee, having made reference to the existing requirement for marine project proponents to make ex-gratia payment to affected fishermen, considers that contribution from marine project proponents (both private and government projects) may be considered as a possible source of funding. This serves to compensate for the impact arising from these projects on the marine ecosystem and fisheries resources. The industry's view on the management and utilization of fund should be sought. The Government can also consider reviewing the current Fisheries Development Loan Fund so as to enable more flexible utilisation of capital (refer to paragraph 50 below).

(4) **Review Fisheries Loans Requirements and Approval Procedures**

50. Currently, fisheries loans are mainly for helping fishermen develop or switch to other operations, improving their fishing operations, and giving them financial support during the implementation of fisheries management measures (such as the South China Sea fishing moratorium implemented by the Mainland authorities). The loan requirements vary depending on their purposes. The Committee proposes that a review on the existing terms and approval procedures for fisheries loans be conducted, such as the loan requirements for incorporating environmentally-friendly and advanced technology and improving

cost effectiveness of fishing vessels, and make appropriate adjustments where necessary, so as to match the fishermen's needs for developing or switching to modernised and sustainable fisheries. Areas recommended for review include purposes of the loans, application eligibility, interest rates, loan guarantees, and mortgage requirements.

(5) **Implement Specific Support Measures for Sustainable Fisheries Operations**

51. With regard to the sustainable development of individual fisheries and related operations, and assisting fishermen in switching to these operations, the Committee has conducted studies on several fisheries and related operations including aquaculture, recreational fisheries, fisheries product logistics and processing, and offshore fishing to evaluate their feasibility and development potential. The Committee considers that aquaculture and recreational fisheries have developed reasonably well among others. They have scope for further development and can provide more feasible and practical opportunities for fishermen.

52. In addition, the Committee recommends that the Government continue assisting the capture industry and promoting its modernisation and sustainable development. The Committee's recommendations for promoting the sustainable development of individual fisheries and related operations are outlined in paragraphs 53 to 68.

***Aquaculture***

53. With increasing public concerns over food quality and safety and rising demands for quality fisheries products, the competitiveness of local fisheries products can be enhanced and the development of local aquaculture can be further boosted through improvement in the aquaculture management, culture techniques, product quality and food safety. The public may also enjoy quality, healthy, safe, diversified and stable supply of local fisheries products. The future development of the aquaculture industry should be based on local species, with less dependence on wild fish fry and fish feed. A stable supply of quality fisheries products, which are farmed using environmentally-friendly, low contamination, high-technology and high quality culture techniques, would be available on the market. Through branding strategies and stringent hygiene standards, the local quality products could be supplied to local, the Mainland and even international markets, thus improving aquaculture's operating environment.

54. While discussing challenges hindering the sustainable development of pond fish and oyster culture, the Committee considered that issues such as land status and statutory regulation have made it difficult to attract new comers, and introduce new operating concepts. Some members suggested

implementing a pond fish or oyster culture licensing system similar to that of the marine fish culture operation. Yet, the Committee concluded that a licensing system would not be able to solve the existing challenges faced by pond fish and oyster farmers, especially problems on land status. And if a licensing system is implemented, pond fish or oyster farmers will have to pay licence fees. Therefore, the pond fish and oyster farmers should be consulted to reach a consensus before pursuing a licensing system. On the other hand, the Committee is of the view that clarifying the issue on land status will be more effective in promoting the sustainable development of pond fish and oyster culture, and therefore recommends the Government explore different ways to clarify land status, so as to achieve sustainable development of the pond fish and oyster culture industries.

55. The Committee noted that in early 2007, the AFCD commenced a voluntary registration scheme for local pond fish farm operators, with a view to assisting fish farmers in enhancing the management of fish farms and the quality and food safety of the cultured fish. The Department keeps detailed records of each registered fish farm, including mode of operation, cultured species, source of fry, types of feed and sales channels. Water and fish samples from registered farms are collected for assessment of water quality and fish health. The Department also promotes good aquaculture practices, provides technical advice on fish disease prevention, and encourages fish farmers to join the “Accredited Fish Farm” scheme.

56. As of the end of 2008, 267 pond fish farms had joined the voluntary registration scheme. The contact details and information on operations of the pond fish farmers obtained by the AFCD through the scheme can be used to help fish farmers to better manage their farms, and enhance the quality of fish and food quality. The Committee therefore does not consider there is an imminent need for implementing a pond fish farm licensing system.

57. The Committee recommends promoting the development of the aquaculture industry through the following measures:

(i) Review Current System for Managing and Regulating Aquaculture

There are 26 fish culture zones designated under the Marine Fish Culture Ordinance. Considerable pieces of land have been designated for agricultural uses, including pond fish farming land, under the Town Planning Ordinance. The Committee proposes that the AFCD review the existing mechanism for managing and regulating aquaculture, without affecting the water quality of the fish culture zones. The review should include studies on the environment and operation in the fish culture zones, review of the moratorium on issuing new marine fish culture licences, and researches on new fish culture areas, the expansion or

rotation of fish culture zones, so as to address future aquaculture development. In addition, the Government could explore and formulate further management measures for fish culture zones and fish farms, such as redeveloping inactive fish farms, designating and demarcating recreational fishing zones and fish stock culture zones, and implementing appropriate regulations on the utilisation of feed and waste treatment.

(ii) Supply of Quality Fish Fry

Currently, fish fry used by local fish farms are mostly imported from overseas, resulting in limited choices of cultured species. The fry cost is also higher than that in fish farming regions where fish fry is locally available (such as the Mainland and Thailand). Hence, the local fish culture industry is uncompetitive as fish fry is concerned.

The Committee proposes that consideration be given to assisting fish farmers or their cooperative enterprises in developing local fish hatcheries through technical workshops, financial assistance and identification of suitable sites for such purpose. At present, the AFCD is conducting hatching trials with and promoting the development of small scale fish fry nurseries on mariculture rafts to fish farmers. The Department has set up an experimental hatchery for the purpose of developing local fish fry hatching techniques. The Committee proposes enhancing researches and training on fry hatching and suggests launching a pilot project, including expanding the facilities of the experimental hatchery, conducting more experiments on hatchery trials with fish farms, and inviting specialists from the Mainland and overseas to offer technical support and training to fish farmers. With better development of fish fry hatching and nursery techniques, local fish farmers may further explore the feasibility of developing hatcheries on a commercial scale.

In the long run, local fishermen will be able to enjoy high-quality, reasonably-priced and stably-supplied fish fry, if a number of large-scale commercial hatcheries can be established with the aim of promoting the development of aquaculture. The hatcheries could also supply some fry for restocking to enhance local fisheries resources.

(iii) Step up Efforts to Develop New Culture Species and Improve Quality of Cultured Fish

To provide a greater variety of choices of species for culture and to improve the quality and taste of cultured fish, the Committee recommends that the AFCD work in collaboration with universities and related organisations to carry out studies on areas such as the culture of new species of fish and shellfish, nutritional requirement, feed, taste and culture standards, and

formulate suitable culture proposals. In addition, the Committee considers the development of green or organic culture operations and the building up of local brand names and features may be encouraged through setting up environmentally friendly fish culture zones and organic fish farms, so that the value and competitiveness of culture products can be enhanced. The Committee also proposes to encourage fish farmers to improve the quality and safety management level of their aquaculture production through education and technical training, with a view to ensuring compliance with food safety requirements and enhancing consumer confidence in local fisheries products.

(iv) Develop Local Fisheries Product Markets

The Committee proposes that the AFCD assist the industry with setting up more sales locations and expanding marketing network for high-quality local fisheries products in the local and Mainland markets through establishing, promoting and advertising the local “Accredited Fish Farm Scheme” and making use of the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA).

(v) Attract and Assist Interested Parties and Fishermen to Join the Aquaculture industry

The Committee proposes that, apart from providing interested parties and fishermen with training, technical support and financial assistance, efforts may be made to help them find suitable sites for aquaculture, provide technical advice on developing new or advanced culture techniques (such as pond fish or indoor culture, and organic culture), and evaluate the feasibility of their plans.

### ***Recreational Fisheries***

58. Having studied some overseas example on recreational fisheries, the Committee is of the view that such activity may help bring about many economic benefits to our society. At present, there are already a variety of recreational fisheries activities in Hong Kong such as recreational fishing and fisherman-culture-related and ecological tourism, in which some fishermen are involved. Given that a relatively low level of technical skills and capital input is required in the development and operation of recreational fisheries, the business is quite suitable for fishermen to operate in general. As such, the Committee believes that recreational fisheries may offer greater opportunities for fishermen to develop or switch to from other modes of operation.

59. Development of local recreational fisheries could result in more local tourist attractions. As recreational fisheries activities develop around fishing ports, tourists could appreciate the regions' scenery and culture, and participate in activities such as recreational fishing, diving, ecotours and fishermen cultural demonstrations, meeting the diverse needs of tourists. The local recreational fisheries activities could also attract tourists and local citizens to visit fishing ports, driving regional economic development and benefiting other industries such as catering, hospitality and tourism.

60. The Committee has considered the proposal of "One licence for two uses" for fishing vessels, which would allow boats to be used for both commercial fishing and carrying passengers for recreational fishing. The Committee was also aware that the AFCD has been working with the Marine Department (MD) to review the conditions for such a licence. However, fishing vessels are not primarily designed for carrying passengers, and it is costly to refit them into pleasure crafts or passenger-carrying boats. Safety is also a primary concern. Hence, the Committee considers that if fishermen plan to switch to recreational fisheries in a long-term, they should purchase pleasure crafts or passenger-carrying boats to operate.

61. The Committee proposes the following measures for promoting development of the recreational fisheries:

(i) Enhance Operating Environment

The Committee recommends that the AFCD, in cooperation with the Tourism Commission, the Home Affairs Department, other related departments and non-profit making organisations, expand the existing market to provide additional opportunities for interested fishermen to develop or switch to recreational fisheries operation. Feasible measures include:

- Designate appropriate locations as FPAs or marine parks. Create and improve recreational fisheries scenic spots by deploying artificial reefs and performing restocking.
- Review the management of recreational fishing on mariculture rafts. Explore ways to simplify application procedures, and increase flexibility for operations.
- Identify and upgrade scenic spots and routing design for the recreational fisheries industry as well as strengthen publicity to attract more tourists.

(ii) Assist Interested Fishermen to Switch to Recreational Fisheries

The Committee considers the AFCD can provide loans, technical support and training to help interested fishermen to develop or switch to recreational fisheries. For example, loans

may be made available to fishermen for the purposes of purchasing pleasure crafts or passenger-carrying boats. Technical assistance in aspects such as purchasing or building pleasure crafts or passenger-carrying boats, identification of recreational fisheries scenic points, routing design, promotion and publicity, boat operations, marine safety and knowledge on touring techniques may also be provided. The AFCD should also arrange training courses on touring techniques for fishermen who are interested in switching to recreational fisheries.

### ***Fisheries Product Logistics and Processing***

62. The Committee studied the development of fisheries product trade in Hong Kong, the Mainland and neighbouring regions, such as fisheries product wholesale markets and logistics centres in the Mainland, and fisheries product markets in Tsukiji of Japan and Pusan of South Korea. The Committee has also contacted some local fisheries product traders to gather views on developing the fisheries product logistics and processing industry in Hong Kong.

63. Summarising the information gathered, the Committee considers that Hong Kong possess some qualities for setting up a fisheries product logistics centre, such as liberal import-export controls, convenient customs declaration and clearing procedures, and highly efficient transportation and communications facilities. There are also some unfavourable factors for such development, including low imports, exports and re-exports of fisheries products, lack of supporting industries and facilities, and competition with fisheries product logistics centres in neighbouring regions. These factors restrict the development of the fisheries product logistics and processing industry.

64. More importantly, a fisheries product logistics centre is a centralised facility for loading, storage, processing and trading, and a distribution and import-export centre operating on the concept of logistics management. As local fishermen are generally older, not highly educated, in lack of professional knowledge and techniques of contemporary trading and supply chain management, they have no competitive edge while logistics management and international connections are concerned for advanced facilities and relatively high operation capital are required in these areas. Therefore, setting up a logistics centre may not be able to provide fishermen with many opportunities for switching to the fisheries product logistics and processing industry. Typical fishermen are not likely to participate in and benefit from the development of a fisheries product logistics centre.



65. The Committee considers a more feasible option is to explore ways to further enhance the function and scope of existing fisheries product wholesaling facilities and services. To promote the development of fisheries product trade will in turn help fishermen switch to this operation.

66. The Committee considers the following measures can promote the development of trade in fisheries products:

(i) Enhance Operating Environment

The Committee proposes making use of the FMO framework to promote local fisheries product trade, facilitate researches on fisheries product processing and refrigeration techniques, develop and market local fisheries products. In addition, the development of marketing network may also be facilitated through means such as branding, promotion and publicity activities, and CEPA. In recent years, the FMO has been committed to developing new services. Currently, in addition to the wholesaling of frozen marine fish, providing anchoring lots for ships, loading and storage facilities, offices and parking lots, the FMO allocates some of the market space to seafood wholesalers and distributors for wholesaling and distributing fresh marine fish and other seafood. Wholesale marketing and management services are also provided to fish merchants, distributors and buyers. The FMO set up the fisheries product processing centre in 2005 to provide high-quality local fisheries products. Local fisheries products are promoted to local, Mainland and overseas markets, and the sales network is expanded through participation in food and fisheries product exhibitions.

(ii) Assist Fishermen in Switching to Fisheries Product Logistics Industry

The Committee recommends that consideration be given to allocating spaces in FMO markets to fishermen or cooperative enterprises formed by fishermen to assist them to kick-start their business. The Committee also proposes to provide fishermen with financial support, training and technical assistance in fisheries product trading, processing and transportation to enable them to be better prepared and equipped for switching to the related operations, and to encourage fishermen to form co-operative enterprises to source funds to start their trading business.

### ***Offshore Fishing***

67. As most offshore fisheries resources are approaching their maximum sustainable yields with minimal potential for development, and substantial investment and improvement in relevant operational and management skills are required for developing offshore fisheries, the Committee considers there are

not many local fishermen who are capable of and willing to switch to offshore fishing. The Committee considers that the development of offshore fishing should not be the focus of sustainable fisheries development; nor should excessive resources be channelled into offshore fishing. However, the Committee holds that having considered the cost-effectiveness of the proposals, the AFCD should provide suitable technical support, liaison services, training and credit facilities for interested fishermen and fishing companies to help them develop offshore fishing.

### *Capture Fisheries*

68. The technology employed by the local capture fisheries is not advanced enough, resulting in high operating costs and low efficiency, and hence low competitiveness. For instance, most of the large fishing vessels in the territory are equipped with high-powered and high fuel-consuming engines, which have pushed up the operating cost. The Committee recommends that the AFCD assist fishermen who remain in the capture fisheries in adopting advanced, environmentally-friendly, cost-efficient and safe modes of operating. The Committee proposes strengthening researches and development on aspects of capture fisheries such as energy-saving technology (by using engines with lower horse power, and nets with lower resistance), selective fishing methods and gear, and fish storage techniques, so as to help fishermen reduce fuel costs and loss rate, and increase the value of fisheries products. These measures could also help reduce capture of non-target fish and fry, alleviating the impact of fishing on fisheries resources. The Government should also encourage capture fishermen to develop or switch to sustainable fisheries sectors, as covered in paragraphs 53-67.

#### (6) **Strengthen Communications with Mainland Counterparts to Help Fishermen Seek Business Opportunities**

69. The Committee also proposes that the AFCD and other relevant departments strengthen connections and exchanges with fisheries departments and companies in the Mainland to keep abreast of the fisheries policies and the latest developments in aquaculture, recreational fisheries, fisheries product logistics and processing, offshore fishing and capture fisheries in the Mainland. Relevant information and appropriate channels should be provided for fishermen interested in developing fisheries in the Mainland. Assistance should be provided to help them contact relevant departments and companies, so that they can seize business opportunities and implement plans for development.

**(II) Control Fishing Effort of Capture Fisheries**

70. As noted in paragraph 27, the catch and fishing effort of capture fisheries have far exceeded experts' estimates of the maximum sustainable yield and optimum fishing effort. The Committee considers the above measures to promote modernised and sustainable operations cannot solve the problems. Further measures should be considered to control the fishing effort of local capture fisheries.

71. At present, fishing vessels operating in Hong Kong waters are required to obtain vessel operating licences from the MD. However, the licensing system is aimed to control mainly the navigation of vessels from the vessel safety and seaworthiness point of view, but not on the use of the vessels. Apart from the prohibitions on destructive fishing practices and fishing activities in certain areas such as the marine parks and the principal fairways, there are no restrictions on fishing activities in Hong Kong waters. This has made it very difficult for the Government to control overfishing or enforce any related management measures for the sustainable development of the fishing industry. Therefore, the Committee recommends that a regulatory mechanism to enforce appropriate fisheries management and control fishing effort in Hong Kong waters be established in the first place. The recommended regulatory mechanism may include the measures outlined in paragraphs 72 to 85 below.

**(1) Maintain an Appropriate Number of Fishing Vessels**

72. Although the number of fishing vessels in Hong Kong is decreasing, research by the South China Sea Fisheries Institute shows that the fishing effort in Hong Kong still exceeds that of the most suitable number of fishing vessels (see paragraph 27). Therefore, the Committee believes it is necessary to control the entry of new fishing vessels and the re-entry of retired fishing vessels to capture fisheries. However, in certain cases, new fishing vessels should be allowed to enter the industries, for example, when a new fishing vessel is replacing an old vessel, or when the fishing operation takes place outside Hong Kong waters.

73. The proposed management measures can only be implemented by amending the existing legislation. The Committee has studied the need to establish a new fishing licence system, and through controlling the issue of new fishing licences and imposing licence conditions, to better manage the fishing industry. On the other hand, consideration may be given to implementing the relevant measures by means of appropriate legislative amendments and making use of the fishing vessel licences issued by the MD. The Committee believes that the AFCD, the MD and other departments should study on measures to restrict the entry of new fishing vessels. However mechanism should be designed to minimize

inconvenience, and avoid additional licence fees. At the same time, it should control the growth of the overall number of local fishing vessels (including fishing vessels that operate within and outside Hong Kong waters).

74. Furthermore, to obtain information on the status of and changes to fisheries resources in local waters, the Committee proposes that the AFCD undertake continuous assessment and monitoring of the fisheries resources in local waters. The data obtained may provide a scientific basis for establishing appropriate fisheries management measures, help reviewing and determining the most suitable number of fishing vessels and the level of fishing effort for Hong Kong waters, and be used for assessing the effectiveness of the recommended measures in achieving the recovery of marine resources.

(2) **Prohibit Fishing by Non-Local Vessels in Hong Kong Waters**

75. Even though the activities of non-local vessels in Hong Kong waters are regulated by various legislative provisions (e.g. Immigration Ordinance), to effectively control the fishing effort in Hong Kong waters, the Committee suggests prohibiting, through legislation, fishing in Hong Kong waters by non-local fishing vessels. The Committee believes that the proposed measures, together with stepped-up enforcement, will better deter fishing activities in Hong Kong waters by non-local fishing vessels.

76. In addition, to more effectively control fishing activities in local waters, the Committee recommends that fishing by local non-fishing vessels in Hong Kong waters be restricted. Only approved fishing gear or fishing method (like hand lining) is permitted on these vessels for recreational fishing. This is a basic regulation on recreational fishing on any vessels. The Committee also proposes that the Government promote to the public and stakeholders the appropriate concept and etiquette for recreational fishing, through enhancing education and publicity, and formulating guidelines on recreational fishing activities. Further studies may be conducted on the need for imposing further regulations on recreational fishing on vessels or ashore if necessary.

(3) **Ban Trawling in Hong Kong Waters**

77. Research has shown that Hong Kong waters are important spawning and nursery grounds for offshore and Pearl River estuarine fish stocks. Trawling in inshore waters, because of its non-selective nature, would capture fingerlings even though they have no immediate commercial value, thereby seriously affecting the recovery ability and the production of offshore and estuarine fisheries resources. While intensive bottom trawling disturbs and alters the seabed, thus reducing the quantity and diversity of marine species, hang trawling also has a serious negative impact on planktonic fingerlings and fish fry.

78. In fact, inshore trawl ban has been implemented by many countries and places to conserve fisheries resources. The Mainland prohibits bottom trawling activities all year round in waters of less than 40 metres in depth in the South China Sea, whereas an annual fishing moratorium in the South China Sea from mid May to August is also in place to ban all sorts of trawling, purse-seining and stake-netting activities. Countries like Australia, Brazil, Canada and Malaysia have established no-trawl zones in inshore waters to protect the demersal ecosystem and special regions such as fish spawning and nursery grounds, and coral reefs. Indonesia has even banned trawling in the whole country.

79. It is estimated that there are approximately 1 200 trawlers in Hong Kong, representing 30% of the total number of local fishing vessels. In terms of engine power, however, the trawlers account for 85% of the total fleet. Of the 1 200 trawlers, about 650 large trawlers mainly operate in the Mainland waters, while the remaining 550 small-to-medium size trawlers operate partly or wholly in Hong Kong waters.

80. The Committee believes that if the composition of fishing vessels can be restructured to restrict trawling and more selective fishing methods can be employed by other fishing vessels in Hong Kong waters, the recovery of fisheries resources will be enhanced and more effective. On the other hand, if trawling is banned in Hong Kong waters, the remaining total engine power will be reduced to a level below the optimal fishing effort. To step up the protection of fisheries resources in spawning and nursery grounds, and reduce fishing effort in Hong Kong waters, the Committee proposes to ban all trawlers (including pair trawlers, stern trawlers, shrimp trawlers and hang trawlers) from operation in local waters through amending the existing legislation. At the same time, the Committee considers it is necessary to provide assistance to 550 trawler fishermen who are expected to be affected by this measure. As the majority of the larger trawlers (about 650 vessels) operate mainly outside Hong Kong waters, the proposed ban is expected to have little impact on them.

#### **(4) Assist Trawler Fishermen to Switch to Other Operations**

81. The Committee recognizes that if the proposed trawl ban is implemented, the livelihood of some inshore trawler fishermen will be affected. To address the concerns of the affected fishermen and help them tie over the transitional period, the Committee recommends that training, technical support and financial assistance be offered to help them switch to other operations. Besides, appropriate financial assistance, such as the introduction of a vessel buyout scheme to purchase their trawlers at a reasonable price, may also be considered. This will help solve the livelihood problems faced by the affected fishermen, who can use the money as seed capital for switching to sustainable fisheries or other industries. The proposal will also proactively reduce the number of trawlers and the overall fishing effort, thus help

restore the fisheries resources in Hong Kong waters. The livelihood of those remaining fishermen operating in Hong Kong waters will improve as their catches increase.

82. For trawler fishermen who choose to continue operating outside Hong Kong waters, the Committee proposes to help them improve the energy efficiency of their vessels and reduce their operating costs through the provision of technical and financial assistance. Besides, continuous effort should be made to assist and encourage them to switch to sustainable operations (see paragraph 68).

83. Measures should be implemented to limit the re-entry or entry of fishing vessels and control the increase in fishing effort. Although banning trawling and launching the trawler buyout scheme in phases may give the trawler fishermen more time for considering the measures, the implementation of which will slow down the process of reducing fishing effort. However, if the Government decides to launch a trawler buyout scheme, there should be certain restrictions, such as prescribing that only those who possess a valid vessel operating licence issued by the MD before a particular date are eligible to apply for the scheme. This can prevent speculative activities and ensure the proper use of public funds.

84. During the consultation period, the proposal of a trawler buyout scheme has generated considerable discussion. Various fisherman's organisations have given different comments on the standard reference price for fishing vessels and the implementation of the buyout scheme. Little opposition from the fishermen is expected if the buyout scheme is launched on a voluntary basis and that the fishermen have a right to choose whether to join the scheme or not. Also, money from the buyout scheme will help fishermen who are willing but unable to leave capture fisheries to switch to other industries. However, fishermen may have different expectations regarding a reasonable buyout price. If the buyout scheme is mandatory in nature, its effectiveness will be much more apparent, but the terms of which will be more controversial. Besides, other mandatory regulations, such as banning trawling in Hong Kong waters, may be considered to complement the mandatory scheme. The Committee supports in principle the fishing vessel buyout scheme, and proposes that the scheme be implemented on a voluntary basis, in phases and with fixed buyout prices. At the same time, there should be an effective regulation mechanism to control new entrants and the increase of fishing vessels. The Committee believes that if the Government accepts in principle the trawler buyout proposal, detailed study and full consultation must be conducted before decisions are made on implementation, buyout prices, and sources of funding for the scheme. The Government should also allocate resources for procedures such as approval of applications, surveying and disposal of vessels. The Committee proposes that before implementing the trawler buyout scheme, there should be thorough discussions involving stakeholders on issues and technical problems involved in implementation. The effectiveness of buyout scheme should be frequently monitored and reviewed to ensure that the objective of reducing fishing effort is achieved.

**(5) Strengthen Fisheries Management and Law Enforcement**

85. To strengthen protection of fisheries resources in Hong Kong waters, the Committee recommends that the Government step up the number of marine patrols and enforcement. To effectively implement the measures on fishing activities and combat illegal fishing, communications and cooperation between relevant departments like the AFCD and the Marine Police should be strengthened, and fishermen and the public should be educated regarding the work on fisheries laws and regulations. The Committee also recommends that the Government maintain close ties and cooperate with relevant authorities in the Mainland when formulating fisheries management measures, so as to combat entry of the Mainland fishing vessels into Hong Kong waters and illegal fishing activities in marine parks and ensure the successful implementation of management measures.

**(III) Conserve and Enhance Fisheries Resources**

86. While reducing the fishing effort, the Committee believes that certain measures may be adopted to protect the important marine and fisheries ecological environment, such as spawning and nursery grounds, and to promote the recovery and growth of fisheries resources in Hong Kong waters. Paragraphs 87 to 94 outline the measures proposed by the Committee for achieving these objectives.

**(1) Strengthen Regulation of Coastal and Marine Development Projects**

87. Hong Kong, like many other regions, faces the reduction of fisheries resources and deterioration of the marine environment caused by unfavourable factors such as coastal and marine development projects, sewage discharge and overfishing. Hence the fisheries resources can no longer sustain the current number of fishing vessels and fishing effort in Hong Kong, and catch continues to decline. The Committee is aware that the Administration has put in place various measures, such as enforcing legislation governing environmental impact assessments, water pollution control and designation of marine parks, and implementing schemes to strengthen control of pollution sources and improve sewage treatment, to reduce the impact of development works and water pollution on the marine environment (See Annex III (11)-(18)).

88. However, the Committee considers that in addition to strict enforcement of relevant legislation, the numbers of coastal and marine development projects should be reduced, while good construction practice and project supervision should be in place to reduce the impact on marine environment. The Committee also recommends that proponents of marine works fully consult stakeholders during the early

stages or before their projects commence, to reduce the projects' impacts on marine fisheries resources and fishermen. Further, the Committee also encourages the proponents of marine works to refer to the current mechanism for granting ex-gratia allowances, and invest in the Sustainable Fisheries Funding Scheme (see paragraph 49) to promote development projects for recovering and enhancing fisheries resources, or assisting fishermen to switch to alternative livelihood.

(2) **Designate Fisheries Protection Areas**

89. The Committee proposes that a legal mechanism be established to designate important spawning and nursery grounds within Hong Kong waters as FPAs and management measures in these areas (such as setting up “no take” zones and implementing a “closed season”) be strengthened in order to protect the fish fry and spawning fish from being over-exploited. Since trawling is a non-selective fishing method that has great impact on the marine ecosystem, consideration should be given to prohibiting this fishing method in the FPAs. If necessary, other regulatory measures, such as banning other non-selective fishing methods (like trammel nets), banning the catch of fish fry, enforcing a seasonal fishing moratorium and establishing no-take zones, may also be implemented within the FPAs. In addition, consideration may also be given to deploying artificial reefs and carrying out fish restocking in order to enhance the fisheries resources. As the regulatory measures in the proposed FPAs will apply to any fishing vessels engaged in fishing activities (including recreational fishing) within these areas, there is no need to set up a fishing permit system for the purpose.

90. To effectively implement the proposed designation of FPAs and management measures, the Government has to amend the existing Fisheries Protection Ordinance. Also, the Government should consult fishermen and other stakeholders on the locations and management of the FPAs, and measures to increase fisheries resources, in order to ensure protection of fish fry and spawning fish in the FPAs.

91. To reduce the impact of the proposal on fishermen, consideration may be given to setting up the FPAs in phases and aligning them with the development of recreational fisheries. While the specific locations require detailed assessment, the first phase may include designating Tolo Harbour and Port Shelter as FPAs and delineating the waters within the FPAs where artificial reefs have been deployed as “no take” zones. Subsequently, measures such as deployment of more artificial reefs and fish restocking, coupled with the designation of more “no take” zones and “fishable artificial reef areas”, and implementation of a “closed season” after fish restocking, may be pursued to promote the rehabilitation and growth of fisheries resources within the FPAs. In parallel, Government efforts may be made to foster the development of recreational fisheries in the FPAs and assist fishermen to switch to recreational fisheries. Upon completion and review of the first phase, the second phase may be launched to establish



additional FPAs and implement similar fisheries management and enhancement measures, as well as introduce restrictions on other non-selective fishing gear (e.g. trammel nets).

(3) **Prohibit Commercial Fishing in Marine Parks**

92. At present, about 380 fishermen hold fishing permits that allow them to fish in marine parks. Having studied some examples on marine protection areas in other regions, the Committee recommends that commercial fishing be prohibited in the marine parks to enhance protection of our important marine ecology, and appropriate measures such as technical and financial support be adopted to assist affected fishermen with fishing permits. The Committee is aware that, during the public consultation period, the Government has already agreed in principle to implement this proposal.

93. Legislation must be amended before prohibiting commercial fishing in marine parks. The Government may establish more marine parks or implement stricter management measures depending on the effectiveness of the measures. When introducing these measures, assistance may be provided to the affected fishermen. In addition, the Committee believes that artificial reefs may be deployed in waters outside the marine parks with less activities to create scenic spots for fishing and replace the fish grounds in marine parks.

94. The Committee has discussed the proposal of banning all fishing activities in the FPAs and marine parks. Since the proposed no-take zones represent 9.8% of Hong Kong waters, it is estimated that about 2 600 fishing vessels and 5 800 Hong Kong fishermen will be affected. The proposal will affect many fishermen's livelihoods, therefore the Committee believes that the Government should carefully consider the proposal and ensure a balance between the protection of marine and fisheries resources and the fishermen's livelihoods. The Committee also recommends that the Government consider providing appropriate assistance to the fishermen who will be affected before establishing the FPAs and no-take zones.

95. An overview of the overall proposal and measures outlined above can be found in Annex IV.

**Expected Results**

96. The annual capture fisheries production in Hong Kong waters is some 26 700 tonnes, of which 12 000 tonnes are catches by some 550 trawlers operating partly or wholly in Hong Kong waters. According to the analysis in paragraph 27, the catch and effort of capture fisheries in local waters have far exceeded experts' estimates of the maximum sustainable yield and optimum effort. If trawling is banned

in Hong Kong waters, the total engine power of fishing vessels operating in local waters can be substantially reduced by over 70%, i.e. from 270 000 kW to 64 000 kW, and fish production will be lowered by more than 40%, i.e. from 26 700 tonnes to 14 700 tonnes. Therefore, the proposed measures can be effective in maintaining the overall engine power and fish catch of fishing vessels operating in Hong Kong waters at optimal levels, i.e., below the estimated level of maximum sustainable yield and around the level of maximum economic yield. These measures would also conserve inshore nursery grounds, improve the marine ecosystem, and bring about an improvement to both the variety and quantity of fish stocks, thus contribute greatly in marine conservation and the recovery of fisheries resources.

97. Moreover, according to the estimated projections of the ecosystem simulation for Hong Kong waters conducted by the University of British Columbia in Canada, if measures including controlling the growth of the fishing fleet, banning trawling in Hong Kong waters and designation of FPAs/“no take” zones etc. are introduced, Hong Kong’s fisheries resources and the catch value per unit effort would be 50% and 70% higher respectively in 25 years’ time than if no such measures are taken.

98. The Committee considers that through the above proposals and measures for controlling the fishing effort of capture fisheries, and conserving and increasing fisheries resources, the currently excessive fishing effort can be reduced to a level below the maximum sustainable yield, and important fish spawning and nursery grounds in Hong Kong waters can be conserved. If the proposed measures can be implemented together with the fishing vessel buyout scheme and measures to promote modernisation and sustainable development of the fisheries industry, the Committee considers that they can assist fishermen with developing or switching to modernised and sustainable modes of operation or other related industries. Those who continue to engage in capture fisheries will then benefit from the improvement and recovery of marine fisheries resources. Consequently, the whole fisheries community will be better off and able to cope with the changing operating environment and achieve self-reliance. Meanwhile, active recovery of fisheries resources in Hong Kong waters will enable the public to enjoy a sustainable marine environment.

99. If the proposals and measures are successfully implemented, the future capture fisheries will largely comprised of small-to-medium size non-trawlers engaged in inshore capture fisheries, while an appropriate number of large trawlers and fishing vessels of other types will mainly operate outside Hong Kong waters. The Committee also believes that proposals and measures that promote modernisation and sustainable modes of operation can improve the operating environment for other sustainable fisheries, and related industries such as aquaculture, recreational fisheries, fisheries product logistics and processing, by increasing market access, widening the scope of development, and improving the trade’s technical standards and competitiveness. This will create more opportunities and favourable conditions for

fishermen to develop or switch to sustainable modes of operation, provide chances for those wishing to join the fisheries industry and promote sustainable development of the fisheries industry.

### **Proposed Strategy**

100. The Committee considers that the above options and measures should be implemented with a comprehensive strategy and appropriate timetable for promoting sustainable development of the fisheries industry. A comprehensive proposal can also allow fishermen sufficient time to understand and consider the measures, and make plans before they are implemented. This will help the successful implementation of the measures.

101. The Committee recommends that the proposed measures be implemented in phases. Those that can be implemented using existing resources or within the existing legal framework can be pursued in the short run and in an ongoing basis, to assist fishermen with developing or switching to modernised and sustainable fisheries. Such measures include enhancing fishermen's understanding of sustainable fisheries, promoting fisherman cooperative enterprises, providing stable financial assistance for sustainable fisheries development programmes, reviewing fisheries loans requirements and approval procedures, strengthening fisheries management and law enforcement, and implementing specific support measures for sustainable fisheries operations.

102. The proposals for controlling fishing effort and conservation of fisheries resources, such as maintaining an appropriate number of fishing vessels, restricting or prohibiting non-local fishing vessels from fishing within Hong Kong waters, banning trawling in Hong Kong waters, establishing FPAs, and prohibiting commercial fishing in marine parks, can only be effectively put in place after successful legislative amendment and/or fund seeking application. The Committee recommends that the Government formulate appropriate measures (including buyout schemes for trawlers, and marine park fishing permits) for fishermen who will be affected to safeguard their livelihoods. The Committee considers it may take several years to implement the options and measures, depending on the progress and results of the stakeholder consultations, legislative amendments and funding applications.

103. Please refer to Annex V for the projected timetable for implementing the proposed options and measures.

**Public Consultation**

104. Between August and October 2008, the Committee consulted stakeholders on the initial draft of the options and measures. Stakeholders included fisherman and fish farmers associations, academics, environmental protection groups and non-governmental organisations, the recreational fishing sector and related organisations, advisory committees related to fisheries and marine conservation, the District Councils, the Heung Yee Kuk, and other organisations and individuals that had submitted views to the Committee. The results of the consultation show that stakeholders generally support the proposals' goals and directions, and consider that they should be fully consulted regarding the details of the measures. Most stakeholders support measures for promoting modernising and sustainable operations, including providing appropriate financial assistance for enhancing all sustainable fisheries, such as aquaculture and recreational fisheries, and assistance with technology, scientific research and professional training. Furthermore, some stakeholders propose measures such as providing more assistance to the industry to establish hatcheries and develop advanced aquaculture technology. They consider the proposals of the Committee can alleviate the problem of excessive fishing effort, and aid the protection and recovery of the marine ecosystem and marine fisheries resources. Although fishermen hold different views on banning trawling in Hong Kong waters and the prohibition of commercial fishing in marine parks, they generally believe that the options and measures are acceptable, providing that the price of trawler buyout scheme is fair, and specific measures are in place to properly solve the livelihood problems faced by the affected fishermen.

105. After gathering and deliberating comments from different stakeholders, the Committee has made appropriate amendments to the preliminary options and measures, and formulated the measures outlined in this report. The Committee considers the Government should conduct further consultation and consider the views of the industry and other stakeholders when studying and drawing up the details of a particular measure, so as to strike a balance between differing opinions and gain widespread support for the proposals.

**VI. Conclusion**

106. The fisheries industry has long played an important role in Hong Kong's economy and society. Although the size of local fisheries industry has changed with the times, and some fishermen are facing internal and external challenges, the Committee considers it worthwhile to preserve the local fisheries industry. By assisting fishermen to switch to other operations, improving the fisheries resources and management, and restructuring the industry, Hong Kong's fisheries industry can be steered towards sustainable development. This will not only give the fishermen new drive to maintain their own livelihoods, but also ensure that the community continues to enjoy local, fresh and quality fisheries products.

107. The Committee's options and measures have been formulated after balancing the needs of all parties concerning the development of the fisheries industry and marine conservation, and adequately considered the opinions of different stakeholders.

108. The Committee understands the fisheries community expects the proposed measures in the report can swiftly and effectively help fishermen to overcome the existing challenges, and enable the industry to achieve sustainable development. However, successful implementation of the proposals will depend on support from and collaboration with the Government, the industry, and the public (including the Legislative Council).

109. The Committee recommends that the Government strive to consider and balance the opinions of different parties whilst studying and implementing the measures, so as to formulate details for implementing the options and measures, and achieve widespread support for them.

110. In the meantime, the industry should be prepared to make changes in response to current and future challenges, and should strive to tie in with the proposals. While the public and Legislative Councillors consider the public resources required for and the various impacts of implementing the proposals, they should keep in mind that the proposals will not only facilitate sustainable development of the local fisheries industry, but will also help rebuild and maintain a rich marine ecosystem, which can be passed on to future generations and benefit the whole community. By taking account of such benefits, they should consider supporting the proposals. The Committee hopes the Government, the industry and the general public can work together, provide mutual support, and coordinate efforts to enable smooth implementation of the options and measures.

**The Committee on Sustainable Fisheries**

**March 2010**

**Working Papers of the Committee on Sustainable Fisheries**

<b>Working Paper No</b>	<b>Topic</b>
CSF WP 1/06	Terms of Reference and Membership
CSF WP 2/06	Guidelines on Declaration of Interest
CSF WP 3/06	Suggested Topics and Schedule for Discussion
CSF WP 4/06	Trends of International Fisheries Development, Fisheries Resources and Trade
CSF WP 5/06	Ecological Sustainability and Economic Viability of Hong Kong Capture Fisheries
CSF WP 6/06	Measures for Sustainable Development of Hong Kong Fisheries Management and Support to the Industry
CSF WP 1/07	Status and Trends of International and Hong Kong Aquaculture, Measures for Sustainable Development of Hong Kong Aquaculture Industry, and Economic Viability of Local Aquaculture
CSF WP 2/07	Economic Contributions by and Competitiveness of Hong Kong Fisheries Industry
CSF WP 3/07	Status of Hong Kong Marine Conservation
CSF WP 4/07	Fisheries Policies and Management Measures of Different Countries
CSF WP 5/07	Arrangements for Study Trips
CSF WP 6/07	Arrangements for Studying the Situation of the Local Fisheries Industry
CSF WP 1/08	Future Direction of the Committee on Sustainable Fisheries
CSF WP 2/08	Conservation and Restoration of Fisheries Resources
CSF WP 3/08	Timetable for the Consultation Exercise of the Committee on Sustainable Fisheries
CSF WP 4/08	Consultation Paper on Sustainable Fisheries
CSF WP 5/08	Buyout Scheme for Fishing Vessel and Fishing Licences
CSF WP 6/08	Fishing Moratorium
CSF WP 7/08	Establishment of Fisheries Protection Areas or No-take Zones
CSF WP 8/08	Deployment of Artificial Reefs

CSF WP 9/08	Financial Support Measures for the Fisheries Industry
CSF WP 10/08	Fish Restocking
CSF WP 11/08	Measures to Facilitate the Development of Hong Kong Aquaculture Industry
CSF WP 12/08	Switching to Recreational Fisheries
CSF WP 13/08	Measures to Assist Hong Kong Fishermen to Develop Offshore Fishing
CSF WP 14/08	Pilot Study of Suggestions for Developing a Fisheries Product Logistic Centre in Hong Kong
CSF WP 15/08	Continuation of the Study of Suggestions for Developing a Fisheries Product Logistic Centre in Hong Kong
CSF WP 16/08	Opinions Submitted or Transferred to the Committee on Sustainable Fisheries
CSF WP 17/08	Proposals for Achieving Sustainable Development of the Fisheries Industry
CSF WP 18/08	Consultation Paper on Proposals for Sustainable Development of the Fisheries Industry
CSF WP 19/08	Views Collected During the Consultation Period
CSF WP 20/08	Summary of Consultation Results
CSF WP 21/08	Draft Outline of the Report of the Committee on Sustainable Fisheries
CSF WP 1/09	Draft Report of the Committee on Sustainable Fisheries
CSF WP 2/09	Revised Draft Report of the Committee on Sustainable Fisheries
CSF WP 1/10	Report of the Committee on Sustainable Fisheries



**Activities of the Committee on Sustainable Fisheries**

<b>Activity</b>	<b>Date</b>
1st Committee Meeting	14 December 2006
2nd Committee Meeting	30 March 2007
Study Trip on Local Fisheries	12 May 2007
Seminar with the Delegation of Bureau of Fisheries of the Ministry of Agriculture	2 July 2007
Guangdong Study Trip	15 to 17 July 2007
The 3rd Committee Meeting	27 July 2007
Study Trip on Local Fisheries	6 December 2007
4th Committee Meeting	14 January 2008
5th Committee Meeting	1 February 2008
6th Committee Meeting	18 February 2008
7th Committee Meeting	28 February 2008
Attending the Marine Parks Board Meeting	6 March 2008
8th Committee Meeting	18 March 2008
Attending the Aquaculture Sub-committee Meeting	7 April 2008
9th Committee Meeting	15 April 2008
10th Committee Meeting	29 April 2008
Attending the Fish Marketing Advisory Board Meeting	10 April 2008
Consultation Forum with Hong Kong Fishery Alliance	15 July 2008
Consultation Forum with Shau Kei Wan Fishermen's Organisations	21 July 2008
Consultation Forum with Cheung Chau Fishermen's Organisations	22 July 2008
Consultation Forum with Tuen Mun Fishermen's Organisations	23 July 2008
Consultation Forum with Joint Committee of the Hong Kong Fishermen's Organisations	25 July 2008

## TRANSLATION

CSF WP 1/10

11th Committee Meeting	12 August 2008
Consultation Forum with Shau Kei Wan Fishermen's Organisations	8 September 2008
Consultation Forum with Joint Committee of the Hong Kong Fishermen's Organizations	9 September 2008
Consultation Forum with Tuen Mun Fishermen's Organisations	9 September 2008
Consultation Forum with Cheung Chau Fishermen's Organisations	10 September 2008
Consultation Forum with Hong Kong Fishery Alliance	11 September 2008
Consultation Forum with Stakeholders of the Fisheries Industry	12 September 2008
Consultation Forum with Aberdeen Fishermen's Organisations	18 September 2008
Consultation Forum with the Federation of Hong Kong Aquaculture Associations	19 September 2008
Consultation Forum with Tai Po Fishermen's Organisations	19 September 2008
Consultation Forum with Sai Kung Fishermen's Organisations	22 September 2008
Consultation Forum with International Fisheries Organisations Alliance	29 September 2008
Consultation Forum with Aquaculture Industry	8 October 2008
Consultation Forum with Sai Kung Fishermen's Organisations	9 October 2008
Consultation Forum with Pond Fish Culture Industry	21 October 2008
Attending the Southern District Council Meeting	13 November 2008
12th Committee Meeting	24 November 2008
13th Committee Meeting	6 July 2009

**Measures to Support Sustainable Development of the Local Fisheries Industry and Marine Conservation in Hong Kong**

**Measures to Support Sustainable Development of the Local Fisheries Industry**

- (1) **Financial support:** Through various fisheries loan funds, the Government provides fishermen and fish farmers with low interest loans to help them develop or switch to sustainable operations, and meet operational needs. The major loan funds include:
- (i) **Fisheries Development Loan Fund** — helping fishermen working in capture fisheries switch to sustainable fisheries or related operations in the industry, including aquaculture, recreational fisheries, offshore fishing, and fisheries product transportation and processing, in order to reduce fishing activities in Hong Kong waters and conserve local fisheries resources; and assisting fish farmers to develop or enhance their aquaculture businesses, in order to improve the quality of aquaculture fisheries produces, enhance food safety standards, and strengthen market competitiveness.
  - (ii) **Fish Marketing Organization Loan Fund** — making short-term loans to fishermen to meet operational needs (e.g. through repairs to or replacement of fishing vessels, ship accessories and equipment), and helping fishermen affected by the fishing moratorium in the South China Sea to meet their needs and prepare for the resumption of fishing after the moratorium.
  - (iii) **Kadoorie Agricultural Aid Loan Fund** — making loans to farmers, pond fish operators and mariculturists for development and working capital. The loans can be used to purchase livestock, fish fry, fish feed, fertilizers, etc., to maintain the materials required for production and to improve the facilities of farms and fish farms, in order to achieve higher productivity and compliance with requirements for environmental protection.

In addition, the Government established the Emergency Relief Fund to provide prompt assistance to fish farmers who are adversely affected by natural disasters, and assist them with resuming operations as early as possible.

- (2) **Technical support and training:** To improve the competitiveness and efficiency of local fisheries, the Government provides fishermen and fish farmers with technical advice in various areas and a wide range of training courses and seminars, which help them acquire the required knowledge and skills, and develop or switch to sustainable fisheries and related operations. The Government also sponsors the fishermen and fish farmers to participate in fisheries related training courses through the Government-managed Marine Fish Scholarship Fund. In addition, the Government

also help assess the development proposals of fishermen and fish farmers and advise on their feasibility.

- (3) Liaison services: the Government maintains liaison with mainland China and overseas fisheries authorities and agencies to obtain information on sustainable fisheries and related operations such as aquaculture, recreational fisheries, offshore fishing and fish processing, and disseminate the information to fishermen and fish farmers, helping them develop their businesses.
- (4) Alleviating the manpower shortage in the fishing industry: To alleviate the manpower shortage in the fishing industry, the Government has implemented the Mainland Fisherman Deckhands Scheme since 1995. The scheme enables a maximum of 7 200 mainland fisherman deckhands to enter Hong Kong, specifically to help the owners of fishing vessels unload fish catches at wholesale fish markets. The deckhands' contracts must be entered into outside Hong Kong and their work should mainly be performed outside the territory. Through the scheme, the manpower shortage in capture fisheries has been basically resolved. Fish farmers can also apply for imported workers under the Supplementary Labour Scheme.
- (5) Proper management of marine fish culture activities: According to the Marine Fish Culture Ordinance (Cap. 353), licences are required for all marine fish culture activities in designated fish culture zones. The Government inspects every fish culture zone on a regular basis, and initiates legal action against illegal fish culture. To help fish farmers develop more varied operations, the Government has launched a special scheme to allow them to conduct recreational fishing on fish culture rafts.
- (6) Safeguarding aquaculture environments: To minimise the impact of red tides and water quality deterioration on mariculture, the Government regularly monitors the water quality of fish culture zones, and implements measures for monitoring and managing red tides. The latter include proactive phytoplankton monitoring before red tides form and rapid risk assessment of reported red tides. A computerised system using Geographic Information System technology has been established to help visualise the spatial and temporal distribution of red tides and quickly analyse their development and movement. Prompt red tide warnings and technical advice are disseminated to mariculturists and the public through the red tide support groups established in fish culture zones, press releases and the Red Tide website ([www.hkredtide.org](http://www.hkredtide.org)).

Furthermore, to minimise marine pollution caused by mariculture, the Government deploys specially designed artificial reefs known as biofilters. These provide hard surfaces, which suit filter feeding organisms like green mussels. These biofilters help to absorb organic matters accumulated in the fish culture zones, and improve the seabed environment. To date, the Government has deployed a total of 34 biofilters in the Kau Sai, Sham Wan and Lo Tik Wan fish culture zones.

- (7) Accredited Fish Farm Scheme: In mid 2005, the Government introduced a voluntary Accredited Fish Farm Scheme, to enhance the competitiveness of the local aquaculture industry. Participating fish farms are required to adopt a set of good aquaculture practices, with the aim of raising the environmental hygiene standards of fish farms and the quality of cultured fish. Quality assurance tests, including analyses of drug residues and heavy metals in fish, are conducted to ensure that all cultured fish meet food safety standards before they are sold in the market. Since the scheme was launched, a total of 80 fish farms (23 with fish ponds and 57 mariculture farms), representing 12% of the total area of local fish farms, have registered under the scheme. The Government and the FMO also help publicise and promote the marketing of fish products from accredited fish farms.
- (8) Studies on culture of new fish species with good market potential: To provide a wider choice of species for culture, the Government is committed to identifying new species that have good market potential, and conducting culture studies. Following the successful completion of culture studies, the Government will transfer the skills and techniques to the fish farmers through training workshops. To help fish farmers develop local fish fry hatcheries, the Government has established an experimental hatchery in Ta Kwu Ling, engaging in technology transfer as well as demonstrations, through which local fish farmers can acquire the knowledge and techniques to produce fish fry.
- (9) Promoting good aquaculture practices: To help fish farmers minimise losses due to fish diseases, the Government has implemented a fish health inspection programme, assisting fish farmers to prevent, diagnose and contain fish diseases. In addition, the Government has introduced "Good Aquaculture Practices". Under the programme, the Government sends staff to conduct regular farm visits, test the water quality of fish farms, analyse fish samples, and monitor the conditions of fish farms and cultured fish. Improved culture techniques and good management practices have been introduced to fish farmers through seminars, on-farm demonstrations and advisory leaflets, to raise the management and food safety standards of local fish farms.
- (10) Sales and promotion of fishes: Through the FMO, the Government has opened wholesale fish markets to provide fishermen and fish merchants with structured marine fish wholesale and retail services. The Government also works closely with the FMO to promote quality local fisheries products and assist the industry with establishing premium brands through participation in and arrangements of marketing activities, aiming to develop markets for local fisheries products.

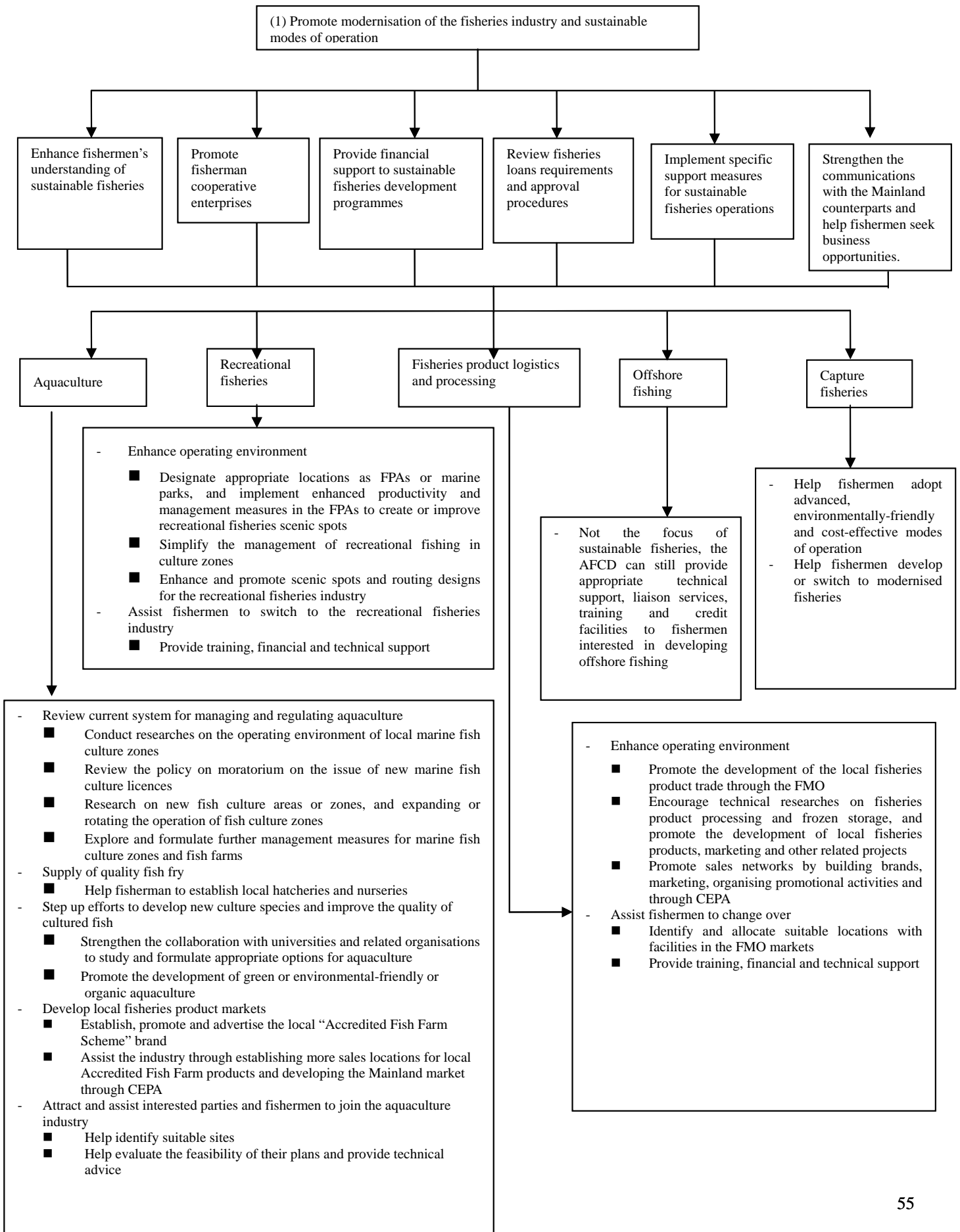
**Measures to Support Hong Kong Marine Conservation**

- (11) **Combating destructive fishing practices:** Enforcing Fisheries Protection Ordinance (Cap. 171) to combat destructive fishing practices in Hong Kong waters, which include the use of toxic substances, explosives, electricity, dredging and suction devices.
- (12) **Establishing marine parks and marine reserves:** Since the implementation of the Marine Parks Ordinance (Cap. 476) in 1996, Hong Kong has established four marine parks and one marine reserve to protect marine resources and environments of high conservation value. They cover 2 430 hectares, representing approximately two percent of Hong Kong waters. All types of fishing are prohibited in the marine reserve, while demersal trawling is prohibited in the marine parks. However, controlled fishing is allowed through a system of marine parks fishing permits.
- (13) **Artificial reefs deployment:** An artificial reefs programme is launched to improve local fisheries resources and enable recovery of Hong Kong's marine ecosystem by deploying artificial reefs in appropriate sites of Hong Kong waters. Since the programme was launched, some 170 000 cubic metres of artificial reefs have been deployed in Hong Kong waters. To date, over 220 species of fish, including many that are of high value, such as groupers, breams, snappers and sweetlips, have been recorded using the reefs for feeding and shelter, and as spawning and nursery areas.
- (14) **Environmental impact assessment:** According to the Environmental Impact Assessment Ordinance (Cap. 499), assessments must be conducted for designated development projects listed in Schedule 2 and Schedule 3 to evaluate the likely environmental impacts, including those on water quality and aquatic ecology. Effective mitigation will be initiated to minimise the impacts of the designated projects, followed by monitoring and audit programmes.
- (15) **Controlling sources of pollution:** Through the enforcement of the Water Pollution Control Ordinance, the Waste Disposal Ordinance, the Dumping at Sea Ordinance and the Buildings Ordinance, the Government implements control of different sources of pollution or activities causing pollution to prevent water pollution. The Government is also committed to effectively reducing discharges of polluted water into Hong Kong waters through expanding the sewage collection system and improving sewage treatment facilities. Examples of measures taken to achieve these goals include launching the Harbour Area Treatment Scheme, constructing infrastructure for collecting and treating sewage, and building a Chemical Waste Treatment Centre.
- (16) **Monitoring water quality:** In accordance with the Water Pollution Control Ordinance (Cap. 358), the Government has established 10 water control zones and corresponding quality benchmarks to conduct a comprehensive marine water quality monitoring programme. Data on Hong Kong marine water and sediment are collected to formulate the effective measures on controlling water

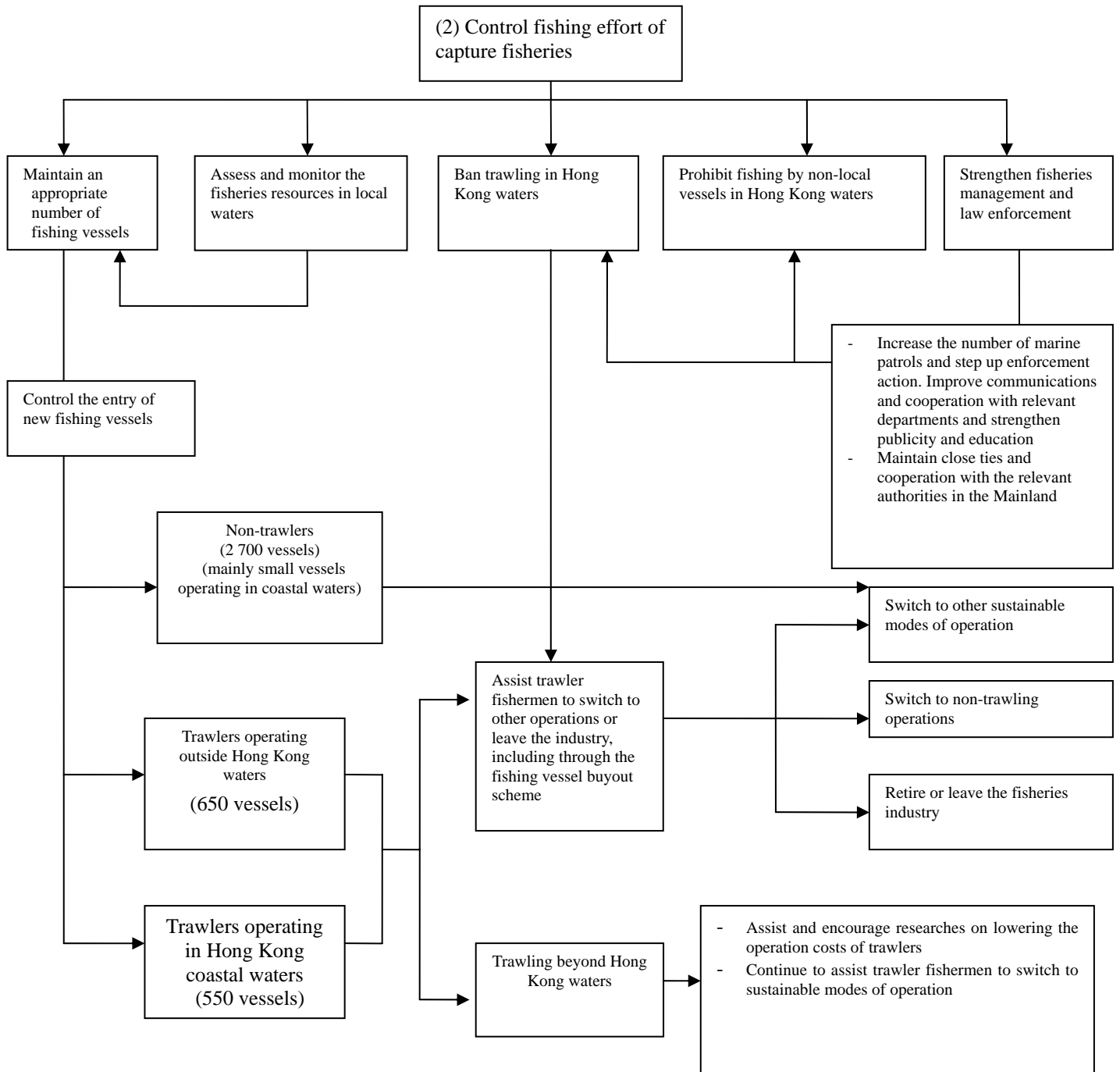
pollution, evaluate the effectiveness of the measures after implementation, and predict changes to marine water quality.

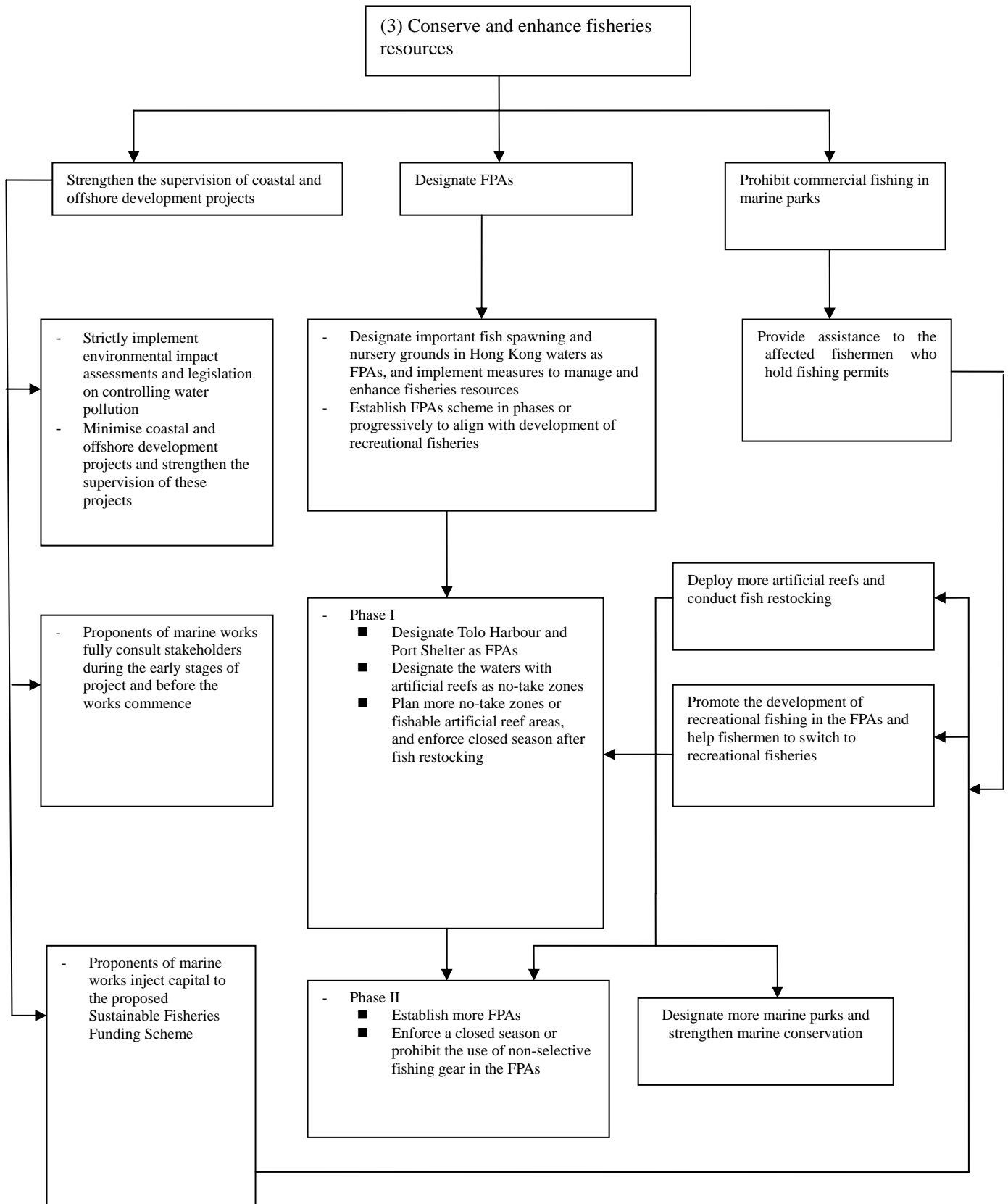
- (17) Cross-boundary co-operation: The Government maintains close liaison and co-operation with the Guangdong Provincial Government with a view to controlling the pollution of the waters faced by Guangdong and Hong Kong. The Government also participates in exchanges and co-operative activities concerning the conservation of marine resources in both regions. Examples include studies on and protection of coral reefs, Chinese white dolphins and sea turtles.
- (18) Publicity and education: Through establishing the Fisheries Education Centre, publishing brochures and posters, uploading information to the AFCD website, organising seminars and interactive activities, etc., the Government educates fishermen and the public on the importance of protecting marine habitats and resources to facilitate sustainable utilisation of the marine environment and fisheries resources. Environmental resources centres, mobile environmental resources centres and a Green Desk have also been established to deliver the messages of protecting the marine environment and conserving aquatic resources.

Overview of Options









**Projected Timetable for Implementing Options and Measures**

		<b>Timetable for the Committee to submit a report to the Food and Health Bureau</b>				
		<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<u>(1) Promote modernisation of the fisheries industry and sustainable modes of operation</u>						
Enhance fishermen’s understanding of sustainable fisheries	Promote the concept of sustainable fisheries through education and promotion campaigns	[Blue bar]				
Promote fisherman cooperative enterprises	Promote development of the industry through encouraging fisherman’s organisations to form cooperative enterprises, and cooperating with academic institutions or non-profit making organisations.	[Yellow bar]				
Provide financial support to sustainable fisheries development programmes	Offer low-interest loans to fishermen and fish farmers	[Green bar]				
	Provide prompt assistance to fish farmers who are adversely affected by natural disasters	[Green bar]				
	Study on establishing a Sustainable Fisheries Funding Scheme to promote sustainable fisheries development projects	[Yellow bar]				
	Establish the Sustainable Fisheries Funding Scheme and invite applications		[Yellow bar]			
Review fisheries loans requirements and approval procedures	Review requirements for fisheries loans and approval procedures	[Blue bar]				
Implement specific support measures for sustainable fisheries operations	Technical guidance and training	[Green bar]				
	Implement the Mainland Fisherman Deckhand Scheme to mitigate labour shortages in capture fisheries	[Green bar]				
Aquaculture	Properly manage marine fish culture activities	[Green bar]				
	Implement voluntary Accredited Fish Farm Scheme	[Green bar]				

TRANSLATION

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		Timetable for the Committee to submit a report to the Food and Health Bureau							
		Year 1	Year 2	Year 3	Year 4	Year 5			
	Promote good aquaculture practices								
	Safeguard aquaculture environment: Monitor water quality and red tides, and implement effective management measures in fish culture zones								
Aquaculture: Review current system for managing and regulating aquaculture	Conduct research on the environment and operation in local marine fish culture zones								
	Review the policy on moratorium on the issue of new marine fish culture licences								
	Explore new fish culture areas or zones, and expand existing marine fish culture zones								
	Explore and formulate further management measures for marine fish culture zones and fish farms								
Aquaculture: Supply of quality fish fry	Establish experimental hatchery and conduct hatching trials								
	Offer technical support and training on fry hatching technology to local fish farmers								
	Assist fishermen to establish local fish hatcheries and nurseries								
Aquaculture: Step up efforts to develop new culture species and improve the quality of cultured fish	Study culturing of new, quality fish species with good market potential								
	Improve quality and safety management level of fish farmers through education and training								
	Encourage development of green or environmental-friendly or organic aquaculture								
	Strengthen the collaboration with universities and related organisations to develop new culture species and formulate appropriate options for aquaculture								
Aquaculture: Develop local fisheries product market	Establish, promote and advertise the local “Accredited Fish Farm” brand								

TRANSLATION

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		Timetable for the Committee to submit a report to the Food and Health Bureau				
		Year 1	Year 2	Year 3	Year 4	Year 5
Aquaculture: Attract and assist interested parties and fishermen to join the aquaculture industry	Assist the industry through establishing more sales locations for Accredited Fish Farm products and developing the Mainland market through CEPA	█				
	Help identify suitable sites	█				
	Help evaluate the feasibility of their plans and provide technical advice	█				
Recreational fisheries: Enhance operating environment	Provide interested parties with training in aquaculture	█				
	Review the management of recreational fishing in fish culture zones	█				
	Identify, upgrade and promote scenic spots and routing designs for the recreational fisheries industry	█				
Recreational fisheries: Assist fishermen to switch to recreational fisheries	Designate appropriate locations as FPAs or marine parks, and implement enhanced productivity and management measures in the FPAs to create or improve recreational fisheries scenic spots			█		
	Assist fishermen to switch to recreational fisheries industry through loans, technical support and training	█				
Fisheries product logistics and processing: Enhance business environment	Promote the development of local fisheries product trade through the FMO	█				
	Encourage technical research on fisheries product processing and frozen storage and promote the development of local fisheries products, marketing and other related projects	█				
Fisheries product logistics and processing: Assist fisherman to switch to fisheries product logistics	Identify and allocate suitable locations with facilities in the FMO markets for fishermen	█				

TRANSLATION

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		Timetable for the Committee to submit a report to the Food and Health Bureau				
		Year 1	Year 2	Year 3	Year 4	Year 5
Offshore fishing	Provide technical support, liaison services, training and credit facilities to fishermen interested in developing offshore fishing	[Green bar]				
Capture fisheries	Help fishermen adopt advanced, environmentally-friendly and cost-effective modes of fishing	[Green bar]				
(2) Control the fishing effort of capture fisheries						
Maintain an appropriate number of fishing vessels	Maintain an appropriate number of fishing vessels			[Yellow bar]		
Prohibit fishing by non-local vessels in Hong Kong waters	Regulate foreign fishing vessels' entry to Hong Kong waters	[Green bar]				
	Calculate appropriate number and catch of fishing vessels	[Blue bar]				
	Draft and amend the relevant legislation	[Yellow bar]				
	Control the entry of new fishing vessels and prohibit fishing by non-local vessels in Hong Kong waters			[Yellow bar]		
	Conduct continuous assessment and monitoring of fisheries resources in Hong Kong waters			[Yellow bar]		
Ban trawling in Hong Kong waters	Consult affected fishermen	[Yellow bar]				
	Draft and amend the relevant legislation		[Yellow bar]			
	Announce a total ban on trawling in Hong Kong waters after a specified period			[Yellow bar]		
	Implement measures to ban trawling in Hong Kong waters					[Yellow bar]
Assist trawler fishermen to change over to other operations	Study details of trawler buyout scheme and consult fishermen	[Yellow bar]				
	Launch trawler buyout scheme			[Yellow bar]		

TRANSLATION

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**Timetable for the Committee to submit a report to the Food and Health Bureau**  
**Year 1    Year 2    Year 3    Year 4    Year 5**

Strengthen fisheries management and law enforcement

Increase the number of marine patrols and step up enforcement action  
 Improve communications and cooperation with relevant departments  
 Promote and provide education on laws and regulations for the fisheries industry  
 Maintain close ties and cooperation with the relevant authorities in the Mainland



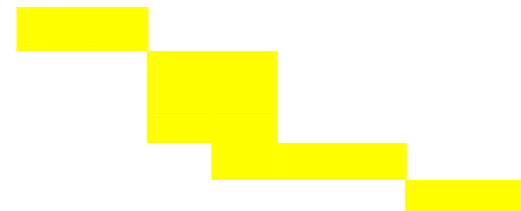
(3) Conserve and enhance fisheries resources  
 Strengthen the regulation of coastal and marine development projects

Strictly implement environmental impact assessments and legislation on controlling pollution sources  
 Minimise coastal and marine development projects and strengthen the supervision of these projects  
 Enhanced control over pollution sources and improve sewage treatment  
 Proponents of marine works fully consult stakeholders during the early stages of projects and before the works commence  
 Study the proposal of requesting proponents of marine works to inject capital to the proposed Sustainable Fisheries Funding Scheme



Designate FPAs

Formulate details for the implementation of FPAs  
 Conduct consultation regarding the locations and management of the FPAs, and measures to increase fisheries resources  
 Draft and amend the relevant legislation  
 Establish the first phase of FPAs



Prohibit commercial fishing in marine parks

Formulate details for prohibiting commercial fishing in marine parks, and consult the public and fishermen with fishing permits



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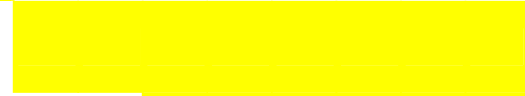
**Timetable for the Committee to submit a report to the Food and Health Bureau**

**Year 1    Year 2    Year 3    Year 4    Year 5**

Amend the relevant legislation



Provide assistance to the affected fishermen with fishing permits, and implement the prohibition of commercial fishing in marine parks






Explore locations for deploying artificial reefs and creating new fishing scenic spots outside marine parks



Monitor and assess the fisheries resources in marine parks



-  Measures in progress
-  Launched measures proposed by the Committee
-  Measure requiring detailed studies or preparations by the Government