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for information

OUTLINE BRIEF FOR STUDY ON WETLAND COMPENSATION

PURPOSE

This paper presents the draft outline brief for study on wetland compensation.

ADVICE SOUGHT

2. Members' views are sought on the draft outline study brief which will be finalized to seek funds for the study from Legislative Council.

BACKGROUND

3. There are a number of major public works projects being planned or implemented in the Yuen Long and North districts. They include the Shenzhen River Regulation Project, the main drainage channels for Kam Tin, Yuen Long, Ngau Tam Mei, San Tin, Fanling, Sheung Shui and Hinterland, the Yuen Long Bypass Floodway, the Rural Drainage Rehabilitation Scheme, village flood protection schemes, Route 3, the Kam Tin Bypass Highway Project, the proposed Western Corridor Railway and the proposed port back-up area in San Tin.

4. These projects are in the environmentally sensitive areas in or around the Ramsar Site. About 200 ha of fishponds and 21 ha of marshland may be affected or lost as a result of the drainage projects alone. With the designation of Mai Po Inner Deep Bay areas as a Wetland of International Importance under the Ramsar Convention in September 1995, Hong Kong is obliged to comply as far as possible with the requirements to compensate for wetland resources lost within the Ramsar site and try to restore wetlands whose benefits and values have been diminished or degraded.

5. Wetland resources refer to a number of different types of wetland ecological systems. The Convention on Wetlands of International Importance (Ramsar Convention) defines wetlands as "areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres."

6. The most extensive and important wetland habitats in HK are found in the North & Northwest New Territories (N&NWNT), especially around Inner Deep Bay Mai Po area. They include mangroves, mudflats, Gei Wais (inter-tidal shrimp ponds), and fish ponds. Together they form a rich and diverse ecological system that supports a variety of wildlife.

7. In the past, there was a misconception of wetlands as "wastelands" of mosquitoes and diseases. This has been repudiated by scientific studies worldwide which have established that wetlands provide important functions in maintaining water quality, reducing flood risk and damage by providing water storage and through shoreline stabilization. Wetlands also act as 'nurseries' and spawning grounds for many commercially important species, as well as conserving biological diversity. The United Kingdom, United States of America, Australia, and other countries have regulations to protect wetlands and prevent wetland losses, including requirements for off-site compensation.

8. The Hong Kong Government has a policy on wetland conservation which aims to prevent the loss of wetland resources and to compensate, as far as practicable, those of conservation value lost to essential development projects.

9. Under the current Environmental Impact Assessment (EIA) process, each of the above-mentioned projects is subject to an ecological impact assessment which would recommend measures to mitigate the project's impact on the wetlands. This project by project approach would be neither efficient nor effective in addressing the combined effects of the projects on the wetlands in areas within the same ecosystem. It could result in overlaps or incompatible proposals and lose sight of the cumulative impact.

OBJECTIVE AND SCOPE OF THE PROPOSED STUDY ON WETLAND COMPENSATION

10. In order to achieve an effective overall assessment of impacts on wetlands and their importance for conservation, it is proposed that a study be conducted for all the relevant public and known private projects throughout the territory where wetlands may be affected but with a special priority given to the N&NWNT areas.

11. The study would make a comprehensive assessment of the damage or loss of wetland resources resulting from all the projects, recommend practical means of mitigation, identify specific areas where wetlands could be restored, enhanced or created to compensate for the adverse impacts, and develop criteria and guidelines for on-site or off-site mitigation measures for future application and review the acceptability of residual impacts upon implementation of mitigation measures. The study would also estimate the associated cost involved in the mitigation works.

12. It is proposed that the scope of study should include the following :-

- (a) to survey, identify, describe and map out the existing wetlands in Hong Kong, and to provide information on their land status and existing use;
- (b) to identify other potential sites which can be suitable for use as replacement wetland areas;

- (c) to determine the feasibility and ecological utility of using such sites to compensate for losses elsewhere, and to rank and classify such sites according to their conservation potential, location, land status, existing use and plot size;
- (d) to recommend a set of criteria by which the ecological importance of wetland can be ranked;
- (e) based on the criteria established, identify which wetland areas must be protected, which should be compensated if disturbed, which could be allowed for development purposes, etc.
- (f) to compile inventories of ecologically important wetlands and potential sites suitable for compensation purposes;
- (g) to assess the cumulative impact of current and proposed public works and known private projects on wetland resources;
- (h) to consider practical methods of mitigation, both on-site and off-site, to address impacts on wetland resources;
- (i) to devise practical models for management of these wetland sites (new, restored and replacement sites) and estimate their cost (both capital and recurrent);
- (j) to set up a field trial on the recommended models, which may include but is not limited to the following :
 - to carry out engineering and conservation management works as necessary so as to demonstrate the techniques, methods, programming of work and resource requirements;
 - to monitor the progress of each phase of work;
 - to identify constraints, opportunities and resource implications in the implementation of the recommended management models;
 - to evaluate the effectiveness of the recommended management models; and
 - to report on the revaluation and make further recommendations;
- (k) to prepare guidelines and criteria for off-site compensation for public and private projects.

GENERAL APPROACH OF THE STUDY

13. The study will be carried out in two stages as illustrated in Fig. 1.
14. In Stage One, the existing wetlands, will be surveyed, an inventory of ecologically important wetlands will be compiled, a set of criteria for ranking ecological importance of wetland on a territorial basis will be developed and potential sites suitable for replacement or compensation purposes will be identified.
15. The cumulative impacts of current and proposed public works and known private projects on wetland resources will be assessed and the guidelines and criteria for off-site ecological mitigation measures will be reviewed. A preliminary strategy and methodology for practical off-site mitigation measures to address cumulative impacts on wetland resources will be developed.
16. At this key point, public consultation will be conducted and policy guidance sought to ascertain value judgements and directions before practical models are devised and set up for trial in the next stage of the study.
17. In Stage Two, a 12-month field trial on recommended models for construction and management of restored and replacement wetland sites will be set up to test their feasibility and to evaluate their effectiveness. The models will be refined on the basis of the findings.
18. A final recommendation on the strategy, practical construction and management models guidelines and criteria on wetland compensation for off-site ecological mitigation measures will be formulated.

PROGRAMME OF THE STUDY

19. Subject to allocation of resources it is intended that the study will start in mid 1997. The Study is expected to be completed within 27 months. An outline programme for the Study is shown at Figure 2.

MANAGEMENT OF THE STUDY

20. A consultancy will be commissioned to carry out the Study. A Study Management Group comprising relevant government departments, to be chaired by AFD, will be set up to oversee the progress of the Study, to facilitate liaison and co-ordinate with other relevant studies.

October 1996
Agriculture & Fisheries Department

Figure 1
Study on Wetland Compensation
Outline Study Process

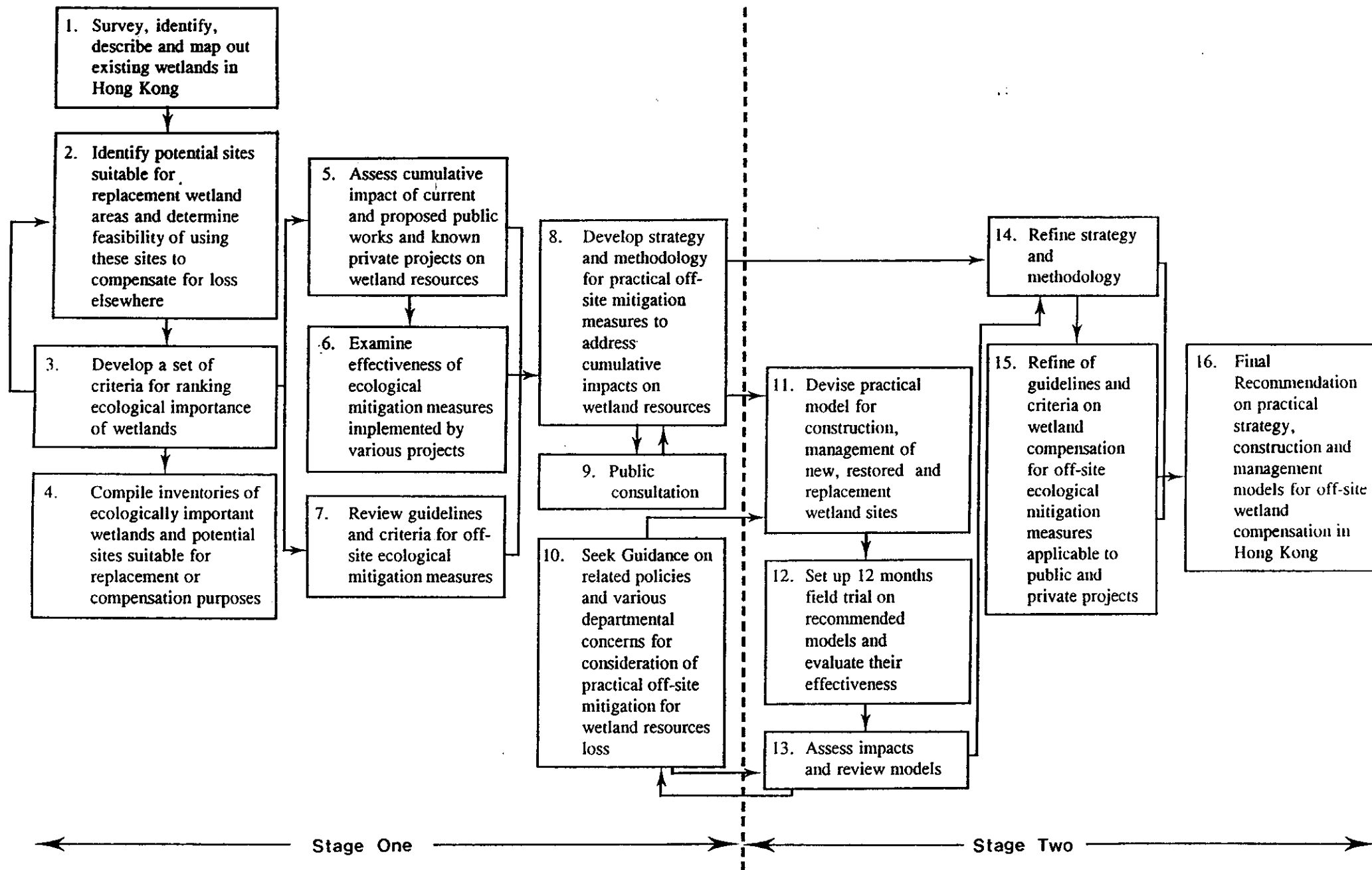


Figure 2
Study on Wetland Compensation
Outline Study Programme

TASK	BRIEF DESCRIPTION	MONTH																																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27																			
1.	Survey, identify, describe and map out the existing wetlands in Hong Kong	←————→																																													
2.	Identify potential sites suitable for replacement wetland areas and determine feasibility of using these sites to compensate for loss elsewhere			←————→																																											
3.	Develop a set of criteria for ranking ecological importance of wetlands					←————→																																									
4.	Compile inventories of ecologically important wetlands and potential sites suitable for replacement or compensation purposes	←————→																																													
5.	Assess cumulative impact of current and proposed public works and known private projects on wetland resources					←————→																																									
6.	Examine effectiveness of ecological mitigation measures implemented by various projects					←————→																																									
7.	Review guidelines and criteria for off-site ecological mitigation measures						←————→																																								
8.	Develop strategy and methodology for practical off-site mitigation measures to address cumulative impacts on wetland resources						←-----→																																								
9.	Public consultation							←————→																																							
10.	Seek Guidance on related policies and various departmental concerns for consideration of practical off-site mitigation for wetland resources								←————→																			←————→																			
11.	Devise practical model for construction, management of new, restored and replacement wetland sites						←————→																																								
12.	Set up 12 months field trial on recommended models and evaluate their effectiveness									←————→																																					
13.	Assess impacts and review models																					←————→																									
14.	Refine strategy and methodology																						←————→																								
15.	Refine guidelines and criteria on wetland compensation for off-site ecological mitigation measures applicable to public and private projects																									←————→																					
16.	Final Recommendation on practical strategy, construction and management models for off-site wetland compensation in Hong Kong																											←————→																			