

Form B

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Introduction and Background

Wetlands are commonly regarded as one of the most productive environments on Earth. Wetlands include ecosystems such as rivers, lakes and marshes, coastal mangrove forests, lagoons and salt marshes, shallow marine coral reefs, riverine floodplains and peat bogs. They provide many economic and ecological benefits - through wetland products in the form of fisheries and shellfish, groundwater replenishment, maintenance of water tables for agriculture, forestry and pastoral activities, water storage and flood control, shoreline protection and stabilisation, climate change mitigation, sediment and nutrient retention, water purification, habitats for biodiversity and opportunities for recreation and tourism.

With recent rapid population growth, there are serious water management problems. These include, for example, diminishing water supplies, water contamination, erosion, sedimentation, groundwater depletion, flood damage and climate change. According to the Stockholm Environment Institute, 48 countries in the world will suffer from acute water shortages in 2025 (Stockholm Environment Institute, 1997) and, while global warming starting to have a significant influence on large scale flooding of coastal plains in China, Egypt and Bangladesh, improved water management is becoming increasingly essential for preventing or minimizing the downstream consequences.

According to the Convention on Wetlands (Ramsar Convention), wetland inventory is a tool for identifying the function and values of wetlands, including ecological, social and cultural values. It is required for establishing a baseline for measuring future change in wetlands, for identifying their functions and values; for locating where wetlands are, and which are the priority sites for conservation. Wetland inventory is required for planning and managing wetlands at both practical and/or political levels and to enable comparisons between wetlands and management procedures to be made at different levels of government and management (local, national and international). To assess the current global situation and need for wetland inventory the Ramsar Convention commissioned the preparation of a comprehensive "Global Review of Wetland Inventories" (GRoWI) in 1998/99. GRoWI showed that the existing wetland inventory base was inadequate for assessing the distribution and different types of wetlands, the extent of likely impacts and vulnerability, the role of wetlands in climate change and the loss of wetland related economic and ecological values.

Although there is *A Directory of Asian Wetlands* that provided summary information on the status, threats and biodiversity significance of 947 wetland sites in 24 Asian countries (Scott 1989; Scott & Poole 1989), no updated information has been collected for the past 10 years. The Asian Wetland Inventory (AWI) aims to develop a region wide standard methodology for wetland inventory to:

- provide core data / information on Asian wetlands to support International Conventions and Treaties on Wetlands, Climate Change, Biodiversity, Migratory Species and Desertification, and their implementation by Governments;
- analyse long term trends in the status of Asian wetlands and their natural resources;
- enable regular revisions and updates of information on wetlands of national and international importance in Asia; and
- disseminate these analyses for wider consideration and use in sustainable development and conservation of wetland resources.

AWI approach

A principal purpose of the AWI is to delineate and map the wetland resources of Asia, taking into account wetland habitats from the intertidal zone to the uppermost reaches of all major river basins, and to store this information on a GIS. This exercise is to be undertaken at different scales with the amount of detail being dependent on the explicit purpose of the inventory and the size and importance of the wetland. Thus, a hierarchy of four scales of mapping are being used (see Figure-1)

- 1 Geographic regions with a map at a scale of 1:5 000 000
- 2 Wetland regions with maps at a scale of 1:1 000 000 to 1: 250 000
- 3 Wetland complexes with maps at a scale of 1:250 000 to 1:50 000
- 4 Wetland habitat with maps at a scale of 1:50 000 to 1:25 000

Figure 1: Wetland inventory hierarchical methodology – the four-level approach

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Tone River is one of the largest river systems in Japan. The total length of the river is about 322km and the extent of the catchment is about 17,000km². Lake Kasumigaura, the second largest lake in Japan, is located the lower reaches of the basin in the Ibaraki Prefecture, (36.1N, 140.2E).

Utilising the AWI approach to wetland inventory examples of maps and data sheets at levels 1, 2 and 3 will be demonstrated and the applicability thereof in other areas of Asia tested.

Reference

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