Working in wetlands – the tools of the trade

Wetlands present a challenging environment for people. They are often physically difficult environments to live and work in, and the diseases frequently associated with wetlands, such as malaria and bilharzia, add another dimension of difficulty. But in exchange they offer their great wealth of water, a diversity of natural resources that provide food, fibre, medicines and shelter, and usually a high level of productivity – a compelling combination for sustaining human populations.

Exploiting the natural resources of wetlands has called forth the creative talents of people for millennia, with their need to develop special tools and housing as well as modes of transport for fishing, hunting, salt extraction, agricultural activities, and forestry. This has fostered a rich and diverse cultural heritage in the form of walkways, working tools, houses – and boats.

ROGER LEGUEN/RAMSAR

Traditional fishing in the Parque Nacional de los Roques, a Ramsar site in Venezuela.

Common characteristics of boats in the wetland environment are their shallow draft and rounded sterns. Prehistoric Native American canoes found on Lake Newman in Florida (USA) are a good example - the Seminole Indians, excellent boat builders, called this lake Pithlachocco, which means "place of wide boats". In southeast Asia, canals, deltas and rivers are the habitat for a great diversity of boats (sampans, barges, etc.) that serve as housing and shops as well as for the more traditional uses such as fishing and transportation. Striking examples of this are found in Hong Kong in China, and in Thailand. On the lakes of the Andean region, the totora reed is used to make boats often called "reed horses" *(caballitos de totora)* as well as to weave objects for everyday domestic use, such as baskets and mats. And of course an equal diversity of craft is found in shallow coastal waters, a diversity which is a reflection of local water conditions as well as availability of local materials for construction; many types of craft have been in use for hundreds of years, built by skilled artisans who pass on their skills to the next generation.

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Fishing is a primary activity in wetlands and is associated not only with effectively designed boats, but also with an immense range of capture tools – nets and traps predominate, ranging from gill nets, seine nets and cast nets to permanently constructed traps in lakes, rivers and estuaries as well as smaller, movable traps. Again, the design and construction reflect local water conditions and available materials as well as the characteristics of the species being exploited.

Living in an aquatic environment has presented an additional challenge in terms of building materials and design. In the Orinoco delta, Venezuela, wetland plants are used for constructing the houses of the Waraos, whose name means "marsh inhabitants". Houses built upon stilts as an adaptation for aquatic living have evolved in many parts of the world, from the bamboo houses in Inle Lake in Myanmar to those constructed with Nibong palm or mangrove wood in the small islands and coastal inlets in southeast Asia, to those using forest timber and palm thatching in the flooded forests of the Amazon. In the latter, water levels can increase by as much as 10-12 metres in

some areas in the wet season, and here local people also build floating houses to accommodate the dramatic changes in water levels. As a further adaptation to aquatic life, they have created floating vegetable gardens, a practice recorded in Mexico in the 14th century where the Aztec/Mexicas nomadic tribe (who later created the Aztec empire) used floating gardens in Lake Texcoco; this technique is still used in other parts of the world too, for example, on Dal Lake in Kashmir and on Inle Lake in Myanmar.

There is an important cultural heritage in the permanent structures that have been associated with wetlands, and several major cities, such as Bangkok, Venice, Amsterdam, and part of Caracas have been built upon them. In these urban/wetland landscapes, canals blend in with temples, palaces and houses. Exploitation of salt has led to the creation of ports, docks and warehouses that date from the Roman period or the Middle Ages in many coastal marshes in the Mediterranean. Management of the water resource itself, as well as the need for efficient communication, has also created a broad range of water-related structures. Around the great rivers, such as the Nile, Tigris, Euphrates, and Hwang-Ho (the Yellow River), former civilizations created systems of dams, dykes and canals in order to use the water most efficiently, a practice observed in many other parts of the world as well, sometimes to the detriment of the wetland environment.

Dams have been the focus of attention in recent years following the intense period of dam building in the latter half of the 20th century. In the 30 years from 1950 to 1980, no fewer than 35,000 large dams were built around the world. A recent report by the World Commission on Dams estimates that 40-80 million people have been physically displaced by dams and countless others affected in different ways. Indigenous and tribal people have suffered disproportionately from the negative impacts of large dams which have often seriously impacted their lives, livelihoods, cultures, and spiritual existence. Cultural heritage impacts are still largely ignored in the planning process for dams and at this moment controversy continues in several countries in Africa, Asia and the Neotropics over plans to build dams that may destroy local lifestyles and their associated traditions.

Living and working in a wetland environment has produced an amazingly diverse heritage of traditions and material products. Today's pace of economic development is a constant threat to this cultural heritage, and the challenge now is to develop management strategies that will ensure its survival.

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Several major cities, such as Bangkok, Amsterdam, part of Caracas and here, Venice, are built on wetlands.

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