

Lessons Learned from Mangrove Ecosystems

Part 4: Development Study in The Sultanate of Oman

AAI has been taking part in the Development Study started in 2002 devoted to the restoration, conservation and management of mangrove forests in Oman. One of our staff members has been in Oman since 2000 as JICA's long-term expert on mangrove plantation, working at the Ministry of Regional Municipalities, Environment and Water Resources. He is also assisting the implementation of this Development Study. (Please refer to the previous report.)

The purpose of this study is to assess the situation and functions of existing mangrove forests based on the local environmental and socio-economic conditions, and to establish a master plan which includes site-specific planning, capacity building programs for those who implement the project, and an education program for local communities. 21 creeks (locally termed 'khawr') on 16 different sites were selected as the survey target areas, and, in order to assess the overall value of the mangrove ecosystems, the team studied the natural environmental conditions such as topography (geographical features), soil conditions, water quality and hydrological features, as well as socio-economic conditions such as the local land use, economic activities of the coastal region (fisheries, tourism, etc.) and the historical values attached to the sites. The team then recorded such information on every site as technical specifications, and drew up a guideline of the plantation techniques which have been implemented locally. The survey target sites included the areas with and without mangrove forests, and the studied khawrs were categorized according to their environmental conditions, forest functions, participation of local communities and their historical and ethnic relationships, and involvement of the authorities. Based on this categorization, the study team formulated a mangrove restoration, conservation and management plan.

At present the entire area of mangrove forests in Oman is some 1,100ha, which is not very large. The forests have been used directly as resources to provide fuel, construction materials and fodder, and indirectly as nurseries for aquatic (marine) resources, bee-keeping grounds, etc. In recent years the forests' uses as tourism resources and recreational sites have also been recognized.

The current survey looked at only 16 sites, 21 khawrs, but Oman has more khawrs scattered along the coastline. For development and utilization of these khawrs, the coastal utilization plans based on the classification of khawrs, which was proposed as a result of this survey, will be drawn up one after another. The survey results on mangrove ecosystems and the surrounding environment are summarized in a monitoring sheet, and it is expected that the survey will be continued by the local authorities. Recently Oman's coastal region has been suffering from many environmental problems such as red tides, blue tides, and sedimentation and erosion which are thought to be caused by the construction of ports. The mangrove forests play an important role in protecting the coastal environment and they also have to face such problems.

The government of Oman has a plan to establish an information center to study and protect not only mangroves but also coastal resources in general, and they are trying to keep up with activities for securing appropriate human resource and educating local communities regarding the important value of mangrove forests. We hope that the outcomes of this survey will be useful in realizing this information center, and eventually contributing to increased understanding on the part of local communities for the expansion of mangrove forests and their values.



**Wide view of mangrove forest
(Bandar Khayran)**



**Inside mangrove forest
(Mahawt Island)**



**Surveying plantation potential
(Khawr Quq)**