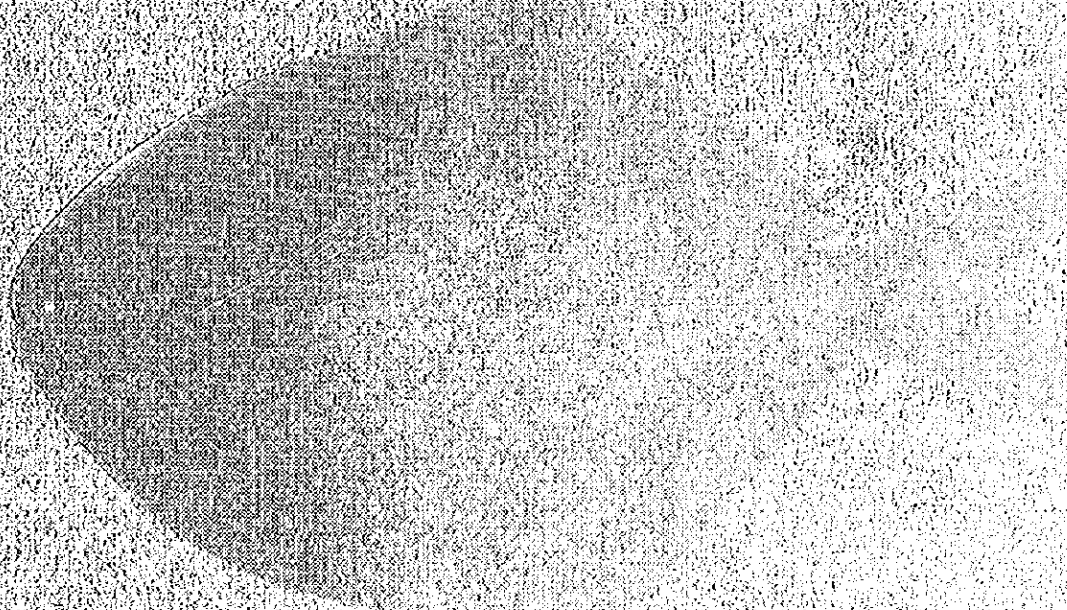


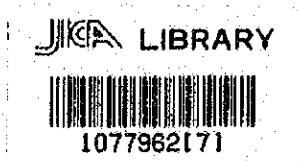
**PROJECT FORMULATION STUDY  
OF  
THE KUWAIT AQUARIUM  
SUMMARY**



**BY  
INTERNATIONAL CENTER FOR  
SCIENTIFIC AND TECHNICAL  
COOPERATION**

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## Introduction

For many years now, the Government of Kuwait has been considering the establishment of a first-rate aquarium within Kuwait. It is in connection with this conceptual direction that the Agriculture Department of Ministry of Public Works has received the visits of mission of aquarium specialists dispatched under the Technical Assistance Program of the Government of Japan on four separate occasions between 1974 and 1976.

Working together, the Ministry of Public Works and the experts of the mission have developed and hammered out details of a general aquarium plan suited to conditions in Kuwait. Resource has also been had in formulating this project plan to considerable and repeated discussions, field reconnaissance surveys, and studies.

As a result of these untiring joint efforts on both sides, it has been possible to produce the Project Formulation Study for the Kuwait Aquarium.

## Intent of Establishment

Although the fact that there already exist hundreds of aquariums throughout the world would seem to argue against the establishment of yet another, the vast majority of these facilities are located in the United States, Europe, and Japan. Indeed, there is not a single standard-quality aquarium within the broad ellipse centering on Kuwait and extending 3,500 kilometers to the west and 6,500 kilometers to the east. As is obvious from a look at any map, this ellipse encompasses within it an exceedingly important sector of the globe, including the Arabian Gulf, the Gulf of Oman, the Arabian Sea, the Indian Ocean, and part of the Mediterranean Sea. Thus the establishment within Kuwait of a "standard-quality aquarium" by which is meant a full-fledged aquarium, would serve to fill this yawning void in the world's aquarium distribution.

The discovery of significant petroleum deposits in Kuwait and their subsequent exploitation have enabled Kuwait to finance an ambitious program of modernization. Because the oil which the desert yields is so important, the national traditions and customs of the desert Kuwaiti people have been accorded major prominence in recent years. Nevertheless, there is also another side to Kuwait's history, that of its seafaring tradition as epitomized by the Shief Palace, Dhow Harbor, and other maritime symbols operative even today. It is this tradition within the Kuwaiti heritage which the Kuwait Aquarium Project would seek to bring out and to enlarge upon for heightened national consciousness and pride.

## Site

The proposed site is situated along the Kuwait Bay coast approximately midway between Kuwait Town and Salmiyah. This site, itself about 400 meters long and 100 meters wide, is appropriately bounded on the south by the Paradise Cove sea club and on the west across Arabian Gulf Street by a tract of land set aside for future development as public garden. As such, the aquarium project bids to become the center of a concerted host of recreation-related facilities in the immediate vicinity.

## Concept of the Aquarium

Very generally, the world's aquariums may be divided into two types. One is the museum-type aquarium. Aquariums of this type feature diverse collections on display in an intentional emphasis upon the educational function. The other is the oceanarium-type aquarium. Aquariums of this type typically feature shows and performances by the various animals in line with their emphasis upon the entertainment function. Of the two, the oceanarium-type aquariums are the later development and are usually premised upon the pre-existence of a museum-type aquarium.

For the Kuwait Aquarium, it is intended to incorporate the best features of both types into a comprehensive aquarium for education and entertainment. Accordingly, the following three sectors are planned for the Kuwait Aquarium: (1) Main aquarium (2) Dolphin show pool (3) Off-shore marine facility. Overall, these three sectors are to be operated 40% for entertainment, 40% for education, and 20% for research. If this is done, the Kuwait Aquarium will be able to function fully as a first-rate standard aquarium.

## Display Policy

### 1. Main Aquarium

The main pillars of display policy call for dynamic displays making profuse use of massive tanks for saltwater fish and ecological displays re-creating the natural habitats of freshwater fish. The main display facilities are described briefly below in order as they would be encountered by the visitor to the Kuwait Aquarium.

*Giant Marine Tank*; Located near the entrance, this giant marine tank houses the large sharks, rays, and migratory fish to present the visitor with a spectacular introduction to this underwater world.

*Marine Invertebrates and Sea Fishes of the Arabian Gulf*; On display here are the various oceanic species from the broad area including the Arabian Gulf, Gulf of Oman, and Red Sea. In different parts of this display will be included fish native to the coral reefs of the South Pacific, the spider crab said to be one of the largest crustaceans in the world with a leg-span over three meters when fully extended, and other species of

interest. This facility is also to include such displays as the re-creation of the sounds emitted by sound-emitting fish, the symbiotic behavior of fish, and other fish.

*Experimental Show of Fish;* This section is to include regularly scheduled shows by fish which have been trained to perform interesting acts through conditioning and training. Even as they enable visitors to enjoy the shows put on by the fish, these displays also function to instruct visitors in the many behavioral patterns of which fish are capable.

*Freshwater Fishes of the World;* A wide and varied collection of freshwater fish is prerequisite for any standard-quality aquarium. The intention behind such a collection of freshwater fish is to display the representative species of fish from all continents in an environment as close to their natural habitat as possible and to exhibit their natural habits. Near the end of the visitors' flow of movement, there are also a cafeteria and lounges with displays of beautiful goldfish and colored carp to allow the visitor to rest his eyes as well as his feet.

*Marine Theater;* This marine theater features showings of educational and general-interest films about fisheries and marine life to broaden the visitor's perspective still further.

*Video Tape Playback Units;* Located at strategic places along the flow of visitors, these video tape playback units are to show taped programs dealing with marine ecology, thereby complementing the panel displays by the various display tanks and further enhancing the Aquarium's educational and entertainment value.

## 2. Dolphin Show Pool

The main show pool, nestling within a grove of date palm trees, is to feature performances by dolphins orchestrated by the trainer as he stands upon a platform constructed on the dhow. These shows are to be held several times each day so as to reach the widest possible audience. In addition to these performances, the show pool is to be built so as to allow visitors to watch the normal underwater activities of the dolphins through special windows along its length.

It is imperative that a continuous supply of trainable dolphins be available if such shows are to be maintained over a long period of time, yet the relative ease with which dolphins can be transported over long

distances means that the problems of supply are not insurmountable. Nevertheless, the possibilities of capturing and training dolphins from the waters near Kuwait should also be seriously explored, both because of the scientific significance of this attempt itself and because the use of such native dolphins would take these shows all the more meaningful to the prospective audience.

### 3. Off-shore Marine Facility

Although the main function of this off-shore marine facility is to acclimate dolphins and other large species of fish prior to display, it may also be possible under certain conditions to allow the general public to view this facility as well.

## Environment Control System

It is the attempt to artificially simulate and control the environment of the animals on display so as to give them conditions as close to their natural habitats as possible which distinguishes the aquarium from like buildings. In view of the harsh climate and other conditions prevailing in Kuwait, the equipment installed to maintain the environment within the tanks will have to be the best available if the displays are to be maintained and the animals' lives protected. The selection of water intake installations in particular requires further in-depth studies so that the right choice can be made unerringly.

## Project Implementation

### 1. Steering Committee

In order that the Kuwait Aquarium may best fulfill its stated purposes, a Steering Committee should be promptly formed with the competent officials from the concerned governmental agencies, the candidate for the directorship of the Aquarium, and a number of aquarium specialists as its members. Once constituted, this Steering Committee would serve as the nucleus of the project management.



## 2. Consultant

In keeping with the singular nature of this project, the scope of consultant services is to be broadened to include not only planning, design, and construction supervision but also the formulation and implementation of staff training programs, programming relating to the operation and management of the Kuwait Aquarium, the design of a dolphin training program, assistance with other training operations, and such other services as may be deemed necessary.

The Terms of Reference to be used in submission of proposals for the selection and employment of the consultant have been prepared and submitted under separate cover.

## 3. Training

It is anticipated that a staff of approximately forty will be required for the proper operation of the Kuwait Aquarium. Staff training is to be given for these personnel both before and after the Aquarium opens in keeping with the training program as formulated in the scope of services of the consultant to the project.

## 4. Budgeting

Preliminary cost estimates have already been made for this Kuwait Aquarium Project, and the figures indicated therein are to be utilized as price indications to facilitate budgetary action by the various governmental agencies involved.

## 5. Schedule

The tentative schedule for the project implementation stage is shown below.

A. Physical facilities	
Design and engineering	12 months
Construction	24 months
B. Training and operation	
Prior to Aquarium opening	18 months
After Aquarium opening	24 months (minimum)

