

## Feasibility Study on Taunsa Barrage Irrigation System Rehabilitation, Pakistan

(Period of the study: 4.5 months from September, 1997    Our assignments: Agriculture and Environment)

### Background of the Study

Most of the land of Pakistan is in arid or semi-arid area and irrigation is indispensable for agricultural production. Although Punjab state is the core area for agriculture in Pakistan, its productivity are limited due to low irrigation efficiency, lower than 40%, which is caused by deteriorated irrigation facilities and primitive water control. 38 years have passed since Taunsa barrage, one of the 16 barrages in Pakistan, was constructed in 1959 and the barrage has malfunctioned. Therefore, the performance has declined and there have been hindrance in gate control when flood occurs. Under this condition, feasibility study was requested for Taunsa Barrage Irrigation System Rehabilitation.

### Outline of the Study

Soil erosion and flood caused by the runoff from Mt. Slaiman on the right bank and shifting sand into farmland on the left bank are the large obstacles for agricultural development in the study area. Besides, water logging and salt accumulation are also the obstacles in the irrigated area. Therefore, the present land cover map was prepared using remote sensing data and the result of field survey to clarify the distribution of shifting sand, salt accumulated area, swampland and natural forest. Moreover, the area around Taunsa barrage is important as a habitat of Indus Dolphin and waterfowl, designated as wild animal sanctuary and Ramsar convention area. Therefore the rehabilitation plan was formulated under the full consideration of those water and ecological conditions. Furthermore, the basic study was also carried out in order to establish an appropriate environment protection plan.

### Our Assignment

- Collection and analysis of information on irrigated area about farming system, farmers' support, farmers' organization, irrigation and water control,
- Land use survey, analysis of remote sensing data and preparation of land cover map,
- Field survey on natural and social environment and implementation of IEE (Initial Environmental Examination),
- Study the necessity of Environmental Impact Assessment and formulation of environmental protection plan.

