

PROJECT TITLE	Final Evaluation of the 7th EDF financed Sea Defences Rehabilitation Programme
LOCATION	Guyana
CLIENT	European Commission - DG VIII & EC Delegation in Guyana

DESCRIPTION

Guyana has a coastline of some 430 km in length, generally lying 0.5 to 1.0 m below sea level. It is protected by a system of sea defences of which approximately 107 km are artificial, man-made sea defences. About 40 km of these man-made defences were in a serious state of deterioration, resulting in numerous breaches over the last years. The European Union made available, from resources of the 7th EDF, grant financing of approximately 12 million ECU to rehabilitate about 6,200 m of sea defences, plus 1.2 million ECU for Technical Assistance to the Project Execution Unit (PEU), responsible for the short term management of sea defences.

The preparation and implementation of this programme followed the logical framework approach.



In compliance with the standard requirements of the Project Cycle Management methodology, ADK Consulting Engineers performed the final evaluation study of the Programme. The objective of the study was to draw up lessons learned during the programme cycle by making:

- a global, quantitative and qualitative, assessment of the work carried out over the two and half years of the programme implementation;
- an appreciation of the programme preparation and design;
- an appreciation of the relevance, efficiency, effectiveness, impact and sustainability of the activities carried out under this programme;
- an identification and description of the problems (technical and/or managerial) encountered during the implementation, proposing possible measures to overcome them and making the comparison with the lessons to be learnt from other donors' contributions in the sector.

Under a second contract, ADK has carried out the final design and tender documents of the works and projects for the Guyana Sea Defences programme.

PROJECT TITLE

Rehabilitation of Approximately Four (4) km of Sea Defences in Regions 2 and 3
Essequibo Coast and West Coast Demerara

LOCATION

Guyana

CLIENT

European Commission - DG VIII & EC Delegation in Guyana

DESCRIPTION

The coastal plain of Guyana, an area of high economic activity and social interest, lays 0.5m to 1.0m below spring tide level, thus being subjected to flooding and erosion. This extensively cultivated and productive coastal plain is protected by approximately 359 kilometres of sea defences, comprising 252 kilometres of basically natural sea defences consisting of mangrove vegetation, small earth embankments and natural sand reefs, and 107 kilometres man-made sea defences consisting of concrete walls constructed many decades ago and having long outlived their design life spans, as well as some more recently constructed rip rap revetments. About 40 km of these man-made defences were in a serious state of deterioration, resulting in numerous breaches.



The study involved the detailed design of the sea defence structures at four coastal and riverine areas, with total length approx. 4 km, as well as the preparation of the tender documents for Works, Supply of materials and Supervision contracts. The basic design section, proposed by the client, consisted of a clay embankment with rock armouring. Rehabilitation and reconstruction works were proposed according to the extend of deterioration of the existing defences as well as the reformation and realignment of the coastline with the construction of new sea defences. Moreover, interventions such as the creation of natural shelters for fishing boats and the promotion of more environmentally friendly solutions – consisting of a low crest breakwater that allows the growth and preservation of native plantation (mangroves) that forms a natural protection against erosion and could restore the eroded land zone – were also introduced in certain areas.

Apart from the necessary hydraulic calculation for the determination of the design wave characteristics (determination of the extreme offshore waves and wave propagation to the coastal zone over variable seabed material characteristics with dedicated software – SWAN) and the design of the coastal protection works, earth strengthening measures (preloading, stone columns and the adopted method with woven geotextiles) have been considered due to the poor subsoil conditions.