

**INSPECTION PANEL INVESTIGATION REPORT
PAKISTAN NATIONAL DRAINAGE PROGRAM (NDP) PROJECT**

MANAGEMENT RESPONSE

ELABORATION OF THE SHORT TERM ACTION PLAN

1. The Bank has met with the Requesters, local authorities and stakeholders including fisherfolk, and discussed with Government of Sindh (GOS) authorities actions which could be undertaken in the short and medium term to address flood vulnerability and socio-economic and livelihood issues of people living in close proximity to LBOD and in the coastal zone of southern Sindh.

2. The Bank got involved in the LBOD and NDP to overcome a critical constraint to agricultural growth that was essential for poverty reduction. The Bank continues to be committed to the alleviation of poverty and flood and natural disaster vulnerability, and this commitment motivates the proposed action plan agreed between the Bank and GOS as presented in the Management Response. These discussions have continued since the Bank issued the Management Response, and this note provides a description of each element of an expanded and enhanced Short Term Action Plan. The medium and long terms measures as presented in Chapter VII of the Management Response remains relevant particularly with respect to the preparation and implementation of a flood and drainage master plan for the left bank of the Indus river and a coastal zone development program.

SHORT TERM ACTION PLAN

3. *Incorporation of the lessons learned from LBOD and NDP.* Management reflected on the experience with the implementation of the LBOD and NDP projects and summarized the lessons learned in Chapter VI of its Report. Overall the most important lessons concern how differently such a major infrastructure project would be done today in contrast to how it was done more than twenty years ago.

4. At that time the Bank and the Government mobilized the best available national and international technical expertise to undertake the design and construction. Today, the Bank would also ensure there was adequate consultation with all stakeholders, including local people and local and provincial authorities; that these stakeholders had ample opportunity to consider the options and the tradeoffs among alternatives (costs, benefits, risks); and apply current best practice that strikes a better balance between structural and non-structural measures (e.g. flood warning, flood refuges, etc.). Applying a more holistic approach to project planning and design would ensure that benefits are more widely distributed especially among the most vulnerable even though they are not among the direct beneficiaries. Also, appraisal and implementation today would benefit from new and/or improved operational policies addressing environmental, social, natural habitat, cultural assets, and other issues. These lessons are incorporated in the Action Plan.

5. ***Components of the Short Term Action Plan.*** The short term Action Plan consists of five activities:

- Implementation of the Coastal Area Development Program (CADP) in southern Sindh
- Rapid assessment of ecological and livelihood conditions in the dhands to identify immediate measures to improve livelihoods and ecological conditions
- Rapid assessment of existing local government flood risk management systems to reduce flood damage and vulnerability by building capacity and improving flood risk response
- Assessment of the condition of the right embankment of the LBOD spinal drain and KPOD and preparation of a detailed maintenance plan
- Processing of the Water Sector Improvement Project (WSIP) in order to ensure a rapid startup of the technical studies to design measures to improve the performance of LBOD and prepare a comprehensive flood and drainage plan for the left bank of the Indus River in southern Sindh.

6. ***Actions already taken by the Government of Sindh (GOS).*** GOS is pursuing four important initiatives to improve the livelihoods of people living near the dhands including the transient fisherfolk:

- GOS in collaboration with the Army repaired all the breaches found in the spinal drain and KPOD as a result of the 2003 storm
- GOS has reviewed the current fishing policies through extensive consultation and has agreed to abolish the licensing system which has traditionally restricted access to coastal zone fisheries, an action very favorable to the poor fisherfolk near the dhands
- GOS plans to construct new village infrastructure near to the prime fishing areas in the dhands including housing that can be used by the seasonal fisherfolk
- GOS plans to build a cooling and ice plant in the area of the dhands to improve the marketing operations and value of the fish catch

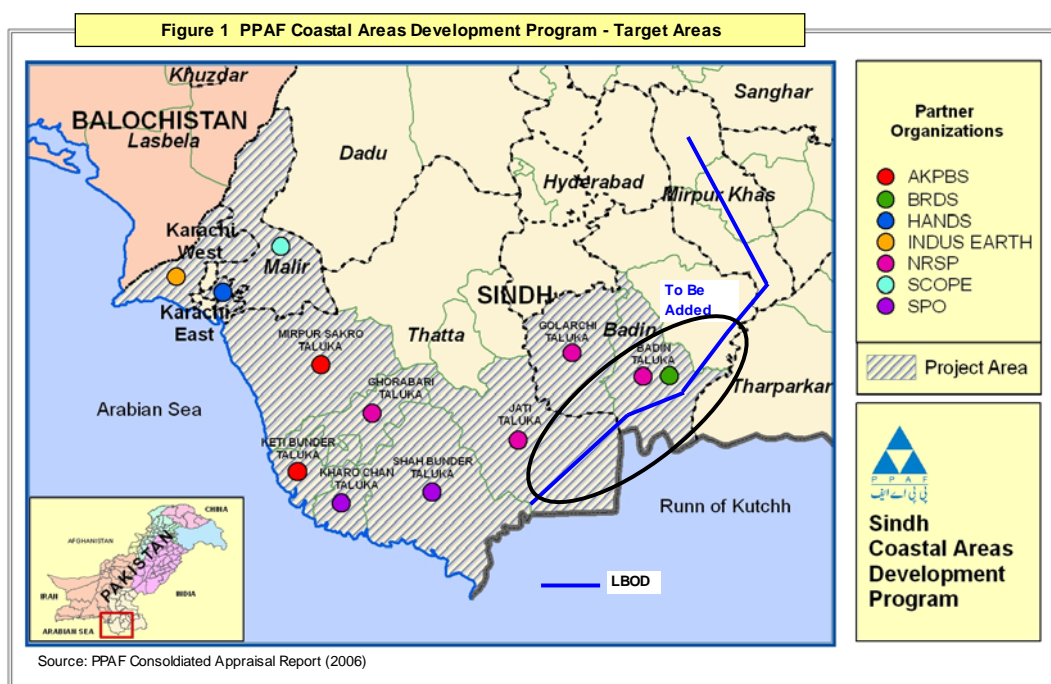
1.1 SINDH COASTAL AREAS DEVELOPMENT PROGRAM (PHASE I: 2006-2008)

7. ***Background.*** The Bank carried out a Socioeconomic Study of the coastal areas of Badin and Thatta districts in Sindh Province in 2005 including the coastal sub-districts (*talukas*) that are of concern to the Requestors. Poverty is pervasive in this vulnerable region. The study report highlighted the social and economic impact of natural disasters

that have struck this vulnerable region in the past decade including monsoon storms, cyclones, floods, droughts and earthquakes.

8. **Program implementation.** The Coastal Areas Development Program (CADP) will be implemented by the Bank-funded Pakistan Poverty Alleviation Fund (PPAF) through its partner organizations (POs) who are NGOs with extensive rural and community development experience and active in this region. PPAF has the best and most experienced record of successful community based poverty alleviation program development and implementation in Pakistan, and its partner organizations are among the most serious and experienced.

9. The 11 CADP target *talukas* are shown in Figure 1. As indicated the taluka that borders LBOD to the northeast of Badin will be added to ensure that all areas potentially affected by LBOD (the area generally within the oval shown in Figure 1) will be included in the program.



10. **Enhanced targeting and communications.** The Bank will work closely with PPAF and the POs to ensure that a comprehensive communication strategy and awareness campaign is implemented to ensure that all potential communities are fully aware of the program and understand how to gain access to the benefits provided by the program.

11. To ensure that all communities located near LBOD and its outfall system receive assistance in Phase I, the Bank has requested PPAF to add the taluka adjacent to Badin as indicated in Figure 1 to the program, to survey each of the Union Councils in the four talukas to identify people and villages most seriously impacted by the 2003 flood, and to give priority to developing a program of assistance for these communities. Bank

specialists will meet with PPAF and PO staff to review Bank policies and criteria for Indigenous Peoples and cultural property and ensure that these are applied in the course of PO activities. In its supervision of the Action Plan, the Bank will monitor and report on program implementation.

12. **Program scope.** The scope of CADP includes (i) better access to basic services and facilitating infrastructure; (ii) higher income generation through improved crop, fisheries and livestock production, marketing and micro-finance services; (iii) secure access to, and better management of the coastal area natural resources; (iv) viable community organizations that can operate in partnership with the public and private sector and NGOs and, (v) improved access to high quality education, information, training and better nutrition and health. Among the issues that have been singled out for special attention are lack of safe drinking water, transport and mobility including village roads and intermediate modes of transport, adverse impacts of sea water intrusion, reducing physical vulnerability including flood risk, and the special problems of transient fisherfolk. Because of the remote location of the target talukas and communities, special attention will be give to technological innovation including solar and wind energy for pumping and generation of electricity.

13. **Program approach.** Partner organizations work with communities in their designated area to mobilize community participation and organization. They assist the new community organization to determine needs and priorities, project selection and preparation, and determine community participation in implementation including cost sharing in kind. Training is provided to new community organizations. Strategies for assisting the communities, especially the poorest fisherfolk communities are strengthened and refined based on social immersion within the target villages and households to ensure that PO and PPAF staff has a sufficiently deep understanding of the conditions and livelihoods of the people.

14. **Phase I funding and timing.** The Phase I program is estimated to cost about US\$6 million over the two year period 2006-2008. Initial allocation of about US\$2 million for Phase I has been allocated to 217 sub-projects in the eleven talukas (Figure 1). Phase II will be for a period of three years (2008-2011) with planned funding of US\$12 million.

1.2 SOCIO-ECONOMIC AND ENVIRONMENTAL ASSESSMENT OF THE DHANDS

15. The dhands, wetlands considered to be important for their waterfowl and fishery values, were damaged in 1999 when the Tidal Link canal and the Cholri Weir were damaged by a cyclone. While baseline studies of fisheries and waterfowl in the dhands were carried out in 1997 and 1998, no systematic studies of trends and conditions or collection of data to update the baseline has been carried out since the 1999. Moreover, these initial studies included only a very limited assessment of the land use and fisherfolk located near the dhands.

16. **Objectives and timetable.** The Bank and the environmental and social units of the Sindh Irrigation and Drainage Authority (SIDA) will undertake a diagnostic study of the

dhands with two objectives: (i) to determine the extent and severity of the adverse impacts that have occurred on the people living near the dhands or in areas that have been directly impacted, and formulate short-term measures and long-term livelihood assistance programs; and (ii) to determine the present physical and ecological condition of the dhands paying particular attention to water quality, biodiversity and habitat, and the productivity and quality of the fishery with the aim of formulating and implementing short term measures to stabilize and improve present conditions. The terms of Reference have already been prepared and agreed with the GOS and the study will be completed by July 2007.

17. **Approach.** The socio-economic study of people in the area will be based on rapid appraisal methodology including household sample survey, focus group and key informant discussions and meetings with local authorities and civil society organizations including the Fisherfolk Forum. Field studies will be carried out to assess ecosystem health and water quality, the condition of the fishery and its productivity and value, and waterfowl habitat and populations.

18. **Pilot testing of physical options.** Immediate options to halt the further degradation of the dhands will be investigated including construction of natural barriers using mangroves and/or reeds to halt the penetration of excessive drainage and sedimentation further into the dhands with the aim to implement a pilot project to test these and other concepts that may be investigated. This may involve the determination of which parts of the dhands will be provided immediate protection based on the fishery and ecological assessments. In particular, the larger dhands, Sanhro and Mehro where the Ramsar sites are located will likely receive immediate attention.

19. **Integration with FAO comprehensive study of Sindh coastal zone.** GOS and the Bank have requested FAO to undertake a broad review of the knowledge base, issues and options for development and management of the coastal zone and the Indus Delta with the aim of developing and implementing a program of investment and management. The rapid assessment of the dhands will be an important input into this larger study expected to begin in late 2007.

20. **Integration with PPAF's CADP program.** This assessment will be carried out in collaboration with PPAF's partner organization (PO) in Jati Taluka of Thatta district and Golarchi Taluka of Badin District to insure that the findings of the assessment and the CADP program are fully integrated, and there is a rapid follow-up of the study.

1.3 RAPID ASSESSMENT OF EXISTING LOCAL GOVERNMENT FLOOD RISK MANAGEMENT SYSTEMS

21. Local governments in Sindh have historically been responsible for flood management and at least at district level a system has been in practice for many years. However, with the exception of post-disaster response in terms of relief and reconstruction, many key elements of these systems have suffered from neglect in competition with other priorities and pressing needs. The particular physical setting of southern Sindh limits what can be done to control or prevent floods from the typically

intense monsoon rain storms. Hence, the effectiveness of the local systems of flood warning, preparedness and response are an especially critical aspect of flood risk management.

22. ***Objectives and timetable.*** The aim of the study is to identify gaps in this system and to formulate a program to fill those gaps with plans, systems, facilities and equipment as appropriate. It is perhaps most important that the program is designed to build the capacity of people responsible at all levels for implementation of these plans and systems. The study will be completed by July 2007

23. ***Implementation partners.*** This assessment will be carried out in collaboration with local government officials at the district and lower levels (tehsil and union council) and with village leaders as well as the PPAF CSDP partner organizations (PO) and other key agencies such as the Meteorological Department and other concerned provincial departments. The local government system of flood risk management has three key elements: flood forecasting and warning systems, flood preparedness and response plans tailored to each specific level of warning.

24. ***Scope of the assessment.*** The study will assess the present system of rainfall forecasting and reporting of the Meteorological Department, the communications system by which local authorities receive these reports and forecasts and the process and system for translating these forecasts into readily understood warnings and their dissemination to each level where a response is required. Flood preparedness includes a wide range of measures including materials and equipment and the readiness and capacity of people who will be required to take timely action. Preparedness also includes ensuring that there are sufficient and adequate flood escape routes and refuges and the means for people to utilize these facilities to protect life and property. Response plans include the actions that officials and local people should take in each to each level of warning. They also include information on who will be responsible for disseminating the warning and who will lead and organize the response.

25. ***Implementation of immediate options.*** Improvements in local flood risk management systems, for example in flood warning, communications and capacity building, can be expected to appear gradually over time. Immediate measures could be taken in vulnerable villages. The most vulnerable villages and areas will be identified in consultation with district, tehsil and union council authorities and village leaders. In these areas immediate measures such as undertaking the construction of flood platforms and refuges, construction of small flood bunds, improving drains, and reducing isolation and improving mobility by improving village roads which not only enhance people's opportunity to escape but also the timeliness of response and relief. The costs of these measures can be financed under several existing Bank projects including the forthcoming Sindh WSIP project and under the PPAF CADP program.

1.4 STRENGTHENING OF THE RIGHT BANK OF THE LBOD SPINAL DRAIN AND KPOD

26. As the Management Response acknowledges, breaches in the right embankment of the spinal drain and KPOD occurred during the record storm of 2003. While the extent to which water spilling from these breaches contributed to flooding near LBOD has not been determined and is the subject of technical debate, the chance of this occurring in the future can be reduced if the right embankment is in good condition especially in its most vulnerable sections where it passes low lying areas.

27. *Preparation of a maintenance review.* The Bank, in collaboration with WAPDA and the Sindh Irrigation and Drainage Authority (SIDA), who are responsible for operation and maintenance of LBOD, will undertake a detailed field examination of the right embankment of the spinal drain and KPOD. The mission will identify vulnerable sections, identify specific measures that may be needed to complete secure repair of the old breaches and measures that may be needed to eliminate any identified weaknesses in the embankment or conditions that could lead to a threat to the embankment, and prepare a detailed maintenance plan including estimates of the cost of civil works that may be required. The Bank would be willing to provide support for its implementation if requested. Completion of the review will be done by May 2007.

1.5 ACCELERATED PROCESSING OF WSIP PROJECT AND ESTABLISHMENT OF THE FLOOD MANAGEMENT PLANNING PROGRAM

28. The 2005 Panel of Experts mission identified and analyzed seven options that could be undertaken to strengthen and improve the performance and security of LBOD. Many of these options had been proposed before by others but no technical studies of alternative combinations of these options have as yet been carried out. An important lesson of the LBOD experience is that, given the risks, such decisions should be based on an upgraded data and knowledge base in which expanded monitoring data are well integrated. Moreover, the storm of 2003 showed that flood and storm drainage management plan integrated with agricultural drainage requirements is a development imperative for southern Sindh.

29. The Bank and GOS have agreed to establish such a planning program and undertake its implementation immediately when the new WSIP project becomes effective. The WSIP project is expected to be presented to the Board in February 2007.

30. The preparation of such a flood and drainage management plan was originally agreed with local stakeholders in a series of consultations carried out during the preparation of the Drainage Master Plan (DMP). The planning studies will include options to improve LBOD, and options to meet storm and agricultural drainage needs on the broad flat plain stretching from the Indus River to Badin and the coastal zone (the so called left bank area in southern Sindh). The focus will be on evaluating alternative integrated plans that include both structural and non-structural options (the study outlined in section 1.3 above will provide an important input), reflect the views of stakeholders

obtained through consultations in all parts of the region, and integrate environmental and social issues and considerations.

31. A modern world-class knowledge base will be developed with appropriate analytical tools (models) and information management systems to support planning and subsequent operations and management including the implementation of flood risk management by local authorities.

32. Feasibility studies of the highest priority works and other measures will be carried out and project prepared including designs so that GOS with support of its donor partners can implement them without delay.