

# **SUMMARY INITIAL ENVIRONMENTAL EXAMINATION REPORT**

Supplementary Appendix to the  
Report and Recommendation of the President  
to the Board of Directors

on the

**RESTRUCTURING OF THE TECHNICAL EDUCATION AND VOCATIONAL TRAINING  
SYSTEM PROJECT (BALOCHISTAN PROVINCE)**

**ISLAMIC REPUBLIC OF PAKISTAN**

This report was prepared by the Borrower and is not an ADB document.  
The IEE is available on request.

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## SUMMARY INITIAL ENVIRONMENTAL EXAMINATION

### A. Introduction

1. In compliance with the Asian Development Bank's (ADB's) environmental requirements, an initial environmental examination (IEE) was conducted for the Restructuring of Technical Education and Vocational Training System Project (Balochistan). The Project is categorized B in accordance with ADB's *Guidelines on Environmental Assessment* (2003). Project subcomponents to be financed by ADB showed no adverse environmental effects. Project activities with associated marginal impacts, and the main mitigation measures proposed are summarized below.

### B. Description of Subprojects and Components

2. The captioned Project will support the Department of Industries (DOI) in the North West Frontier Province (Balochistan) in Pakistan to reform its technical education and vocational training (TEVT) system covering post secondary technician education at the polytechnic level, middle level technical and vocational training for students with grade 8 pass, and livelihood training for rural poor and women. It will comprise three components: (i) institutional development; (ii) improvement in quality and relevance of TEVT programs; and (iii) access and equity enhancement. The main focus of the Project is to improve the capacity of TEVT institutions to be more competitive and responsive to labour market needs by emphasizing public-private partnership, on-the-job training, and counselling services for job placements; and performance-based management and management development programs for a more efficient delivery of TEVT programs. The focus on making the TEVT programs more relevant and of higher quality is through competency-based training, teacher training, provision of learning resources, and quality control. The Project also focuses on rural poor and women through new programs and facilities for women, livelihood training for rural areas, and entrepreneurship training and support to access micro-credit for self-employment.

3. As part of the activities envisaged, the Project will be responsible for the construction and upgrading of technical and vocational training centres housing 100-200 students and 2 larger polytechnics housing up to 500 students each, with up to 1,000 students expected to be enrolled when in full capacity including evening shift. The Project will also introduce new technology courses, which will include programs in fisheries, computer technology, telecommunications and welding.

### C. Description of the Environment

4. The description of the environment hereby presented focuses on the district areas where construction of polytechnics is to take place, as this is where major issues are to be addressed.

Location of the District	District <b>Gwadar</b> (lies between 25° – 01' to 25° – 45' north latitudes and from 61° – 37' to 65° – 15' east longitudes)	District <b>Khuzdar</b> (lies between 25° 43' and 28° 52' North latitudes and 65° 42' and 67° 29' East longitudes).
Area of the district	12637 km <sup>2</sup> . 7618 km <sup>2</sup> for Pasni.	35380 km <sup>2</sup>
Population of the District	185,500(1998 Census), 75,750for Pasni Tehsil	417,470 (1998 Census)
Average Annual	2.99% & 1.9% for Pasni	2.45 %

Growth rate		
Rural / Urban Distribution	46.01% rural (85350) and 53.99 % urban (100150). Pasni: Rural is 45.8% and for urban is 54.2%	71.67 % rural (299220) and 28.33 % urban (118250) of the total population.
Male & female in %	53% (40266) male and 46.8% (35484) female for Pasni.	52.7 % (220023) male and 47.3 % (197443) female
Literacy ratio	All areas: 25.47% of the total population (Rural 14.84% and Urban 34.07%)	All areas: 17.46 % of the total population (Rural 12.28% and Urban 30.71%)
Topography and elevation	The coastline of Gwadar district extends in the east-west direction and it is almost desert. The Makran subduction zone is an area of major seismic activity particularly near Pasni. The coastline is deeply indented with bays but its most characteristic feature is the repeated occurrence of promontories and peninsulas of white clay cliffs capped with coarse limestone or shelly breccias which all approach the table-topped form. The general elevation of Makran coast range is up to about 1000 meters above sea level. Pasni is about 0-200 meter above sea level.	The district is a vast mountainous region consisting of a large number of ridges and hills, formed of folded sandstone and shale. In the plain between the ridges, the soil is generally fertile and suitable for growing wheat, cotton, fruit & vegetables. The general elevation of the district is about 1800 to 3000 meter above sea level.
Climate	The uniformity of temperature of Gwadar district is a unique characteristic of the coastal region in Balochistan. The effects of the monsoon are felt in the coastal part from June to September with damp and cloudy weather. The summer season lasts from April to November, but June is the hottest month. The mean maximum and minimum temperature in summer is 35° C and 27° C and in winter 25° C to 13° C respectively. The rainfall is uncertain and scanty and average rainfall is only 101 mm. Due to low precipitation, aridity prevail all over the district.	The climate of the district is warm in summer and cold in winter but in summer there is a great variation between day and night temperature. The mean maximum and minimum temperature in summer is 38° C and 25° C and in winter 17° C and 3° C respectively. The rainfall is scanty and mostly occurs in winter. The annual average rainfall is about 243 mm.
Flora	There is no significant flora in the district. It mainly consists of grass and spiny scrubs. The landscape features chish (acacia), chigird and kahur (prosopis spicigera) in the plain and gazz or tamarisk trees in the bed of torrents. Some plants of Pharmaceutical importance include aishak, guldir, morpuzo, danichk, keraich and udesh are also found in the district. There are no threats to flora in the proposed site.	In Khuzdar district wild olive, tamarisk and dwarf palm are found. Some varieties of acacia, parpuk or loiro and the belellium-producing guggul trees are also seen.  There are no threats to flora in the proposed site.
Fauna	In Gwadar district sind Ibex and Chinkara are found rarely. Yrial has been declared as endangered species. Amongst the birds most common are sea partridge and water fowls. Amongst the sea-life sea snakes are common. No adverse impacts are envisaged on the indigenous species in the proposed site.	Wildlife in the district include Balochistan black bear, urial, houbara bustard, caracal, sind ibex, chikor, red fox, grey partridge.  No adverse impacts are envisaged on the indigenous species in the project area
Agriculture	Agriculture is not very strong sector in Gwadar District but some are cultivated such as	Agriculture is fairly strong sector in Khuzdar. The main crops are wheat, rice, cotton, jowar,

	<p>wheat, barley, mutter pulse, masoor, vegetables, and fodders.</p> <p>Major sources of irrigation in the district are stream and spring and rainwater.</p> <p>There is no threat to agriculture sector as proposed land is barren and not being used by any agency or individual.</p>	<p>barley, pulses, fruit and vegetables. The land is fertile but due to shortage of irrigation water the amount of arable land is small. The main source of irrigation in the district is flood and rainwater. Permanent irrigation sources include tube well, Karezes and springs. There is no threat to agriculture sector as land is currently barren.</p>
Forestry	<p>There is very little forestry or plantation in the district. Plantation has been carried out in Pasni under the sand dunes stabilization project with assistance of the World Bank. Frequently found plant in the district is dwarf palm. Dates are common fruit plant in the district. Other fruit plants are Guava, Banana, Loquat, Papaya, Chikoo, and Coconut.</p>	<p>The forestry activities are limited in Khuzdar district. The total state forest area is about 1% of the total area of Khuzdar district.</p> <p>Due to intervention of tube well, farmers have planted fruit trees such as Almond, Apple, Apricot, Grape, Peach, Plum, Pomegranate, Pistachio, Date, Mango, Citrus, Banana, &amp; Guava.</p>
Livestock	<p>Livestock farming is not a prominent sector in Gwadar district. Inception of new occupation and urbanization has decreased interest in livestock farming. However some people are still involved in this activity. Variety of livestock is available in the district such as Cattle, Sheep, Goat, Camel, Mule, Ass and poultry.</p>	<p>Khuzdar has a great potential in livestock as fodder is produced in large quantity in the district. A variety of livestock is available in the district such as Cattle, Buffalo, Sheep, Goat, Camel, and Poultry.</p> <p>No impact of the project on the livestock.</p>
Industry and trade Mining & cottage Industry	<p>Industry in Gwadar district consists of fisheries, power generation plants. Fish is the major export of the district. Manufacturing units in the district include ice factories, and boat making.</p> <p>Tourism can also be developed as an industry with little effort. The 600 Km long beach of the district may have great potential for development as a tourist resort.</p>	<p>The district has many minerals such as barite, chromites, granite, marble and building stone. There is much potential for mineral production and two tile factories are also functioning at Khuzdar.</p> <p>Small scale and cottage industry in the area include carpet making, woodwork and mazri making. Embroidery work and needlecraft is widely practiced by women folk and it fetches a good price in the markets of Quetta and Karachi. There are opportunities available to use the local stone and tiles for construction under the Project.</p>

#### **D. Forecasting Environmental Impacts and Mitigation Measures**

5. Environmental impacts for location, design and construction have been considered for the polytechnic subcomponent of the project, as the remaining of the activities with potential impacts will be of small enough size not to result in any significant impacts. Environmental impacts and mitigation measures for other subcomponents are considered as part of the operational stage, such as for the technical education and vocational centers.

##### **a. Location**

6. The Selected site for construction of the polytechnic in the Pasni teshil is situated in the proximity of Pasni city. The 100 acres site was donated and is due to be transferred to the Education Department, Government of Balochistan. The construction of the polytechnic institute for women in Khuzdar district is to take place in 20 acres of land to be transferred by the Revenue Department to the Education Department. As such, no issues associated with land

acquisition are expected to occur as part of this project. Moreover, no encroachers have been sighted on either site.

7. Four major earthquakes have been reported around Pasni in the past century, along with 18 smaller events. Given the earthquake prone location, mitigation measures shall ensure that in all construction activities strict implementation of Building Rules is enforced, capable of withstanding earthquakes of magnitude 5 (Richter scale) or above. All chemical material for use in training activities should be safely stored to prevent any breakage and ground contamination in case of earthquakes.

8. Water availability (surface water sources only) is currently scarce in the Pasni district. A dam is to be constructed by the GoP in the near future, but in the absence of such infrastructure all efforts should be made to encourage water conservation/recycling programs to be introduced as part of the Polytechnic's activities. Similar activities should be proposed for Khuzdar's Polytechnic, where a pumping system will have to be installed for the extraction of groundwater (the main source of water in the district). The groundwater to be pumped on site, 200-300 feet depth, must be tested for quality prior to using for drinking purposes.

#### **b. Design**

9. Current practices in both districts where the polytechnics are to be located do not involve comprehensive sanitation practices. It will be therefore necessary to ensure that the polytechnics' design includes sanitation facilities on-site (latrines and sinks), as well as drainage, sewerage and on-site septic tanks. This is particularly important for Khuzdar district, where open drain and soakage pit practices are used for disposal.

10. Soil quality and structural composition must be assessed prior to starting construction of foundations, in particular in Pasni teshil, where the selected site is near the sea. Such study, to be conducted during engineering design, should determine the suitability of the location as well as the building's maximum height and load.

#### **c. Construction**

11. Site construction activities will generate dust, noise, vibration as well as possible undesired odors that will affect both workers on-site and nearby population (including the center for Special Children in Khuzdar, and the Mir Rehmat Kalmati Inter College in Pasni), whilst soil erosion may result from land preparation activities. Proposed mitigation measures include the use of dust suppression techniques such as covered wagons and skips, work within agreed hours, plant and equipment with low operating noise levels, limiting excavation and land leveling works during the rainy season.

12. Reduced vehicle accident risk and disturbance prevention, resulting from increased traffic volume, is to be enforced through a sound traffic management plan promoting traffic flow and focusing on the school areas and highway crossing. Interaction with the public will be encouraged through continuous dialogue and information exchange, establishing a procedure for recording and dealing with complaints, and workers instruction. Good health and hygiene practices at work and reduced work accidents will be achieved by means of an Occupational Health and Safety Plan (OHSP), which will include emergency plans, personnel basic training, first aid provisions and a comprehensive domestic solid waste management plan and sanitation facilities for the construction camp. Most of these measures will also be enforceable during the operation stage of the site.

#### **d. Operation**

13. In the operation phase, environmental mitigation measures shall include regular collection of solid waste and disposal in appropriate sanitary landfill site by Pasni's TMA and Khuzdar's City District, respectively. Moreover, regular operation and maintenance of polytechnic's latrines and emptying of septic tanks must be ensured by the Department of Education (DOE) and TMA/City District, respectively. Pre-treated sewage leaving the septic tanks should be further treated in local sewage treatment plant, if available.

14. An oil separator (stilling basin) will be integrated in the design to prevent oily substances, used in vocational training activities, from entering septic tanks with other water. In general, segregation of waste must be ensured at all stages, followed by reuse, recycling and/or safe disposal practices. Where substances designated as hazardous or toxic under the national law are to be used as part of the training activities (e.g. mining or welding), provisions for waste management plans, focusing on the protection of human health and the environment against harmful effects caused by the collection, transport, treatment, storage and disposal of such waste, will be generated by the DOE in agreement with the city and tehsil authorities. National and Provincial Environmental Codes of Practice (for Solid Waste Management in Urban Areas, Hazardous Waste Management, and Sewage and Sanitation Management) will apply.

15. As part of selected precautionary measures and to ensure full compliance with the Labour Act, an Occupational Health and Safety Plan (OHSP) for relevant institutions delivering training courses shall cover work-related safety and health issues of personnel and public. The OHSP shall include an emergency plan for project-related accidents and calamities.

16. In order to prevent further soil erosion leading to loss of land in the selected site for the Pasni Polytechnic institute, it is recommended that planting of vegetation takes place in the sand dunes. Tree plantation should also be considered for Khuzdar's site as this would improve the environmental condition of the project area.

#### **E. Environmental Monitoring Plan and Institutional Requirements**

17. Technical and institutional mitigation measures will be incorporated in the detailed design of the Project. Measures of a planning, functional, institutional and procedural character have to be included in the in the tender documents, in the OHS Plan, the Traffic Plan, and permits and Environmental Clearance(s) with Pakistan Environmental Protection Council (PEPC). The mitigation measures related to the construction works have to be stated in the contract with the Contractor, who will be responsible for the implementation of environmental mitigation measures throughout construction and the preparation of its own environmental management plan. The Project Management Unit (PMU) at the DOE, in collaboration with PEPC, will be responsible for monitoring and enforcement during design and construction. During the operational phase the national environmental quality standards will be respected where necessary, such as wastewater discharge to open courses or potential air emissions. The DOE, Government of Balochistan will be responsible for implementing environmental implementation measures during the operational stage, and PEPC will conduct occasional spot inspections. The local government at Khuzdar and Pasni will also monitor the project under local laws and security and monthly reporting to the Project Director (Technical Education), Quetta will be carried out on the implementation of Project. Mechanisms to include community based monitoring should be considered and assessed.

#### **F. Public Consultation and Disclosure**

18. Community consultation is a key part of the development of the urban planning and management strategy. The community was consulted during a function organized by Divisional Public School Khuzdar, where the Secretary Education informed them of the construction and opening of boys and girls polytechnic institutes. The Project was well received by the community, which is eager to see the commencement of the construction works, as most of the local material will be utilized in the Project, providing job opportunities. Students at Pasni were also consulted. They received well the Project and saw the potential reduction in studying costs caused by the current need to move to larger cities as the major advantage.

**G. Findings, Recommendation and Conclusions**

19. The project is not expected to have any significant adverse impact on the local environment. Minor environmental issues to be addressed during the construction and operational phases, will be mitigated through the implementation of proposed measures and regular monitoring.

20. In addition to the above-mentioned measures, a system should be devised with the city transport authorities for the development of transport facilities to and from the site.