



Report and Recommendation of the President to the Board of Directors

Project Number: 33268
April 2006

Proposed Loan Islamic Republic of Pakistan: Federally Administered Tribal Areas Rural Development Project

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 21 March 2006)

Currency Unit – Pakistan rupee/s (PRs/PRs)

PRs1.00 = \$.0165

\$1.00 = PRs60.58

ABBREVIATIONS

ADB	–	Asian Development Bank
EA	–	executing agency
EIRR	–	economic internal rate of return
ENPV	–	economic net present value
FATA	–	Federally Administered Tribal Areas
IA	–	implementing agency
ICM	–	integrated crop management
LARC	–	land acquisition and resettlement cell
M&E	–	monitoring and evaluation
MIS	–	management information system
NWFP	–	North-West Frontier Province
O&M	–	operation and maintenance
PIU	–	project implementation unit
PMU	–	project management unit
PPMS	–	project performance management system
PRB	–	project review board
PSC	–	project steering committee
TA	–	technical assistance

NOTE

In this report, "\$" refers to US dollars.

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LOAN AND PROJECT SUMMARY

Borrower	Islamic Republic of Pakistan
Classification	Targeting Classification: Targeted intervention Sector: Agriculture and Natural Resources Subsector: Agriculture production, agroprocessing, and agribusiness; forest; irrigation and drainage; livestock; water resource management Theme: Sustainable economic growth Subthemes: Developing rural areas, fostering physical infrastructure development
Environment Assessment	Environmental category "B sensitive." An initial environmental examination was undertaken and the summary initial environmental examination circulated.
Project Description	Project initiatives focus on improving the quality of life for the region's inhabitants. Activities include establishing sustainable productive technologies with arrested environmental and resource degradation through integrated resource management, including agriculture and livestock production, and farm and community forestry. New construction and upgrading of existing infrastructure for production, water consumption, and transportation represent significant aspects of the Project. Project management will operate closely with government line departments and the Project will be implemented through community participation to improve community involvement in designing and implementing project interventions. Capacity-building initiatives, as well as training in community organization, strengthened project management skills, and improved institutional capabilities for line departments to better address the needs of the poorer segments of the society are important project activities.
Rationale	Poor and inefficient management of available natural resources contribute to the pervasive poverty in the Federally Administered Tribal Areas (FATA). The poor farm and livestock productivity, and consequent poverty, restrains transition from below-subsistence livelihoods. Capacity and the ability to explore other opportunities are restricted by poor access to productive and physical infrastructure. The degradation of the physical environment, if not checked, will worsen the situation.

Impact and Outcome

The Project is designed to improve the productive potential of selected micro-watersheds and their associated natural resource base; and to strengthen the planning, implementation, and management capacity of the target communities and implementing departments in the project area. This will be accomplished by improving community infrastructure for production and communication; establishing effective and broad-based community organizations focused on development; increasing production from renewable natural resources; and strengthening agency-based planning, implementation, and capacity for improved service delivery to communities.

Project Investment Plan

The total project cost is estimated at \$60.4 million equivalent. The Government will provide \$15.4 million equivalent, or 25% of the project cost. Project beneficiaries will contribute \$3.0 million equivalent, or 5% of the project cost through labor and other in-kind inputs.

Financing Plan^a

(\$ million)				
Source	Foreign Exchange	Local Currency	Total Cost	Percent
ADB	11.4	30.6	42.0	70.0
Government		15.4	15.4	25.0
Beneficiaries		3.0	3.0	5.0
Total	11.4	49.0	60.4	100.0

ADB = Asian Development Bank.

^a Since the project, including its cost estimates, was prepared and agreed with the Government prior to the issuance of the staff instructions on *Cost Sharing and Eligibility of Expenditures for ADB Financing*, the RRP distinguishes between foreign and local cost.

Source: Asian Development Bank estimates.

Loan Amount and Terms

The Asian Development Bank (ADB) will provide a loan of \$42.0 million from its Special Funds resources. The loan will have a 32-year term, including a grace period of 8 years, and an interest rate of 1.0% during the grace period and 1.5% per annum thereafter.

Period of Utilization

Until 31 December 2011

Estimated Project Completion Date

30 June 2011

Executing Agency

Ministry of States and Frontier Regions

Implementing Agency

The Governor's Secretariat (FATA)

Implementation Arrangements

Project implementation arrangements follow a partly decentralized approach: (i) a Peshawar-based project management unit, under the management of a project director, will coordinate project-related activities, consolidate work plans, award procurement contracts, recruit consultants, perform monitoring and evaluation, supervise consultants and contractors, and manage project finances; and (ii) agency-based project implementation units will prepare work plans, coordinate amongst line departments, award procurement contracts, assist with supervision of consultants, assist with monitoring and evaluation, and manage finances. A project manager will head each project implementation unit. Consultants, contracted technical services, and line departments will provide requisite technical support.

Procurement

Requisite goods, works, and services will be procured according to ADB's *Guidelines for Procurement*. Civil works related to the community infrastructure component will be procured in accordance with local competitive bidding procedures or other procedures acceptable to ADB.

Consulting Services

A total of 147 person-months of consulting services, comprising 21 person-months of international and 126 person-months of domestic consultant inputs, will support project implementation. In addition, service contracts will be awarded to undertake certain specialized project activities. The Government will engage consulting services in accordance with ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for the engagement of domestic consultants. Quality-and cost-based selection procedures will be used in recruiting the consultants.

Project Benefits and Beneficiaries

The Project will generate significant quantifiable and nonquantifiable benefits. Effective implementation of the Project will have a direct impact on household incomes. Farm and livestock packages will increase the productivity of about 52,500 hectares on rain-fed (*barani*) lands and benefit around 37,500 households. It will also strengthen food security and improve the nutritional status of farm families.

The integrated approach involves the complementary management of natural resources, agriculture, and range management. Effective forestry and range management will ensure water harvesting and recharge of groundwater resources, check soil erosion, and provide forage and foliage to livestock. The construction and rehabilitation of irrigation and small-scale water storage structures will ensure the availability of irrigation and drinking water supplies. Improved farming and livestock rearing practices and additional income from rehabilitation of the natural environment are livelihood strategies that will be made available for the benefit of individual households. The target population will obtain access to opportunities for improving their livelihoods, broaden their networks of knowledge and contacts with service providers, and learn more productive farming practices with all the community sharing access to new and improved supporting infrastructure.

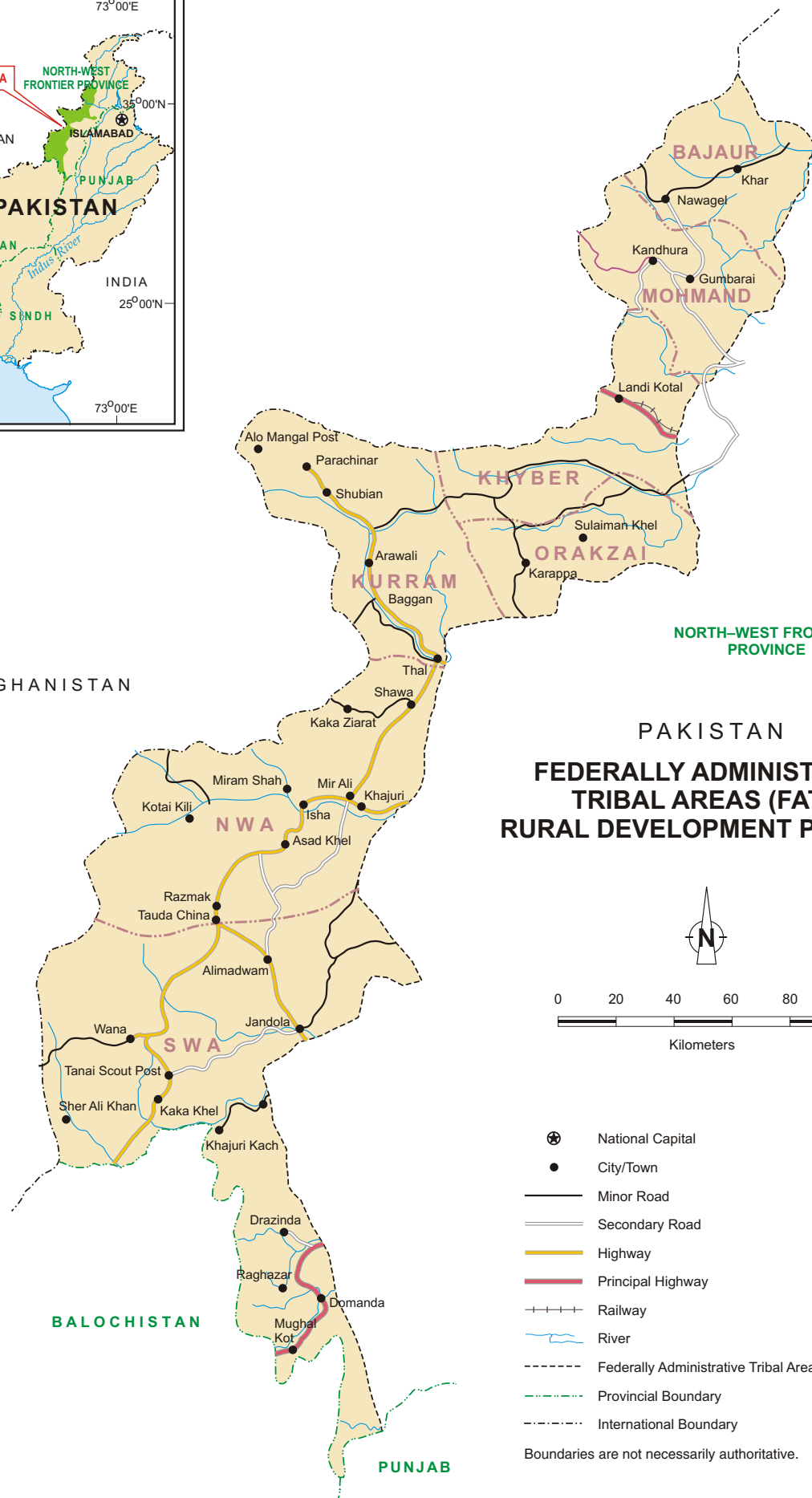
Risks and Assumptions

Key assumptions are that (i) the project area remains accessible vis-à-vis security and for development; (ii) political administrations will provide positive support; (iii) the sociocultural system accepts the poverty reduction focus and participatory approach, which is critical to project success; and (iv) the agency-based technical departments and communities are willing to adopt the watershed planning approach. The Project also assumes that the client communities will accept their role in the operation and maintenance of the infrastructure interventions.

Risks include the watershed approach not resulting in reduced soil erosion, increased groundwater recharge, increased surface water for supplemental irrigation, and improved soil fertility. Complementary investments may not occur at the micro-watershed level, particularly for rural link and access roads. Secretariat and agency-based administrators and technical staff may not utilize the project imparted training to function as effective partners in the development process. Selected interventions will be site-specific; the approach and interventions will be piloted during the first year of the Project. Proposed intensive evaluations and detailed assessments will result in a feedback loop to allow continual learning and adjustments to project implementation.



AFGHANISTAN



NORTH-WEST FRONTIER PROVINCE

PAKISTAN

FEDERALLY ADMINISTERED TRIBAL AREAS (FATA) RURAL DEVELOPMENT PROJECT



0 20 40 60 80 100

Kilometers

- National Capital
- City/Town
- Minor Road
- Secondary Road
- Highway
- Principal Highway
- Railway
- River
- Federally Administrative Tribal Area Boundary
- Provincial Boundary
- International Boundary

Boundaries are not necessarily authoritative.

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to the Islamic Republic of Pakistan for the Federally Administered Tribal Areas (FATA) Rural Development Project. The design and monitoring framework is in Appendix 1.

II. RATIONALE: SECTOR PERFORMANCE, PROBLEMS, AND OPPORTUNITIES

A. Performance Indicators and Analysis¹

2. Poverty in Pakistan is a predominantly rural phenomenon. Approximately 77% of the population and the vast majority of the nation's poor reside in rural areas. Most derive their living from agriculture and off-farm employment. Agriculture remains the single largest sector of the economy, and is the most important sector for employment and income generation. The sector accounts for about 26% of real gross domestic product and approximately 50% of employment. Growth in the sector has stagnated over the past few years, although it is likely to remain the primary contributor for some time. An uncertain policy environment (especially concerning the prices and marketing of major crops) combined with widespread resource degradation has contributed to low productivity and profitability. Other contributors to the sector's performance include low quality inputs, poor quality of support services, inefficient water resource management, and inadequate rural infrastructure.

3. FATA's pervasive poverty has not been statistically documented. The Pakistan integrated household survey has not been implemented in FATA and no statistically valid surveys or samples are available. While this has been a distinct frustration for government planners, the situation is far from unclear. Rural residents receive few social services; drinking water is in short supply throughout the region, a condition reflected in high infant and child mortality; and village sanitation is inadequate. Educational facilities are deficient in most villages and nonexistent for most girls. Most children do not attend school at all, and literacy rates are among the lowest in the country. Health facilities are substandard at best and usually not available at all. Factors underlying the region's poverty include (i) historical, political, and social isolation; (ii) a legal system reliant on executive and judicial authority administered through civil servants preferring to maintain the status quo; (iii) poor quality and coverage of institutions responsible for the provision of basic services; (iv) social practices that preclude women's participation in economic life; and (v) lack of effective institutions for skill training to enable the labor force to shift from low- to high-productivity sectors. These factors substantially mirror those detailed for the rural areas in the Government's Poverty Reduction Strategy.²

B. Analysis of Key Problems and Opportunities

4. FATA runs in a narrow belt along the Afghanistan-Pakistan border. It consists of seven agencies³ and six bordering frontier regions,⁴ and is of immense geostrategic and political importance. Acceding to Pakistan at partition from India with the understanding that they would remain autonomous, they are characterized by cultural conservatism and adherence to tribal values and practices. Although directly administered by the federal Government, the people maintain strong kinship alliances and economic linkages with neighboring Afghanistan. The

¹ ADB. *Technical Assistance to the Islamic Republic of Pakistan for Preparing the Federally Administered Tribal Areas Rural Development Project*. Manila (TA 3984-PAK, approved on 13 November 2002, for \$750,000).

² Planning Commission, Government of Pakistan. 2003. *Poverty Reduction Strategy Paper*. Islamabad.

³ An agency is an administrative unit equivalent to a district.

⁴ FATA comprises seven agencies (Bajaur, Khyber, Kurram, Mohmand, North Waziristan, Orakzai, and South Waziristan), and the frontier regions of Bannu, D. I. Khan, Kohat, Lakki, Peshawar, and Tank.

project area consists of the three northern FATA agencies of Bajaur, Khyber, and Mohmand. These have almost half (46%) of the estimated population of FATA and half of the cultivated area (49%), within slightly less than one quarter of the land area. About 70% of the land is not suitable for farming; much of it is dry and rocky. About 20% of Bajaur's farmed area has some irrigation, but 4% or less of the farmed area of Khyber and Mohmand. With the exception of the larger towns and villages of Khyber Agency, which borders Peshawar and has significant trading activity across the Khyber Pass, the population of the project area is rural, distributed in over 1,200 villages (Appendix 2).

5. In the project area the poorest families earn their living from small farms as sharecroppers, or through agricultural wage labor. Members of family groups work at many activities, including agriculture and animal husbandry, firewood collection, local wage or craftwork, and small enterprises like tailoring or tending small shops. Sharecroppers are obligated to provide most of their own and their family's labor to agricultural production on the land allocated to them, but under certain conditions they undertake wage labor. Women contribute a significant portion of the agricultural labor force through their involvement in a broad range of agricultural activities, but their contribution is not officially recognized. Most individual residents do not participate in decisions regarding development activities and community needs are not necessarily reflected in decisions. Few linkages are available to the outside world, and very few organizations or networks are available by which individuals or communities can seek and gain alternative ideas, or express their needs. The persistence of patriarchal and conservative societal values and related gender-discriminatory practices affect women's access to basic social services and productive resources in the project area. Women have virtually no chance to form networks or support organizations, or become part of community self-help groups; and are not included in land and water resource decision-making processes. Furthermore 5–7% of households are headed by women, mostly widows; these households are among the poorest.

6. The Agricultural Census (2000) reports that only about 30% of the land is in "farm area," a broad classification of land under ownership and use, mostly under rain-fed conditions. The category includes forests, but does not entirely account for rangelands. Individual ownership of agricultural land is recognized, while the range and forests are communal. Communal land (*shamilat*) consists of grasses, shrubs, and scattered trees managed by the community for animal grazing, fuelwood collection, timber harvesting, and other nonwood forest products and services. The Pakistan Forest Act 1927 and other forestry rules and regulations do not extend to FATA.

7. FATA's natural capital has degraded over recent years. On both private agricultural and communal rangelands, the degradation process is obvious, with low agricultural productivity, loss of vegetation, accelerated sheet and gully erosion, and low moisture retention capacity. The lack of water creates a dangerous positive feedback cycle as vegetation cover is removed, resulting in low water absorption and retention capacity, and inability to support vegetation. In certain areas, due to the poor productivity of land, local residents and desperate Afghan refugees have cultivated marginal lands, with a resultant further loss of fertility.

8. Only a limited development effort has been devoted to FATA over many years, as evidenced by a declining rate of growth of real per capita public expenditure since the mid-1990s, a situation that appears to have changed, with major increases in the 2003–2004 and 2004–2005 budget cycles. Infrastructure, particularly blacktopped roads, has improved in FATA over the last 2 years, primarily as a result of military activities in the region. However, a significant part of FATA remains devoid of adequate road access. Drinking water sourced from within the villages is available to 60–70% of households, but the volume and quality are not high.

About a third of these households have water within their house compounds—either piped or by well. Irrigation water is much sought after and creates an income surplus for those with access; but irrigation systems are not efficient, the practices are wasteful, and the water table continues to subside, either as a result of drought or because of existing tubewells overexploiting the aquifer. The lack of communication networks, schools, and health facilities reflects the local decision-making process in which the balance of interest among kinship groups, factional rivalries, and political groupings determines investment.

9. In Pakistan overall, during the 1990s to the present, the Asian Development Bank (ADB) and other funding agencies have had varied and extensive involvement in agriculture and rural development. These interventions (Appendix 3) aimed at enhancing agricultural productivity, promoting market-oriented policy reforms, strengthening the institutional framework, and developing resource-scarce areas of the country. Experience with this assistance indicates that, in general, project impact is reduced when inadequate focus is placed on consultation with beneficiaries, ownership, flexibility in project design, sequencing and prioritization, capacity, dysfunctional systems of the project implementing agencies, and postproject operation and maintenance (O&M). Some projects experienced considerable delays and revisions in design and scope due to (i) limited availability and untimely release of local funds; (ii) late starts and protracted implementation delays due to political disruption and security problems; and (iii) design deficiencies arising from lack of information or inadequate attention to the legal, political, institutional, and sociocultural environment. Lessons learned also indicate that to have an impact, rural development projects should be implemented using a phased approach, participatory impact assessments should be carried out from time to time, and the designed monitoring and evaluation systems should be simple and not beyond the comprehension of project implementation entities. Lastly, ownership of the development activities and their O&M by the communities is essential for sustainability. In light of these lessons, the Project ensures (i) fuller participation of beneficiaries in project design and implementation leading to greater ownership, (ii) a process-based approach, (iii) localized implementation arrangements with capacity support to government and community groups for implementation and maintenance, and (iv) use of robust technology.

10. The Project is in line with the Government's vision and development goals articulated in the Medium Term Development Framework and its Poverty Reduction Strategy. A key objective is to accelerate gross domestic product growth, reduce unemployment, and eliminate poverty. The Government's target is to reduce absolute poverty from 30% in 2001 to 15% by 2011. ADB's country strategy is based on Pakistan's development goals and priorities for poverty reduction.⁵ It also incorporates ADB's overarching objective of poverty reduction and lessons learned from past operational experience in Pakistan. The strategy attaches importance to reviving growth in Pakistan, with a focus on interventions aimed at promoting growth in sectors or activities that have maximum poverty reduction impact, including rural development.

III. THE PROPOSED PROJECT

A. Impact and Outcome

11. The Project is to (i) improve the productive potential of participating watersheds and their associated natural resource base; (ii) strengthen the capacity of communities in the project area to participate in planning, implementation, social and environmental management, and maintenance of assets emanating from local development programs; and (iii) support the implementing departments in the project area to operate in a more socially inclusive manner

⁵ The Project first appeared in the 2002–2004 Country Strategy and Program.

within the framework of a convergent watershed development planning process. This will be accomplished by having community groups implement most of the subprojects using the Project's collaborative approach and capacity-building initiatives. The Project will target poor communities, and establish an institutional base for planning and implementing multisector activities to improve their livelihoods. The Project will operate in 18 *tehsils* (subdistricts) representing approximately 1,200 communities. The project area has a population of slightly less than 1.5 million; at least 900,000 are living below the Government's official poverty line.

B. Outputs

12. The Project includes three components: (i) integrated resource management to facilitate the sustainable increase in production from renewable natural resources; (ii) community infrastructure to improve crop production and transportation; and (iii) project planning, management, and support to strengthen agency planning, implementation, and capacity for improved service delivery to communities. Communities in the project area do not have experience with development interventions; thus the Project aims to build a broad alliance between communities and government to address long-term needs for improving farm production and incomes, reversing environmental degradation, and improving watershed management. Priority will be given to activities with immediate impacts to establish community confidence.

1. Component 1: Integrated Resource Management

13. The Project will provide assistance for identifying and selecting appropriate agricultural technologies, and train farmers and extension agents in new agricultural techniques (Supplementary Appendix A). The main target group comprises small landholders and farmers, some with and some without irrigation water. Formation of a community organization, or water user association, is a prerequisite to their participation. The short-term impact of initial recommendations will be significant, since with project support, farmers can achieve yield increases in a single season with small introductions of relatively inexpensive high-yielding varieties, improved seed usage, judicious use of fertilizer, and adoption of better crop management practices.⁶

14. Farming systems in the project area are rain-fed (*barani*), subsistence production, or irrigated production that produces a marketable surplus. The rain-fed system is low input, low output, high risk, and dependant on infrequent and unreliable rainfall. Irrigated farming is more stable and productive of food grains, providing potential cash alternatives such as vegetable raising or fruit production. Livestock production is integral to both systems, with crop residue providing a major source of animal feed, especially for milk production, which is important for household consumption or sale. Where irrigation is available, the potential for filling a seasonal niche in vegetable production is good. Fodder crops are important for livestock production, while crop residues form a large part of livestock feed, converting agricultural leavings into milk, meat, and marketable savings. Adequate fodder is a concern of all farmers, especially those with no irrigation.

⁶ The Project will build on positive experiences, including those of the development programs implemented by the Narcotics Affairs Section of the Government of the United States. These have demonstrated farmer acceptance of high-yielding varieties.

a. Farming Systems and Crop Production

15. The subcomponent includes (i) improved seed technology and farming demonstrations, (ii) training of trainers and farmer field training in integrated crop management, (iii) adaptive research trials, and (iv) varietal screening of specific seeds. The existing and tested model of integrated crop management through farmer field schools will be followed. Working through community organizations, on-farm adaptive trials on farmer's fields for key crops will improve productivity. Seed block demonstrations for wheat and maize varieties through "terms of partnership" between farmer groups and the relevant agency will serve as testing areas and demonstration schools for farmers. Adaptive research trials are the basis for farmers to verify and accept appropriate technologies. Good varieties for local testing are available in North-West Frontier Province (NWFP) for wheat, barley, maize, sugarcane, rice, and okra (*bhindi*). Screening onion and tomato varieties on farmers' fields will create a valuable synergy between research and practice, where the optimal varieties for local conditions are unknown. Line department capabilities in these extension techniques will be strengthened through training and experience.

b. Livestock and Fodder Development

16. Livestock production is an integral part of the farming system for most households in the project area, whether owners, tenants, or the landless. Livestock are closely integrated with the existing farming systems since livestock depend on crop residues. Women contribute significantly to livestock management, but their skills and knowledge are traditional and limited. Village knowledge of animal nutrition and health practices is minimal, with virtually no links to formal sources of information about disease, medicines, or developments in veterinary services. Most of these health problems are preventable, and could be treated at the village through timely vaccination and deworming. The Department of Livestock and Dairy Development faces severe constraints in providing appropriate animal health services.⁷ Subsidized vaccination, artificial insemination, and feed analysis are the only public support to producers and even these are limited by inadequate budgets. Few local staff are actually working in the more distant areas, thus local residents need to be trained as village veterinary health workers.⁸

17. Accordingly, the subcomponent will focus on providing community training and knowledge transfer on animal nutrition and animal husbandry practices through (i) analysis, planning, and capacity building for line department staff; (ii) improved fodder and forage production; and (iii) training of village animal husbandry workers, including women. Increasing per animal productivity through better nutrition lowers the need for more animals in herds or households, reduces adverse environmental impacts, and provides scope for reversing the rangeland degradation process. Nutrition activities will increase available fodder and improve forage production. Straw enrichment and fodder preservation techniques such as hay and silage making will enhance year-round availability of feed. Fodder as a cash crop will be encouraged. High-quality forage at strategic points, and using off-season feed from otherwise unused lands will reduce the burden on overgrazed ranges.

⁷ Constraints include (i) a restricted operating budget, (ii) limited access to project areas due to lack of transport, (iii) lack of vaccines and medicines, (iv) difficulty in obtaining timely laboratory backup, (v) lack of quantitative knowledge of the patterns of occurrence of diseases and their economic importance, (vi) lack of appropriate animal health delivery models specifically tailored to existing farming and grazing systems, and (vii) lack of a broad-based extension program for dairy production.

⁸ The combined number of officers and veterinary assistants to the livestock head count are about 1 to 6,100 in Mohmand, 1 to 7,300 in Bajaur, and 1 to 15,600 in Khyber. These numbers overwhelm any realistic effort to provide direct veterinary assistance through the government agency.

c. Community Forestry and Range Management

18. The subcomponent aims to (i) integrate farm forestry activities within the existing farming system; (ii) rehabilitate and develop denuded community lands through improved vegetative cover; (iii) introduce the participatory and multiple use concept of forest management in existing scrub forests to diversify both wood and nonwood forest products and services; and (iv) build the technical, social, institutional, and entrepreneurial capacity of small farmers of the project area, including women, in plant nursery operations, tree planting, forest management, and controlled grazing.

19. Farm forestry activities include seedling production, tree planting, management, and tree wood utilization concentrated on fast-growing, drought-resistant trees. Private (home-based) nurseries will provide the community with preferred forest species for planting on farmland, and will be supported by technical and market information. Field nurseries will provide income opportunities for women and families who manage them. Trees will be mainly forest varieties, but growers will be free to raise fruit and ornamental plants, as well as fodder trees for livestock, depending on the need. About 900 home-based and 200 field nurseries will produce sufficient seedlings for farm and community forestry, and provide income for 3,000 direct and indirect beneficiaries. Benefits to the water table and reforestation will have local and regional impact. New plantations will be established on community land under terms of partnership with community organizations that define planning, implementation, and monitoring responsibilities. Communities will define and agree on the distribution of benefits. The Department of Forestry will raise plantations on a pilot basis; community groups can then choose to adopt them on a larger scale. Plantations will fulfill subsistence needs, and will generate additional income, while the trees will increasingly provide local employment in wood-related businesses. The Forestry Department will provide communities with technical support in cleaning, pruning, thinning, and information on when to harvest and where to find markets. This relationship forms the basis for participatory management plans for existing natural forests and established plantations.

20. Inadequate community management of the common lands leads to meager forage availability, diminished animal health, and reduced livestock productivity. Deferred and rotational grazing systems offer simple management methods. Controlled grazing on 200 to 300 hectare (ha) plots managed as part of a village development plan encourages natural regeneration of natural grasses and forbs. In appropriate areas, controlled grazing will include water harvesting through contour trenches, contour ditches, check dams,⁹ and stock-water ponds. A training needs assessment of community and institutional requirements for carrying out these activities will be conducted early in project implementation utilizing capabilities present within NWFP.

2. Component 2: Community Infrastructure

21. Infrastructure investments will remove critical infrastructure obstacles to service delivery and productivity through new construction and improvement of drinking water supply, small-scale irrigation and water storage structures, and link and access roads. Appendix 4 lists infrastructure selection criteria, and a more detailed description of the component is available in Supplementary Appendix B.

⁹ A check dam is a small dam constructed across a drainage channel to lower the speed of concentrated flows and thereby facilitate infiltration to groundwater.

a. Water Resource Assessment and Management Plan

22. Water resources and their development and sustainable management are integral to improving the well-being of FATA residents. Due to their importance and the substantial role played by water-related interventions, this subcomponent will include a ground- and surface-water assessment and development of a management plan as part of the first year activities. The water assessment and management plan will evaluate the current status of surface- and groundwater in the three project agencies to determine safe yields for groundwater and exploitable surface runoff to identify areas for wells and small water developments. The assessment will identify suitable sites for larger interventions such as ponds and small storages, flood control works, and gravity (diversion or small storage) irrigation systems. It will provide technical expertise and work with relevant line agencies to develop a surface- and groundwater monitoring system along with a development and management framework and plan.

b. Drinking Water Supply Schemes

23. Provision of drinking water supplies is a priority intervention throughout the project area. Most villages located in the foothills will benefit from spring-fed gravity schemes; plains areas will largely rely on pumped schemes based on dug wells, hand pumps, and a limited number of tubewells where groundwater extraction is sustainable. Field surveys in all areas show that women and older female children typically spend several hours every day carrying water from far-off springs or streams, which are usually open to contamination. The Project will construct around 212 spring-fed, gravity-flow systems, each providing an average of 60 liters per capita. This effort will ensure a supply of clean drinking water through a system of community tanks or stand posts and help alleviate the severe problems faced by the relatively remote settlements. All schemes will be identified through a participatory process with villagers required to provide unskilled labor, implementation management, and O&M after completion. The actual size and number of various community-managed schemes will be determined in consultation with village organizations.

24. Around 624 dug-well schemes are proposed, particularly in areas where the groundwater table is high and stable. These typically are multipurpose drinking water and irrigation water sources. An average dug well provides for the drinking water needs of 10 to 20 households. Users/farmers are expected to provide up to 50% of the cost of such schemes through in-kind contributions. Tubewell-based schemes for drinking water (as well as irrigation) are feasible where the potential for springs or shallow groundwater development is generally low. The situation is particularly severe in parts of Khyber and Mohmand agencies. Because of their complexity, private contractors will carry out tubewell boring, testing, and development, as well as the construction of overhead reservoirs. The village organization will be responsible for installation of the distribution systems as well as O&M after completion. Communities' commitment to meet the energy cost of operating schemes will be a condition for eligibility. In areas without access to electricity, diesel generators will be supplied. About 31 tubewell-based water supply systems will be provided where groundwater is sustainable for their supply.

25. Hand pumps typically serve the needs of a section of a village, as discharges are generally small. Depending on the village size and hand-pump capacity, more than one scheme may be required. The Local Government and Rural Development Department will provide technical assistance (TA) during implementation as well as O&M training to selected villagers. Standards already established under the United Nations Children's Fund (UNICEF)-funded rural water supply and sanitation projects in NWFP will be followed. The relatively simple construction will allow significant involvement of the local communities who will provide labor and local

materials, and ensure maintenance and repair after completion. Around 135 hand-pump schemes are envisioned under the Project.

26. The Project includes financing of a proposed Shalman to Landi Kotal water supply scheme, which will serve the population of Landi Kotal town and other communities along the route of the pipeline in Khyber agency, including Afghan refugees. The scheme is expected to serve approximately 78,000 people by 2030. A summary description of the scheme is available in Appendix 5 and the details in Supplementary Appendix C. Financing will be contingent on successful compliance with the conditions set forth in Appendix 5 and the relevant loan assurances.

c. Small Irrigation Systems

27. Irrigation schemes in the project area operate at low efficiencies or are in disrepair. Surface and flood irrigation schemes have suffered badly due to excessive silting or damage. Diversion works with protection bunds along the banks of the local watercourses have collapsed or been washed away by floods. Repairing systems that are damaged or have incurred excessive wear and tear is largely beyond the capacity of local farmers. Existing schemes urgently need rehabilitation. The Project will improve about 72 existing and construct about 36 new irrigation structures, through cost-sharing arrangements with local communities, combined with farmers' training in construction techniques as well as O&M. Commitment to meeting O&M will be a condition for eligibility of subproject selection. Rainwater harvesting through check dams will be an important focus as the bulk of the surface rainfall runoff is untapped due to limited knowledge or low capacity of local villagers. Approximately 130 check dams are proposed. Where feasible, the Project plans to construct about 80 small ponds and about 12 delayed action dams of a maximum height of 6 meters (m) to create storage for irrigation, improve groundwater recharge, as well as ensure water supplies for livestock and other nondrinking needs of the local communities.

28. In some areas on gravity irrigation schemes, water losses due to seepage, subsurface percolation, and evaporation are high. Conveyance efficiencies are also low because of poor channel alignment and inadequate slopes of field-level structures. Where appropriate the lining of the channels and other associated hydraulic structures will be supported to improve conveyance efficiencies. Several streams have perennial flow that will be harnessed through provision of pumping systems or new and improved diversion structures, subject to technical and financial feasibility. Flood diversion schemes will increase farmers' ability to protect against excessive runoff, improve water management, and irrigate a larger command area through efficient on-farm water management by the respective communities. The Project will focus on soil conservation by constructing protection bunds along the affected land and reclaiming eroded land. Accordingly, the Project will finance the construction of schemes with sufficient groundwater potential, and a large number of resident beneficiaries.

d. Road Construction and Improvement

29. A very limited program of works on arterial roads will address problems of accessibility between adjacent valleys and villages, which affect significant population clusters. Of the total road network, nearly 40% are shingled tracks while the rest are all-weather blacktop. The condition of the smaller rural roads linking villages to arterial roads is generally poor and resources for their maintenance and repair inadequate. The subcomponent will benefit the relatively remote clusters of villages that are currently inaccessible, through the construction of low-cost link roads. This requires community participation in identification of alignment, provision of land, community supervision during construction, and assured maintenance and repair after

completion. Training will be provided to villagers and village organizations on maintenance, repair, and management of roads. The second category of road work will include improving and upgrading existing roads that have fallen into disrepair or are in need of priority works. A total of 120 kilometers (km) of new low-cost link roads and 72 km of improvement/upgrading works are proposed. All roads identified for project support will be selected in accordance with agreed selection criteria (Appendix 4).

3. Component 3: Project Planning, Management, and Support

30. Project planning, management, and other support services will be provided to facilitate timely implementation, including (i) engaging consultants and other specialist contract services; (ii) procuring vehicles and equipment; and (iii) establishing accounting, monitoring, and reporting systems. A key feature will be the establishment of a management information system (MIS) for regular monitoring of physical and financial progress and development impacts of the project. The MIS will link the project management unit (PMU) and project implementation units (PIUs) with the project executing and implementing agencies.

C. Special Features

1. Advisory Technical Assistance

31. Separate capacity-building advisory TA¹⁰ is currently being provided to line departments¹¹ working in FATA responsible for project implementation. This includes agency-based staff and their provincial head offices. Key focus areas of the TA include (i) strengthening project management, planning, monitoring, and evaluation; (ii) strengthening financial management systems and procedures covering planning, budgeting, cash-flow management, and systems and procedures to monitor financial and implementation performance; (iii) enhancing information, communication, and technology systems; and (iv) familiarizing the target group with ADB policies, procedures, and guidelines. The TA will also undertake community-based organizational strengthening and prepare detailed implementation manuals. Training programs covering these focus areas will be completed before substantive activities of the Project commence.

2. Land Acquisition and Resettlement

32. The Land Acquisition Act of 1894 (as amended) is the core legislation used in Pakistan for acquiring private lands for a public purpose. But this act, as with most other laws of Pakistan, does not apply to FATA. Local needs for land acquisition are addressed through the system of land rights and distribution. In the absence of a formal legal policy for land acquisition and resettlement, a project-specific set of resettlement principles consistent with ADB policy requirements has been adopted for the Project. The level of land acquisition required is expected to vary from significant to nonsignificant depending on individual project interventions. A summary of land acquisition and resettlement is provided in Appendix 6 and the resettlement framework is in Supplementary Appendix D.

¹⁰ ADB. 2003. *Technical Assistance to the Islamic Republic of Pakistan for Capacity Building for Rural Development of the Federally Administered Tribal Areas*. Manila.

¹¹ The line departments targeted for support include planning and development, finance, livestock and dairy development, agriculture extension, local government and rural development, forestry, and works and services.

D. Project Investment Plan

33. The estimated project cost is \$60.4 million equivalent, inclusive of land acquisition and resettlement compensation, physical and price contingencies, taxes and duties, and interest and service charges during construction. The foreign exchange cost is estimated at \$11.4 million, or about 19% of the total cost. The local currency cost is estimated at \$49 million equivalent, or about 81% of the total cost. The local currency costs include an estimated \$1.8 million equivalent for taxes and duties to be paid by the Government. The project cost estimate summarized in Table 1 and Appendix 7 should be regarded as indicative only. Detailed project cost tables are available in Supplementary Appendix E.

Table 1: Project Investment Plan^a
(\$ million)

Item	Foreign Exchange	Local Currency ^e	Total Cost
A. Base Cost^b			
1. Integrated Resource Management	1.2	9.8	11.0
2. Community Infrastructure	6.5	26.6	33.1
3. Project Management	1.5	6.8	8.3
Subtotal (A)	9.2	43.2	52.4
B. Contingencies			
1. Physical Contingencies ^c	0.7	3.0	3.7
2. Price Contingencies ^d	0.6	2.8	3.4
Subtotal (B)	1.3	5.8	7.1
C. Interest Charge during Implementation	0.9	0.0	0.9
Total	11.4	49.0	60.4

^a Since the project, including its cost estimates, was prepared and agreed with the Government prior to the issuance of the staff instructions on *Cost Sharing and Eligibility of Expenditures for ADB Financing*, the RRP distinguishes between foreign and local cost.

^b In September 2005 prices.

^c Physical contingency is 10% for civil works; and 5% for field research and development, training, surveys and studies, and overheads.

^d Estimated at price escalation factors of 6.0% in year 1 and 5.0% per annum in subsequent years for local costs and 2.8% in year 1 and 1.9% per annum in subsequent years for foreign costs.

^e Includes duties and taxes of about \$1.8 million.

Source: Asian Development Bank estimates.

E. Financing Plan

34. The Government has requested a loan of \$42.0 million from ADB's Special Funds resources to help finance the Project. The loan will have a 32-year term, including a grace period of 8 years; an interest rate of 1% per annum during the grace period and 1.5% per annum thereafter; and such other terms and conditions set forth in the Loan Agreement. The loan will finance 70% of the total project cost: \$11.4 million of the foreign exchange cost (100%) and \$30.6 million equivalent of the local currency cost (70%). The Government will provide \$15.4 million equivalent, or 25% of the project cost, including land acquisition and resettlement compensation of \$2.7 million. The beneficiaries will contribute \$3.0 million equivalent, or 5% of the project cost through their labor inputs.¹² The financing plan is summarized in Table 2.

¹² The Project will pay unskilled laborers 60% of the cash value of labor inputs.

Table 2: Financing Plan^a
(\$ million)

Source	Foreign Exchange	Local Currency	Total Cost	Percent
Asian Development Bank	11.4	30.6	42.0	70
Government ^b	0	15.4	15.4	25
Beneficiaries	0	3.0	3.0	5
Total	11.4	49.0	60.4	100

^a The allocation of loan proceeds in the loan agreement are presented in the special drawing rights (SDR) equivalent of US dollars, with reference only to total expenditure in accordance with the ADB Board paper: ADB. 2005. *Cost Sharing and Eligibility of Expenditure for ADB Financing: A New Approach*. Manila.

^b Includes land acquisition and resettlement compensation of about \$2.7 million.

Source: Asian Development Bank estimates.

F. Implementation Arrangements

1. Project Management

a. Executing and Implementing Agencies

35. The Ministry of States and Frontier Regions, as the Executing Agency (EA), is responsible for (i) overall coordination and management of the Project, including coordination with other Government ministries and agencies, and other stakeholders at the national level; (ii) ensuring timely budgetary allocations to the PMU; and (iii) ensuring necessary national approvals are obtained in a timely manner for effective project implementation. The Secretary will appoint a staff person to manage the EA's role in the Project. The Governor's Secretariat (FATA), the Implementing Agency (IA), is responsible for day-to-day coordination of project activities among the line departments and for supervision of the overall project.

b. Management and Implementation Units

36. The Project will follow a decentralized implementation arrangement to facilitate participation of communities. Project management will be at two levels: (i) at Peshawar interfacing with the Governor's Secretariat (FATA), other government agencies, private and civil society through a PMU; and (ii) at the agency level through PIUs in Bajaur, Khyber, and Mohmand. Planning and operational project management will be at the agency level, where activities will be identified, endorsed, and implemented through government line departments, outsourced consultants, and contracted experts. The Peshawar-based PMU headed by a project director, will (i) coordinate project-related issues with the EA, IA, agencies, and private and civil society; (ii) consolidate work plans prepared by the PIUs and facilitate approval by the project steering committee (PSC); (iii) award contracts exceeding the amount equivalent to \$100,000; (iv) recruit consultants; (v) perform monitoring and evaluation; (vi) supervise consultants and contractors; and (vii) manage project finances.

37. A PIU will be established in each of the three agencies, headed by a project manager. Each PIU will (i) coordinate project operational issues with the line departments in the respective agency; (ii) prepare work plans under the project, obtain endorsement of work plans by the agency project board (APB) and implement the same; (iii) award contracts up to the equivalent of \$100,000; (iv) assist the PMU in supervision of consultants and contractors; (v) assist the PMU in monitoring and evaluation project activities; and (vi) manage finances related to the project in the respective agency. The project managers will report to the project director.

38. All project staff, including the project director and three project managers, will be hired on a contract basis through an open and competitive process. The qualifications, experience, expertise and terms of reference of the project director will be subject to ADB approval. The PMU in Peshawar will use either existing government facilities or rent offices during project implementation. The Project will construct offices for each PIU.¹³ In addition, women's hostels will be constructed in Bajaur and Mohmand agencies. For security reasons, both office and hostel facilities will be constructed inside the political agent compounds on land provided by the political agency. Until completion of construction, the agencies will provide temporary working and sleeping accommodation for both staff and consultants.

c. Steering Committee

39. A PSC will be established to (i) provide policy guidance and interpretations in implementation of the project; (ii) approve the consolidated annual work plans for the three agencies; (iii) review on semiannual basis, the progress of the project including performance of the project director and other PMU staff; (iv) coordinate and direct activities of line departments under the project; and (v) recommend issues for consideration of the project review board (PRB). The PSC will be chaired by the secretary, Governor's Secretariat (FATA) and include as members (i) a representative of the EA; (ii) representatives of the line departments; (iii) the political agents;¹⁴ and (iv) the project director will serve as the member/secretary. The PSC shall meet as required but not less than four times a year.

d. Review Board

40. A PRB will be established to resolve issues of strategic importance which may affect smooth implementation of the project, take related policy decisions and review the project progress annually. The PRB will be chaired by the Governor, NWFP with the secretary of the EA as its deputy chair. Other members of the PRB will include: (i) the chief secretary, NWFP; (ii) the additional chief secretary, NWFP; (iii) the secretary, Governor's Secretariat (FATA) who shall also serve as the secretary to the PRB; (iv) a representative of the Economic Affairs Division; and (v) the project director. The PRB shall meet as required but not less than twice a year.

e. Agency Project Boards

41. An APB in each agency will be established to review and endorse annual work plans within the agency. These plans will be consistent with explicit project selection criteria. Plan development and presentation is the responsibility of the project manager. The APB will be chaired by the political agent of the respective agency, with the project manager serving as the member/secretary. Other members will include (i) representatives of the line departments at the agency level; (ii) two tribal elders; and (iii) two agency councilors. The APB will meet as required. This arrangement is consistent with a fully decentralized local government structure, anticipated for the future, at which time an elected official will supersede the political agent.

2. Component Implementation

42. No large-scale, community-based development activity is currently being undertaken in the project area. The extent to which communities and their leadership, as well as the political administration, will adapt to the Project is unknown. A strong demonstration effect through early,

¹³ In Mohmand Agency, the PIU is expected to be housed in an existing building, which will be improved by adding an additional story. In addition, water will be provided on a daily basis by tanker as no other method of regular water delivery is available.

¹⁴ Political agent refers to the head of an agency.

positive action is vital for gaining the confidence of the communities, as well as the positive cooperation of the line department staff. PIU social organizing staff will seek out areas most amenable to cooperation with the Project by using group consultations, discussions with local leaders, and participatory rural appraisal techniques to identify priority needs such as drinking water supply schemes; small link roads; rehabilitation and improvement of small-scale irrigation systems; and agricultural, livestock, and forestry programs appropriate to the season. These interventions will be identified with the assistance of line departments and technical contract staff trained in group-based extension techniques. Within the first 6 months of implementation, each PIU will provide initial work plans, specifying watershed areas and proposed priority initial subprojects.

43. Although the process of planning and implementation will require regular consultation with communities over time, some watershed areas have a high probability of accepting and working with the Project. Appendix 8 lists proposed watershed selection criteria. Two such watersheds from each agency will be identified by consensus among the political agent, line departments, and agency project manager as pilot areas for the first year of implementation, with early attention given to easily identifiable infrastructure and agricultural interventions. Based on the experience of working within six watershed areas in the first year, comprising approximately 60 villages or community groups, an additional 12 watersheds and 120 villages/communities per year will be selected for planning and implementing various activities during the second and third years respectively. Community members and project staff will track requests for assistance and ensure effective distribution of related activities within watersheds through the use of a geographic information system-based georeferenced database. Appendix 9 describes subproject development and approval procedures. Detailed implementation arrangements are available in Supplementary Appendix F.

3. Implementation Period

44. The Project will be implemented over 5 years (2006 to 11). The implementation schedule is in Appendix 10. First year activities include (i) establishing the project accounts and reporting links; (ii) contracting and implementing a baseline socioeconomic survey to establish indicators for assessing the Project's impact on poverty in participating communities; (iii) contracting and implementing a water resource assessment study; (iv) contracting and commencing an independent performance monitoring and evaluation program; (v) establishing three PIUs, and developing annual work plans and staffing schedules for each agency for the first year of project implementation; (vi) identifying two watersheds in each agency for integrated planning and commencement of priority project activities in some 60 poor communities in those watersheds; (vii) establishing a geographic information system database system;¹⁵ (viii) recruiting consultants and project staff; (ix) establishing a project monitoring and evaluation system; and (x) procuring requisite equipment and vehicles.

4. Procurement

45. Procurement of vehicles, machinery, office equipment, and special equipment will be undertaken in accordance with ADB's *Guidelines for Procurement*. Civil works under the proposed Shalman water supply scheme will be procured in accordance with international competitive bidding procedures. Because of the small to medium size of the remaining civil works and their scattered nature, they will be procured under local competitive bidding procedures or other arrangements with private contractors acceptable to ADB. All local contractors will be required to attend a training course covering ADB standards, procedures, and

¹⁵ Digitized data are available at the Department of Forestry.

environmental requirements; the training will be updated annually. A list of procurement activities is provided in Appendix 11.

5. Consulting Services

46. The Project will require a total of 147 person-months of consulting services comprising 21 person-months of international and 126 person-months of domestic specialized services in long- and short-term appointments through a consulting firm and individual consultants. In addition, specialized service contracts will be awarded for several project activities including (i) a baseline survey; (ii) community mobilization activities and a public information campaign; (iii) periodic independent audits of project performance; (iv) the surface- and groundwater assessment study; and (v) establishment and implementation of the project management information system. The Government will engage consulting services in accordance with ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for engaging domestic consultants. The quality-and cost-based selection procedures will be used in recruiting the consultants. A summary of consulting services is provided in Appendix 12 and detailed terms of reference in Supplementary Appendix G.

6. Anticorruption Policy

47. ADB's *Anticorruption Policy* (1998) was explained to and discussed with the Government and Executing Agency. Consistent with its commitment to good governance, accountability and transparency, ADB reserves the right to investigate, directly or through its agents, any alleged corrupt, fraudulent, collusive or coercive practices relating to the Project. To support these efforts, relevant provisions of ADB's *Anticorruption Policy* are included in the loan regulations and the bidding documents for the Project. In particular, all contracts financed by ADB in connection with the Project shall include provisions specifying the right of ADB to audit and examine the records and accounts of the EA and all contractors, suppliers, consultants and other service providers as they relate to the Project.

7. Disbursement Arrangements

48. To expedite disbursement and ensure timely execution of the Project, immediately after loan effectiveness an imprest account for the EA and four second-generation imprest accounts for the PMU and each PIU will be opened at the National Bank of Pakistan. Fund flow arrangements are further described in Supplementary Appendix F. The opening of the imprest accounts will be subject to the appointment of qualified accounting staff and the establishment of accounting systems and internal controls acceptable to ADB by the PMU and the three PIUs. The imprest account will have a ceiling equivalent to an estimated 6-month expenditure or 10% of the loan amount, whichever is less. The second-generation imprest account of the PMU will have a ceiling of \$150,000 and those of the PIUs will have a ceiling of \$100,000. All accounts will be managed in accordance with ADB's *Loan Disbursement Handbook* (January 2001), and detailed arrangements agreed upon by the Government and ADB. The statement of expenditure procedure may be used to reimburse eligible expenditure and liquidate advances to the imprest account. The limit for each individual payment on a statement of expenditure will not exceed \$50,000.

8. Accounting, Auditing, and Reporting

49. After consultation with line departments and formal endorsement by the APBs, the PIUs will forward annual work plans to the PMU for onward submission and approval by the PSC. Work plans will detail activities scheduled for the forthcoming year, including timing, material and

financial inputs needed, and outputs expected. The PIUs will provide the PMU with brief quarterly progress reports detailing the physical and financial progress of activities against work-plan targets. The PIUs will also adopt a transparent process, acceptable to ADB, for disseminating information on subproject expenditure. The project director will provide the Government and ADB with consolidated quarterly progress reports and comprehensive year-end annual reports which will contain information that will feed into the project MIS and by extension, the project performance management system (PPMS). The project director will also provide on a semi-annual basis, a summary of findings of the independent performance reviews and actions proposed in response to these findings. Within 3 months of project completion, a project completion report will be submitted to ADB.

50. The PMU and PIUs will maintain separate accounts and financial statements for funds provided to the Project in accordance with international accounting standards. An independent external auditor acceptable to ADB will audit the accounts annually. The imprest accounts and statement of expenditure procedure will be audited as part of the regular audit of the Project's account and financial statements. The audited project accounts will be forwarded to ADB not later than 6 months after the close of each fiscal year.

9. Project Performance Monitoring and Evaluation

51. To ensure that project activities and facilities are managed efficiently and that target groups receive the intended benefits, a participatory PPMS, modeled on the project MIS and consistent with ADB's monitoring system, will be used by the PMU and PIUs. An initial survey to establish the overall monitoring system will be conducted during the initial 6 months of the Project. The emphasis will be on impact monitoring and the key indicators will be (i) incorporated into the Project's regular monitoring process; (ii) reassessed at each comprehensive review and at project completion; (iii) used to compare with district indicators and programs in neighboring NWFP; and (iv) used to measure the Project's contribution to achievement of the Medium Term Development Framework targets, the Millennium Development Goals, and other relevant targets.

10. Project Review

52. ADB will carry out semiannual reviews of the project. Initial reviews will (i) determine whether all the proposed implementation arrangements and schedules are appropriate, (ii) assess the level of cooperation from agency political administrations in meeting project objectives, (iii) review progress on infrastructure activities, (iv) review the integrated resource development activities in terms of their distribution and adoption by beneficiaries, and (v) assess progress of participation by women. A midterm review will be jointly undertaken by ADB and the Government at the end of 30 months to assess physical and financial progress of the Project, implementation procedures, procurement performance, monitoring activities, PMU/PIU effectiveness, and performance of consultants.

IV. PROJECT BENEFITS, IMPACTS, ASSUMPTIONS, AND RISKS

A. Project Benefits

53. The Project will result in several quantifiable and nonquantifiable effects. Quantifiable benefits include increased crop, livestock, and forest production, as well as time savings in household water supply provision, and time and cartage cost savings from road transport. Nonquantified benefits include improved environmental conditions; better nutrition and food security; and improved access to medical, educational, and other services outside of the rural communities targeted by the Project.

B. Financial and Economic Analyses

54. Financial and economic analyses were carried out for the Project as a whole and for six subcomponents. The financial analysis was based on farm budgets to assess the impact of the Project on farm productivity and returns to the farmers. Six model budgets were prepared. The overall estimated economic internal rate of return (EIRR) for the Project is about 19.1%. Among the natural resource management subcomponents, the estimated EIRR for the farming systems and crop production subcomponent is 37.3% followed by 17.8% for the livestock and fodder production component. The EIRR for community forestry and range management is estimated as 17.5%. Among the community infrastructure interventions, the estimated EIRR for community drinking water supply schemes is 31.0%, rural link roads 16.5%, and irrigation works 14.6%. Sensitivity analysis was carried out for all of the subprojects to examine a range of risks including adverse changes in investment cost, output prices, yields, implementation completion, and project life. Overall, the results are fairly robust. The methodology and details of the financial and economic analyses are provided in Appendix 13 and Supplementary Appendix H.

55. For most of the irrigation schemes and drinking water supply schemes the responsibility for O&M will lie with the beneficiary households. For the drinking water schemes, O&M costs can be expected to be about 10% of the value of the annual household benefit. For irrigation schemes, average O&M costs will be about 12.5% of the financial benefits. In both cases, beneficiary communities should have sufficient incentives to ensure their schemes continue to function well.

C. Household and Poverty Reduction Benefits

56. Project benefits will accrue initially to those willing to participate in community organizations. Benefits from training programs or infrastructure and improved farming and livestock rearing practices, and additional income through rehabilitation of the ecosystem will accrue generally to community members. Access to organizations and participation within them by all interested individuals will be a unifying theme for community mobilization. Organizations will be established based on socially acceptable norms, with men and women's groups (Appendix 14) separately addressing issues of mutual interest in a culturally appropriate manner. As a result of the Project, beneficiaries will obtain access to opportunities for improving their livelihoods, broaden networks of knowledge and contacts with service providers, and learn more productive farming techniques with all the community sharing access to improved infrastructure. The Summary Poverty Reduction and Social Strategy is in Appendix 15.

57. The farming system and crop management subcomponent will increase production for about 37,500 beneficiary households, or 337,500 people (assuming an average holding of 1.4 ha per household and an average household size of 9). After a full phasing in of benefits, annual incremental farm income should rise by about PRs6,000 per household. Most benefits will go to landholders—an estimated 57% of whom are poor. Incremental labor days for crop production are estimated at 585,000 annually and at least a portion of this will go to hired labor. The livestock and fodder management subcomponent will affect 414,000 people in the targeted households. Through increased milk and live weight, annual incremental household income can be expected to be PRs1,600. The poor will have access to these benefits, though they will probably concentrate on smaller animals.

58. Irrigation development should benefit 4,750 households (42,750 people). Per household incremental income will be about PRs54,900 per household. The poor's share will be similar to that noted in the farming system subcomponent. Increased incremental labor days are expected

to be 919,500 days per year—some of which will increase employment for hired labor. Drinking water supply schemes should affect about 160,000 people. The time saving and decreased medical cost benefits are valued at about PR\$8,400 per household per year. The road and forestry subcomponents will benefit the communities at large, including the poor. The forestry program will increase employment by an average of 123,500 person-days per year.

D. Environmental Impacts

59. The natural environment of the project area has undergone severe degradation due to intensified use of the range, forest products, and water resources. Existing institutional arrangements are incapable of reversing this process of degradation. The Project aims to introduce an integrated watershed management approach combining agriculture, irrigation, range, and forestry interventions within defined watershed areas. This approach will help reduce pressure on the currently degraded resource base, increase water availability in watershed areas, and control the erosion damage resulting from runoff. Awareness of the environmental benefits from integrated planning and management of watersheds will be disseminated through community organizations, training for community leaders, and capacity building for line department staff. Current infrastructure construction practices, especially for roads, do not consider the environmental damages caused by such construction. However the Project will introduce planning, design, and construction practices with suitable environmental mitigation measures based on appropriate environmental assessment studies (as described in the environmental assessment and review procedures framework in Supplementary Appendix I). The awareness, and knowledge and technology transfer from undertaking environmentally sound infrastructure construction will set a valuable precedent among communities and line departments to guide future practice. Overall, the Project is expected to have a positive impact on the environment. The summary initial environmental examination report is in Supplementary Appendix J, and initial environmental examination in Supplementary Appendix K.

E. Project Assumptions and Risks

60. A defining feature of FATA is the continuing importance of tribal elders and leaders, the *maliks*. Operating without their agreement, support, and protection is difficult, if not impossible. Political agents play a key role in providing introductions to local leaders, and thereby ensuring access, particularly to formerly inaccessible areas. The maliks either own or control a large part of the economic resources and government investments in their areas. In such circumstances, significant portions of the local population are excluded from decision-making or sharing in the benefits of development. Excluding the better-off members of communities from receiving benefits is neither possible, nor desirable, but opportunities must be distributed more equitably. Within the existing “*malik*” system, the poorer residents of communities and especially women do not normally get a chance to improve their material well-being.

61. Achieving a more equitable distribution of project benefits requires that agency line departments diligently adhere to a process of regular consultation with beneficiaries, with the consent and support of the political agents and the local *jirgas* (a council of tribal elders). Consistent application of such a process will reinforce the message of community participation. If accomplished from the earliest stage as part of the project design, this need not be a source of conflict or misunderstanding within tribal groups. Community facilitation staff will be responsible for establishing dialogue with stakeholders, and for continued monitoring of community involvement during implementation. The most effective technique for guaranteeing wide dissemination of benefits is to maintain transparent processes for activity selection, expenditure reporting, and O&M of the various subprojects.

62. The quality of project management and administration, and the ability of the Governor's Secretariat (FATA) to operate smoothly in FATA, depend on strengthening the Secretariat and agency capacities to deal with large and complex development programs. The Project will provide assistance in strengthening implementation and financial management capabilities of these agencies through establishment of the PMU and three PIUs. A capacity-building TA (para. 31) is preparing the Governor's Secretariat and agency line departments to undertake the Project.

63. Although the economic analysis of the Project indicates a fair degree of robustness, achieving the expected project impacts involves some risks. One such risk is whether beneficiary communities will provide O&M for small infrastructure projects like drinking water schemes and irrigation systems, as well as community rangelands and forests. In the past, government-financed schemes have not attracted community participation in O&M, and the requirement for beneficiaries to own and manage project benefits will be novel. The Project is designed to minimize this risk by emphasizing community mobilization during selection, construction, and O&M. This responsibility will be clearly explained, and community consensus will be obtained prior to the commencement of activities, since communities are more likely to collaborate on O&M of schemes that they identify, and that address their expressed needs. With subprojects that are solely the responsibility of the direct beneficiaries (i.e., drinking water tubewells or shallow dug wells, small irrigation schemes, and ponds), the Project will also ease the burden on beneficiaries of undertaking full O&M responsibility from the outset, by initially supporting O&M on a declining percentage basis, with the beneficiaries assuming the full cost by year 5. These arrangements are more explicitly explained in Appendix 16. Line departments will undertake O&M for larger scale infrastructure. Additionally, the Project includes institutional strengthening of extension line agencies as well as training of community members.

64. The Project will rely on contractors to do much of the construction work for roads, irrigation, and water supply. Since outside contractors can receive active opposition from communities, agencies typically use predetermined contractors for small-scale infrastructure. While they have access to the area, their capabilities are not strong; even the best of such pre-selected contractors lack equipment and appropriate technical skills. To reduce the risk of poor quality construction, the Project will adopt a process of open, competitive tendering. Contractors from outside the project area will be encouraged to make arrangements to use local subcontractors where and as appropriate both to gain entry in areas and find local labor.

V. ASSURANCES

A. Specific Assurances

65. In addition to the standard assurances, the Government has given the following assurances, which are incorporated in the legal documents:

- (i) The Government will allocate and make available, in a timely manner, requisite counterpart funds from its budget for each fiscal year for the smooth implementation of the Project.
- (ii) The Government will establish, within 1 month of loan effectiveness, the project steering committee and the project review board, and within 3 months of effectiveness, an agency project board in Bajaur, Khyber, and Mohmand agencies.
- (iii) Within 3 months of loan effectiveness, the Government will (i) establish three agency-based, fully staffed, and operational PIUs; (ii) make the PMU fully staffed

- and operational; and (iii) cause the PMU and the PIUs to establish their accounting and financial management systems, acceptable to ADB.
- (iv) Within 6 months of loan effectiveness, the PMU will undertake a community mobilization facilitation process, acceptable to ADB.
 - (v) Within 9 months of loan effectiveness, the Government will cause the PMU to establish participatory PPMS, acceptable to ADB, for monitoring project impact.
 - (vi) The Government will provide adequate security necessary for the safe mobility of persons carrying out the Project to ensure timely and uninterrupted implementation of the Project.
 - (vii) To ensure maximum participation from all segments, the Government shall advertise in at least two dailies with nationwide coverage, all local contracts for goods and services.
 - (viii) To ensure continuity, efficiency, and smooth implementation of the Project, the Government agrees that requisite Government staff with qualifications, experience and expertise, acceptable to ADB will be seconded to the Project for, at least, a term of 3 years.
 - (ix) The Government will select eligible watersheds in accordance with watershed selection criteria and select and implement community infrastructure in accordance with the subproject selection criteria and subproject intervention procedures agreed with ADB.
 - (x) Prior to the completion of the facilities constructed, aligned, improved, and/or rehabilitated under the Project, the line departments concerned will prepare maintenance plans, satisfactory to ADB, for O&M of such facilities. Upon completion of the project facilities, the Government will ensure that such maintenance plans are fully implemented by the line departments concerned.
 - (xi) The Government will (a) allocate and make available or cause to be allocated and made available, in a timely manner, sufficient funds needed for each fiscal year for O&M of the project facilities; and (b) ensure that such facilities are properly operated and maintained to sustain the investments made under the Project.
 - (xii) The Government will ensure that the loan proceeds will not be used to sink tube wells in areas not sanctioned under the Water Resources Assessment and Management Plan.
 - (xiii) The Government will ensure that adequate environmental protection, safety, and mitigation measures are included in the design of the project facilities and will ensure that the project facilities are constructed, extended, upgraded, renovated, operated, and maintained in accordance with the Government's environmental laws and regulations and ADB's *Environmental Policy* and ADB's environmental guidelines as set forth in *Environmental Assessment Guidelines* (2003), as amended from time to time.
 - (xiv) The Government will ensure that no persons will be adversely affected in terms of ADB's *Policy on Involuntary Resettlement*. The Government will further ensure that land acquisition/involuntary resettlement, if any, under the Project will be undertaken in accordance with the ADB's *Policy on Involuntary Resettlement*, to the satisfaction of ADB, and in accordance with the resettlement framework, as agreed between the Government and ADB.
 - (xv) The Government confirms that no persons will be adversely affected in terms of ADB's *Policy on Indigenous People*, as amended from time to time. In the event adverse impacts on indigenous people are identified during project implementation, an indigenous peoples development plan will be prepared in accordance with ADB's *Policy on Indigenous People*.

- (xvi) The Government will ensure timely and effective implementation of the gender strategy and plan developed by the Government in consultation with ADB and will further ensure that, based on satisfactory performance, the requisite female technical staff engaged for the purposes of the Project will be regularized after completion of the Project.
- (xvii) The Government will facilitate access to public documents of immediate relevance to the Project and will ensure that all documents and information relating to the Project will be in the public domain and freely accessible to the stakeholders and other interested parties.
- (xviii) The Government confirms that customary arrangements exist between Pakistan and Afghanistan for withdrawal of water by Pakistan from the Kabul River where the river is the boundary between Pakistan and Afghanistan and that it has and will remain to have the right and ability to withdraw a minimum of approximately 0.2 cubic meter/second of water needed for the proposed Shalman water supply scheme.
- (xix) Prior to the commencement of the proposed Shalman water supply scheme, the Government will carry out (i) a detailed socioeconomic survey to identify the target beneficiaries of the proposed scheme, which will, among others, carefully, examine the willingness of the target beneficiaries to pay water charges; (ii) an environmental assessment and resettlement/land acquisition plan based on the detailed designs, to be approved by the appropriate government agencies in Pakistan and by ADB; and (iii) an economic analysis of the scheme.

B. Condition for Loan Effectiveness

66. The PMU will be established and a full-time (i) project director; (ii) deputy director, finance and administration; and (iii) deputy director, project planning and monitoring will be appointed in accordance with the terms of reference agreed with ADB.

C. Condition of Withdrawals from Loan Account

67. No withdrawals will be made from the loan account until the PMU and PIUs have established their accounting and financial management systems, acceptable to ADB.

VI. RECOMMENDATION

68. I am satisfied that the proposed loan would comply with the Articles of Agreement of ADB and recommend that the Board approve the loan in various currencies equivalent to Special Drawing Rights 29,181,000 to the Islamic Republic of Pakistan for the Federally Administered Tribal Areas Rural Development Project from ADB's Special Funds resources with an interest charge at the rate of 1.0% per annum during the grace period and 1.5% per annum thereafter; a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft Loan Agreement presented to the Board.

Haruhiko Kuroda
President

3 April 2006

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
Impact Reduce poverty in the project area (Bajaur, Khyber, and Mohmand agencies).	Annual incremental farm income of beneficiary household increased by about PRs6,000 after project completion Household livestock-related income from livestock increased by about PRs1,600 annually after project completion	Project impact assessment surveys Poverty assessments undertaken by the Government after the project	
Outcome Improve the productive potential of selected watersheds and their associated natural resource base.	Crop production increased by 50% on 52,500 hectares (ha) of rain-fed (barani) lands after full phasing in of project Availability of wood and nonwood forest products increased after completion of project	Baseline and project impact monitoring surveys Project performance management system (PPMS)	Assumption Operation and maintenance (O&M) budgets are allocated Risks Drought and other natural processes do not limit production Governance environment in project area is conducive to project implementation.
Strengthen the planning, implementation, and management capacity of the target communities and implementing departments in the project area.	At least 10% of population (men and women) in each agency belong to a community organization engaged in participatory development activities during project implementation.	Results of independent performance audits Asian Development Bank review mission findings Routine project reviews	Assumption Residents recognize their role in O&M of small infrastructure
Support the implementing departments in the project areas to operate in a more socially inclusive manner.	Effectiveness and responsiveness of extension service delivery by line departments improved by 20% over baseline condition, by end of the project period	Baseline and project impact monitoring surveys Quarterly progress reports	Assumption Modalities for delivery of extension services are successfully implemented and available to the target group
Outputs (by project component)			
1. Integrated resource management improved	Increase in incremental farm labor days by about 585,000 annually Forage availability on rangelands increased by 20% over baseline condition by end of the project Animal healthcare services improved through village animal health workers	Baseline and project impact monitoring surveys Agricultural department records Project completion review and post project surveys Department of Livestock and Dairy Development records	Assumptions Line departments support participatory approach and increase work in communities Line departments provide staff and recurrent budget to support project interventions

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
2. Community infrastructure improved	<p>Cropping intensity will increase by 50% on 12,000 ha of newly irrigated lands by end of project</p> <p>Savings in vehicle operating costs and travel time of at least 15% over baseline conditions by end of the project</p> <p>Time spent on water collection reduced for about 17,500 households</p>	<p>Baseline and project impact monitoring surveys</p> <p>Line department records</p> <p>Project completion review and post project surveys</p>	<p>Assumptions Site selection addresses equity and need</p> <p>Availability of water in project area</p> <p>Risks Water assessment yields negative results</p> <p>Contractors with adequate skills and experience are not available</p>
3. Project planning, management, and support strengthened	<p>Project management structure established and functional</p> <p>Project supervision and advisory structure established and functional</p> <p>Procurements carried out in a timely manner</p>	<p>Project progress reports</p> <p>Findings of review missions</p>	<p>Assumption Project director and annual development programs are employed early in project life</p> <p>Risk Personnel recruitment and procurement are not hindered by extended government procedures</p>
Activities with Milestones 1. Integrated Resource Management 1.1 Farming systems and crop production improved on 52,500 ha for about 337,000 households 1.2 Improved livestock productivity for about 46,000 households 1.3 Community forestry and range management improved on 12,350 ha 2. Community Infrastructure 2.1 Water resource assessment and management plan prepared 2.2 Drinking water supply schemes developed through: about 212 spring-fed gravity flow schemes; around 624 dug-well schemes; and around 135 hand pumps and the Landi Kotal water supply scheme 2.3 Small irrigation systems improved to service around an additional 6,500 ha 2.4 Construction of 120 kilometers (km) of new link roads and improvement of 72 km of existing roads 3. Project Management, Planning Support 3.1 Line departments, community mobilization, and project implementation unit staff operating as a team 3.2 All project activities defined within coherent areas based on community participation and common interests in watershed/sub-basin 3.3 Team building training for Project and Agency staff, identification of line department staff and for training and institution to provide it 3.4 Regular coordination and planning within watershed management plans 3.5 Project monitoring system established with initial baseline information		Inputs Asian Development Bank Civil Works - \$22.6 million Vehicles and Equipment – \$2.7 million Specialist Services and Contracts - \$2.7 million Training and Capacity Building - \$2.0 million Crop Demonstration and Trials - \$1.3 million Forest Nurseries, Plantations, and Grazing Management - \$3.2 million Supervision and Implementation - \$6.1 million Recurrent Costs - \$0.5 million	

SECTOR/SUBSECTOR ANALYSIS

1. The rural sector underpins the economic and social structure of the economy of Pakistan. Approximately 77% of the population and the vast majority of the nation's poor reside in rural areas. Most derive their living from agriculture and off-farm employment. Agriculture remains the single largest sector of the economy, and is the most important sector for employment and income generation. The sector accounts for about 26% of real gross domestic product and approximately 50% of employment. Growth in the sector has been stagnating over the past few years, though it is likely to remain the primary contributor for some time. An uncertain policy environment (especially concerning the prices and marketing of major crops) combined with widespread resource degradation has contributed to low productivity and profitability. Other contributors to the sector's performance include low-quality inputs, poor quality of support services, inefficient water resource management, inadequate rural infrastructure, and deteriorating natural resource base.

2. Poverty reduction is the key objective of the Government's economic policies. The Government's Poverty Reduction Strategy Paper¹ emphasizes improving productivity and rural infrastructure as necessary conditions for achieving rapid rural economic growth and poverty reduction, given that two thirds of the population is rural. The Government's 2003 official poverty line is estimated at PRs748 per capita per month.² Head-count ratio estimates indicate that poverty had been rising steadily, with some reduction noted in 2003. Rural poverty was estimated as 38.7%, which is considerably higher than urban areas (22.4%). The decrease in poverty for 2003 resulted from macroeconomic stability and near elimination of external account vulnerability resulting in a growth rate of 5.1% in 2003 as compared with 3.4% in 2002 and 2.2% in 2001. The Government's poverty reduction strategy is based on the following major guidelines: (i) accelerating economic growth and maintaining macroeconomic stability; (ii) investing in human capital through reforms in education, health, and population welfare by involving private sector and nongovernment organizations; (iii) developing small- and medium-sized enterprises and microfinance in the country to lead to rural development encompassing all the sectors of the rural economy like agriculture, irrigation, livestock including fisheries, and electrification; and (iv) improving governance through reforms that facilitate administrative and political devolution, access to justice and information, and fiscal decentralization.

3. Agricultural activity in the Federally Administered Tribal Areas (FATA) is opportunistic, taking advantage of streams and underground water, often in very narrow valleys with suitable soil conditions. Productive agricultural lands are web-like, following the valley floors as far up into the hills as nature will allow, with constructed terraces extending the pattern of agriculture further to land relying on sporadic rainfall. The few wider valley floors rely on the few tubewells or sporadic rains to produce grain crops. Rangelands with some grass and shrubs, and oak forests in the higher elevations add to the area's productive potential. A striking feature of the project area is the difference in biophysical environment within the three agencies. High mountain ridges, elevation differences among valley floors, and positioning relative to major weather patterns result in substantial variation among microclimates in the various valleys that comprise the three agencies. Conditions range from very arid with no perennial surface water and little natural vegetation, as was observed in Khyber and Mohmand, to other areas with several perennial streams and rivers and numerous natural springs as observed in Bajaur.

¹ Planning Commission, Government of Pakistan. 2003. *Pakistan Poverty Reduction Strategy Paper*. Islamabad.

² The Government uses an official poverty line derived from the household income and expenditure survey, and based on a caloric requirement of 2,150 calories.

Conditions that vary between the two extremes of near desert to almost 800 millimeters of annual precipitation can be found in all of the agencies.³

4. Infrastructure has improved in recent years, particularly road access. However, a significant part of the area still does not have adequate market access by road. Drinking water sourced from within the village is available to 60–70% of households, but the volume and quality are not high. About a third of these households have water within their house compounds either piped or by well. Electricity lines exist and more than half the households have formal access to electricity, but many cannot afford it, or will not pay the price; about one quarter of households consider electricity as a major source of energy. In isolated areas and among poorer people, cow dung and wood are the sources of cooking fuel, with 50% (Khyber) to 70% (Bajaur) of households relying on firewood and dung. Irrigation water is much sought after and creates an income surplus for those with access to it, but irrigation systems are not efficient, irrigation practices are wasteful and the water table continues to subside, either as a result of drought or because of existing tubewells draining the localized aquifer.

5. Exogenous and endogenous factors constrain the ability of households in the FATA to make significant improvements in their livelihoods are diverse and interdependent. Exogenous factors include the following:

- (i) poor natural resource base in large segments of FATA;
- (ii) area remoteness due to difficult mountainous terrain and topography;
- (iii) FATA has provided a buffer zone between the successive governments of Pakistan and Afghanistan over the last five decades, and earlier when the British ruled the Indian subcontinent; and
- (iv) war and unsettled conditions have persisted in Afghanistan for the last 25 years.

6. Endogenous factors include the following:

- (i) limited area access in some parts of FATA due to security considerations;
- (ii) limited availability of development funds;
- (iii) limited road network in some parts of FATA;
- (iv) limited participation of civil society in development activities because of local administration managing tribal affairs mostly through tribal *maliks* (heads);
- (v) little or no involvement of the female population in decision making even though they are significantly involved in agriculture sector related activities;
- (vi) ineffective centralized decision-making process for planning and implementation of projects since these are removed from the needs and aspirations of the beneficiaries;
- (vii) limited or nonexistent monitoring of activities and outputs; and
- (viii) weak capacity of government line agencies working in FATA for planning, implementation, and monitoring development interventions.

7. A defining feature of the tribal areas is the continuing importance of its elders and leaders, the maliks. Operating without their agreement, support, and protection is difficult to impossible. Not surprisingly, these leaders either own or control a large part of the economic resources and government investments in their areas. In such a circumstance, the availability of

³ Although all agencies have differing conditions within them, Bajaur generally has the most abundant water resources, while Mohmand is generally considered the driest.

benefits can be an issue for poverty reduction, where selection criteria are not followed and significant portions of the local population are excluded from decision-making or benefits. Excluding the better-off members of communities from receiving benefits is not possible or desirable, but access to opportunities must be distributed equitably. Within the existing “*maliki*” system, the poorest residents of communities and especially women do not normally get a chance to improve their material well-being. Achieving broad distribution of project benefits requires that implementing agencies adhere to regular project monitoring and consultation with beneficiaries to reinforce the message of broad participation. Accomplished from the earliest stage, and as part of the project design, this need not be a source of conflict or misunderstanding within tribal groups. Community facilitation staff are responsible for establishing dialogue with stakeholders, and ensuring that participation is not limited. The most effective technique for guaranteeing wide dissemination of benefits is to maintain transparent processes for activity selection.

8. The Government recognizes that FATA residents live in dehumanizing poverty, with an obsolete administrative system and highly stratified social and economic structures. FATA needs to be integrated into the national economic mainstream and to benefit from the economic growth and improved services the Government is bringing about with the successful reform program launched more than 3 years ago. The Government has devised a four-prong strategy to translate this objective into reality: (i) empowering people through the process of devolution as soon as the conditions are conducive; (ii) reinvigorating public institutions that are cost effective, efficient, and responsive to the people by restructuring government departments and law enforcement agencies; (iii) reforming the judiciary by revamping the judicial system; and (iv) supporting economic development through special development packages to improve socioeconomic indicators and reduce poverty.

9. The project interventions focus on building sustainable changes in the quality of life of beneficiaries and are fully consistent with the Pakistan Poverty Reduction Strategy, the Asian Development Bank (ADB) poverty reduction strategy, and the ADB country strategy. The Project will improve roads and irrigation infrastructure, and assist communities to gain access to clean drinking water and alternative energy sources. The ability of communities to address their own needs and participate in planning for development will increase through the establishment of community-based organizations. Demand for services articulated by these groups will assist government agencies in providing infrastructure and technological information. Area wide plans within the crucial framework of watershed management will integrate infrastructure, natural resource development, and capacity building. Gender issues will be addressed through agreement with communities on ways to address gender-related concerns and interests. Planning, management, and coordination assistance will guide effective and integrated use of project resources and facilitate FATA's incorporation into the economic and political mainstream of Pakistan.

EXTERNAL ASSISTANCE TO THE SECTOR

Project	Funding Agencies	Amount (\$ million)	Approval Year
Sustainable Livelihood in Barani Areas	ADB	41.0	2004
North-West Frontier Province (NWFP) Community Infrastructure II	World Bank	37.1	2004
Second Poverty Alleviation Fund Project	World Bank	230.0	2003
Sindh Rural Development Project	ADB	50.0	2002
NWFP On-Farm Water Management Project	World Bank	21.4	2001
NWFP Barani Area Development Project – Phase II	ADB, International Fund for Agricultural Development	52.0	2000
South FATA Development Project	IFAD	17.0	2000
Bajaur Area Development Project	Narcotics Affairs Section of the Government of the United States	4.0	2000
Mohmand Area Development Project	NAS		2000
Khyber Area Development Project	NAS		2000
Malakand Rural Development Project	ADB	41.0	1999
Barani Village Development Project (Punjab)	IFAD	15.3	1999
Dir Area Support Project	IFAD	13.0	1997
Dera Ghazi Khan Rural Development Project	ADB	36.0	1997
Bahawalpur Rural Development Project	ADB, Islamic Development Bank	45.0	1996
NWFP Barani Area Development Project	ADB	32.8	1992
Mansehra Village Support Project	IFAD	14.5	1992
Kalam Integrated Rural Development Project, NWFP (Phase IV)	Swiss Agency for Development Cooperation	3.5	1992

ADB = Asian Development Bank, FATA = Federally Administered Tribal Areas, IFAD = International Fund for Agricultural Development, NAS = Narcotics Affairs Section (of the Government of the United States), NWFP = North-West Frontier Province.

Source: Asian Development Bank estimates.

INFRASTRUCTURE SUBPROJECT SELECTION CRITERIA

A. Drinking Water Supply Schemes

1. The water supply schemes are recommended to be selected on the basis of the following selection criteria:

- (i) The water source/location should be free of conflicts and villagers must allow access to all potential beneficiaries.
- (ii) The scheme must satisfy a minimum water requirement of 45 liters/capita/day (10 gallons/capita/day) for the design period of 20 years.
- (iii) The scheme should exclusively serve the drinking water needs. However where the discharge capacity is more than the drinking water requirements, the excess water may be diverted for irrigation.
- (iv) The village organization must agree to provide implementation management, labor, and local materials free of cost; and ensure maintenance through own sources after scheme completion.

B. Irrigation Systems

2. Criteria for selecting irrigation subprojects include the following:

- (i) The schemes should be free of conflict with regard to land or water rights.
- (ii) The village organization must ensure equity. (For example the construction of surface irrigation schemes must benefit all potential farmers and not just those located at the head reaches.)
- (iii) Villagers must provide land and to the extent possible local materials and labor free of cost.
- (iv) Development of surface irrigation schemes must be assessed for its impact on downstream users.
- (v) Dugwell- and tubewell-based schemes should only be recommended for farmer groups that are willing to contribute a minimum of 50% of the costs, both capital and recurrent. Dug wells should be awarded to groups comprising a minimum of 4 farmers, while the tubewell-based schemes should be awarded to groups with a minimum of 8 farmers.
- (vi) Land ownership of one farmer should not exceed 25% of the total command area under the scheme.
- (vii) Preference should be given to resident landowners as opposed to absentee landowners.
- (viii) A minimum of 6 hectares (ha) of land for dug wells and 18 ha of land for tubewell-based schemes must be available to justify costs.
- (ix) Aquifer discharge must yield a minimum of 1 liter per second/ha to satisfy crop water requirements.
- (x) Dugwells or tubewells should not be sunk within the influence area of existing wells.

C. Irrigation Ponds and Small Reservoirs

3. Selection criteria include the following:

- (i) Small reservoir facilities should be sited in areas with greater than 75%

- probability that design fill capacity will be met on an annual basis.
- (ii) Development of small reservoir facilities and ponds should not affect water supplies (ground and surface) currently exploited for domestic or other productive uses unless compensation schemes agreeable to all parties can be devised.
- (iii) Small reservoirs and ponds should be sited to minimize conveyance and evaporative losses and measures taken to minimize loss of the resource.
- (iv) Labor-intensive construction techniques should be used and local community members and beneficiaries should be employed or contribute labor to development activities.
- (v) Small reservoirs and ponds must be developed with one or more associated community to contribute labor for annual maintenance activities that can be fulfilled with their resources.
- (vi) For selected storages and ponds, communities should agree to voluntarily provide land for both construction of the storage facility, the inundation area, main canals to irrigation areas, and any appurtenant structures. Sites should be selected to minimize the loss of any productive resources, especially cultivable land, from development of the facility.
- (vii) Small reservoirs should only be developed in areas where more cost-effective and less disruptive water supplies (such as groundwater) cannot be developed and dams should be restricted to a maximum height of 6 meters.
- (viii) Development of small reservoirs and ponds must meet all social and environmental safeguard policies, and no project will be undertaken that involves involuntary resettlement.
- (ix) Small reservoirs must be developed with international best practice for safety and should not increase flood risk to local communities.

D. Low-Cost Link Roads

4. Selection criteria include the following:

- (i) A low-cost link road should aim to serve a minimum of three villages with an average population of 2,500. The second category of roads (i.e., upgrading of existing roads) should satisfy a similar requirement prior to selection under the Project.
- (ii) The targeted cluster (of villages) should preferably have agricultural potential that could be exploited with the provision of a new or improved road.
- (iii) The proposed roads should not be an isolated (or unconnected) section and must link with other district or provincial road networks.
- (iv) Road lengths, providing missing links and improving the connectivity of an area, should be given priority.
- (v) In deciding between new roads and improvements to existing tracks, priority should be given to large population clusters totally unconnected with any road network.
- (vi) Communities must agree to maintain and repair the jeepable tracks through a village self-help or local maintenance and repair fund contributed by beneficiary households.

SHALMAN TO LANDI KOTAL WATER SUPPLY SCHEME IN KHYBER AGENCY

1. The proposed Shalman to Landi Kotal water supply scheme is expected to serve approximately 78,000 people by 2030. The population in the coverage area is about 31,700, of which 30–40% are estimated to be associated with the military scouts (9,500–12,000) and residing in the cantonment area. The military needs are about the same as the available water from two existing sources. Currently the water shortage is acute as the needs are estimated to be 5.7 million liters/day and only about 946,000 liters/day are available from rapidly depleting sources; thus only 17% of user needs is being met. As a result, the military cantonment could divert all of the water from the existing sources and thus no water would be available to the general public. For many reasons, the water supply is also not being treated on a regular basis unless the public health department or hospital informs the operator of large-scale illness in the community and then only a few handfuls of powdered chlorine are thrown into the storage reservoirs. The design requirements of the proposed scheme have been estimated to be about 12.5 million liters/day by 2030. The estimated cost of the scheme is about \$5.6 million.¹

2. The entire installation is located in a rather remote region of Khyber Agency, but is accessible in about 1 hour by a relatively good black-topped and gravel road from Landi Kotal to the pump intake installation site on the Kabul River, where the river forms the boundary between Afghanistan and Pakistan. Low flows during the dry season are estimated by the Government to be about 54 cubic-meters/second. The design of the entire system is considered to be relatively simple and construction relatively straightforward. The system will draw water from a series of infiltration galleries along the Kabul River, pump up the hills through a series of in-line pumping stations, to a reservoir located on the top of the hill. From the top of the hill, the flow is then gravity to a series of storage tank reservoirs. The design intake of .20 cubic meter/second is only a small fraction of the low discharge and thus should not affect downstream riparian rights to the water.

3. The primary infiltration gallery, with intake discharge of .20 cubic meter/second, is based on various demands, losses, and user requirements as determined by standards used in Pakistan. The intake would be installed underground on the right bank of the Kabul River (Pakistan side) and include an infiltration chamber and piping to a pumping chamber for the primary pumping plant. On-line intermediate pumping stations with two main lines will be constructed including small tank reservoirs, and one additional storage tank reservoir at the top of the Anzari Top hill. From the Anzari Top tank reservoir, piping will be provided to existing storage tanks. Improvements will be required for the existing distribution system and pumping facilities.

4. Prior to Asian Development Bank (ADB) approval for scheme financing, the following conditions will be met:

- (i) A socioeconomic survey will be undertaken to identify the target population of the service area of Landi Kotal town and other served areas, particularly the military and general public, as well as Afghan refugees. As part of the socioeconomic survey, a review will determine willingness to pay by the beneficiaries (water service fees). In addition, based on the detailed designs an environmental assessment and resettlement/land acquisition plan will be prepared and

¹ Based on 2004 cost estimates PRs318,145,000 without inflation or contingencies. Details are shown in the economic analysis section (paras. 55-56 – of the main text).

approved by the appropriate Pakistani government agency and ADB. An economic analysis will also be carried out.

- (ii) As typical for urban water supply schemes, an equitable water tariff plan will have to be determined and possibly a new collection agency or authority considered to cover all or a portion of the anticipated operation and maintenance costs. To measure water used and fees, water measuring meters or similar devices should be considered for each connection.
- (iii) To meet health requirements, water treatment will be part of the system with an automatic chlorination injection system installed and stockpiles of a sufficient supply of liquid chlorine guaranteed to the operator. The volume of chlorine injected into the system will be determined based on best principles of treating potable water.
- (iv) For safety purposes, mainline flow-metering devices, pressure control valves, manually operated closure valves, and other safety devices will be installed to provide safety to the system in case of unexpected shutdowns, repairs, and routine maintenance.
- (v) As part of the review process and prior to ADB approval, an expert panel of consultants will review the overall plans, detailed designs and implementation plans, and environmental needs with particular emphasis on the mechanical-electrical equipment and distribution system.

SUMMARY RESETTLEMENT FRAMEWORK

A. Resettlement Policy Framework

1. The Land Acquisition Act of 1894 (as amended) is the core legislation used in Pakistan for acquiring private lands for a public purpose. As with most other laws of Pakistan, the act is not applicable to the Federally Administered Tribal Areas (FATA). Local needs for land acquisition are addressed through the tribal system of land rights and distribution. In the absence of a formal legal policy for land acquisition and resettlement, a project-specific set of resettlement principles consistent with Asian Development Bank (ADB) policy requirements has been adopted for the Project. In general terms, the people affected will be compensated for the loss of their land and trees, and assisted financially to restore their affected structures/assets and livelihoods, at least to pre-project levels. Households headed by women and other vulnerable households will be eligible for further cash assistance for relocation and house or structure reconstruction. Plans for subproject resettlement will be based on a full evaluation of the impact of proposals and contain a complete list of all those affected together with the type and size of losses, along with the amount of compensation and/or financial assistance assessed for each person affected.

B. Institutional Framework

2. The Governor's Secretariat (FATA) and the political administrations (the political agents' offices) of the Bajaur, Khyber, and Mohmand agencies are familiar with the procedure and practice of land acquisition. FATA resettlement will be conducted through a land acquisition and resettlement cell (LARC), which will be established in the Peshawar-based project management unit. The LARC will be headed by a chief resettlement officer (grade-18 officer) and will be assisted in field by three agency resettlement officers. For each of the three subareas, the Bajaur, Khyber, and Mohmand agencies will have a political tehsildar assigned to attend specifically to the project-related land acquisition and resettlement activities.

3. Currently, these government agencies do not have the capacity to plan and implement the resettlement activities as desired by ADB because they lack the expertise required for planning and implementing involuntary resettlement under ADB policy and guidelines. To fill in the gap, a resettlement specialist will be included in the supervisory consultants team for the entire project period, to provide the necessary technical assistance for the PMU and agencies, on a continual basis. In addition, a nongovernment organization (NGO) hired by the Project to provide assistance in community organization/participation activities will also be responsible for providing assistance to the LARC, under the guidance of resettlement specialist, in implementing the resettlement plans in an effective manner. It will have a specific role to play in information disclosure and conflict resolution pursuits, especially in matters related to entitlements and compensation payments to people affected. The NGO will also be responsible for ensuring that all procedures for voluntary land donated under the Project are conducted in a transparent manner and that land is donated without duress.

C. Resettlement Procedural Guidelines

4. Specific resettlement procedure guidelines have been established to guide the preparation of appropriate resettlement plans that will be adequate for the magnitude of the land acquisition for subsequent subprojects. These resettlement procedure guidelines require that: (i) the LARC agency resettlement officers/to carry out an initial social assessment survey once the scope of each subproject is identified, based on its preliminary technical designs; (ii) if impacts

are found to be “significant,” the LARC will prepare a full resettlement plan for each subproject; and (iii) if subproject impacts are less than significant (i.e., affecting less than 200 people or affecting households that lose less than 10% of their productive assets), a short resettlement plan will be prepared. Both full and short resettlement plans will comply with ADB’s Policy on Involuntary Resettlement and other social safeguard guidelines.

D. Compensation Principles and Entitlements

5. Table A6.1 presents the compensation principles and entitlements proposed to ensure reinstatement of livelihoods for people affected by the Project.

Table A6.1: Project Compensation Principles and Entitlements

Type of Losses	Entitlement
Barren or nullah-bed nonproductive lands owned by tribes, clans, or subclans collectively	<ul style="list-style-type: none"> Large-scale land acquisition compensated for in cash, based on current prices, and/or as negotiated with the village/tribal <i>jirga</i> (a council of tribal elders) Small-scale land acquisition/utilization for collective benefit of immediate community free, as no one will be affected Tribal commission at 6.25% of total estimated cost of construction of the proposed subproject provided if the tribal <i>jirga</i> and/or the group of people affected voluntarily opt for it
Loss of agricultural land, crops, and trees by owners, tenants, and sharecroppers	<ul style="list-style-type: none"> Cash compensation for land based on current open market value, or as negotiated with landowners’ or decided by the tribal/village elders’ <i>jirga</i> Permanent/traditional tenants paid part of the compensation, as mutually negotiated and agreed with, or as decided by the tribal elders’ <i>jirga</i>, which may be 25%, 33%, or 50% of the total assessed amount Cash compensation for loss of crops at current market value of mature crops Compensation for loss of crops/trees to sharecropper/tenants as per their traditional share or lease agreement (verbal/written) Compensation for loss of wood trees at current market value Compensation for loss of fruit trees for average fruit production for next 10 years computed at the current market value Encroachers/squatters not eligible for compensation for land; however, will be entitled to compensation for loss of crops, trees, and/or other private assets
Loss of residential, commercial, and other structures by owners	<ul style="list-style-type: none"> Legal owners of the lands under built-up residential/commercial structures and similar other assets paid land compensation at current open market values, or negotiated with or decided by the <i>jirga</i> of tribal elders The encroachers/squatters will not be eligible for land compensation however will be entitled to compensation for the loss of their structures Compensation for loss of built-up structures at the current replacement cost of the affected structure(s) Owners of affected structures allowed to take/reuse all salvageable materials for rebuilding/rehabilitation of the structure In case of relocation, transfer allowance to cover the cost of shifting (transport plus loading/unloading) the affected structures to be paid on an actual cost basis or current market rates Compensation for water wells/pumps, irrigation channels, drains, pathways, and other similar immovable assets at current replacement value, with

Type of Losses	Entitlement
	installation costs <ul style="list-style-type: none"> Vulnerable households and those headed by women that are adversely affected to be paid additional cash assistance of PRs1,000
Loss of business premises by renters	<ul style="list-style-type: none"> One-time cash assistance equivalent to 1-month rent to affected renters to reestablish their business in an alternative location Shifting allowance (transport plus loading/unloading charges) to be paid to affected business people (if applicable), on an actual cost basis
Income assistance for loss of business by shops/small business enterprise (SBE) owners	<ul style="list-style-type: none"> A one-time, lump sum grant, based on the type of business and type of losses will usually be in the following ranges: (i) small business, PRs1,000 to PRs1,500; (ii) medium business, PRs2,000 to PRs3,000; and large business/manufacturing, PRs4,000 to PRs5,000 (compensation assessment will be carried out jointly by the project team, line department, and people affected)
Loss of income by agricultural tenants or laborers	<ul style="list-style-type: none"> One-time, lump-sum grant of PRs1,000 to nonpermanent sharecroppers and leaseholders (in addition to share in crop/tree compensation) One-time, lump-sum grant of PRs1,000 to regular/long-term agricultural labor (only those who are associated specifically by the affected land)
Loss of wages by employees of the project affected shops/SBEs	<ul style="list-style-type: none"> One-time financial assistance to the affected hired labor equivalent to 30 days of wages to be computed at local wage rates for various cadres Family workers in SBEs are not eligible, as already covered by income assistance for loss of business by shop/SBE owners Special assistance of PRs1,000 to the affected vulnerable persons, such as the destitute, widows, and disabled for restoring their livelihoods
Restoration of cultural and community structures	<ul style="list-style-type: none"> Complete rehabilitation/restoration by the Project; or Cash compensation for restoring affected cultural/community structures and installations, to the recognized patron/custodian

Source: Asian Development Bank mission findings.

E. Disclosure, Consultation, and Grievances

6. Each resettlement plan will be prepared and implemented in close consultation with the stakeholders, and involve focus group discussions and meetings, particularly with people affected by the Project. The resettlement policy framework will be made available in the Urdu language and explained in Pashto language during focus group village meetings. Copies of draft resettlement plans will be distributed among community groups for local inputs prior to finalization of the detailed design, and after the socioeconomic survey has been carried out to avoid fraudulent claims. Complaints and grievance procedures will be outlined in each resettlement plan and grievance redress committees will be established at each agency for subprojects. This committee will be chaired by the political agent, assisted by a political tehsildar, with representatives from the LARC, line departments, those affected, and project NGOs. For all disputes other than those relating to legal ownership rights, the committee will review grievances involving all resettlement benefits, relocation, and other assistance. Grievances will be redressed within 2–4 weeks from the date of lodging the complaints.

F. Monitoring and Evaluation

7. The LARC will establish an internal monitoring system involving the agency resettlement officer/political tehsildar and implementing staff. They will prepare monthly internal progress reports on all aspects of land acquisition, compensation, and resettlement activities. The LARC headquarters will report to the project director and ADB on land acquisition and resettlement in the quarterly progress report.

G. Implementation Schedule

8. Although land acquisition is a complex and lengthy process in Pakistan, land acquisition is expected to be formalized quickly because of the land required and priority given to the Project by the Government. Land acquisition should be completed within 1 year.

H. Resettlement Budget and Financing

9. An indicative budget for the Project's land acquisition and resettlement has been prepared for the allocation of funds prior to the start of project activities (Table A6.2). These budget estimates include all the costs related to land acquisition, compensation, resettlement assistance, training of staff, hiring of NGOs and consultants, and internal monitoring of implementation of the resettlement plan.

Table A6.2: Summary Resettlement Budget^a

No.	Description	PRs million	\$ million
1	Land Compensation (including crops and trees)	159.6	2.7
2	Compensation for Affected Structures (shops, houses, livestock sheds, other)	6.0	0.1
3	Financial Assistance to Tenants and Vulnerable People (widows, disabled)	3.0	0.1
	Subtotal (1+2+3)	168.6	2.9
4	Hiring of Resettlement Specialist (technical assistance)	4.8	0.1
5	Hiring of Panel of Experts for Monitoring and Evaluation	2.5	0.0
	Subtotal (4+5)	7.3	0.1
	Subtotal (1+2+3+4+5)	175.9	3.0
6	Contingencies (10% of total identified costs)	17.6	0.3
	Total	193.5	3.3

^a Exchange rate: PRs59.70 = \$1.00.

Source: Asian Development Bank estimates.

I. Government Acceptance of Resettlement Plans

10. The Government and especially the Ministry of Kashmir and Northern Affairs, States, and Frontier Regions and the Governor's Secretariat (FATA) have agreed to formally adopt this resettlement framework, and to have it posted on the Project and ADB websites. The Government is committed to providing the total estimated costs of resettlement under the Project for the planning and implementation of all the full and short resettlement plans.

COST ESTIMATES AND FINANCING PLAN
Table A7.1: Project Cost Summary by Expenditure

Items	(PRs)			% Foreign Exchange	% Total Base Costs	US\$			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total			Local	Foreign	Total		
I. Investment Costs										
A. Civil Works										
1. Design and Supervision	88,319,807	-	88,319,807	-	3	1,480,138	-	1,480,138	-	3
2. Survey and Investigation	10,845,000	1,205,000	12,050,000	10	-	181,750	20,194	201,944	10	-
3. Construction	802,857,255	343,438,824	1,146,296,079	30	37	13,454,957	5,755,636	19,210,593	30	37
4. Construction Unskilled Labor	289,852,800	-	289,852,800	-	9	4,857,597	-	4,857,597	-	9
5. Generators and Pumps	14,862,540	6,369,660	21,232,200	30	1	249,079	106,748	355,827	30	1
Subtotal (A)	1,206,737,402	351,013,484	1,557,750,886	23	50	20,223,519	5,882,579	26,106,098	23	50
B. Land Acquisition/Resettlement	151,200,000	-	151,200,000	-	5	2,533,937	-	2,533,937	-	5
C. Vehicles and Equipment										
1. Vehicles	88,850,000	76,350,000	165,200,000	46	5	1,489,023	1,279,537	2,768,560	46	5
2. Equipment and Furniture	32,068,500	30,727,500	62,796,000	49	2	537,431	514,957	1,052,388	49	2
Subtotal (C)	120,918,500	107,077,500	227,996,000	47	7	2,026,454	1,794,495	3,820,949	47	7
D. Specialist Services										
1. International Consultants	-	24,570,000	24,570,000	100	1	-	411,765	411,765	100	1
2. National Consultants	34,380,000	-	34,380,000	-	1	576,169	-	576,169	-	1
3. Consultancy Support Costs	12,401,750	4,105,250	16,507,000	25	1	207,839	68,799	276,638	25	1
Subtotal (D)	46,781,750	28,675,250	75,457,000	38	2	784,008	480,564	1,264,572	38	2
E. Service Contracts	74,017,500	-	74,017,500	-	2	1,240,447	-	1,240,447	-	2
F. Training and Capacity Building										
1. Beneficiary Training	99,880,000	-	99,880,000	-	3	1,673,873	-	1,673,873	-	3
2. Staff Training	9,516,000	-	9,516,000	-	-	159,477	-	159,477	-	-
Subtotal (F)	109,396,000	-	109,396,000	-	3	1,833,350	-	1,833,350	-	3
G. Crop Demonstrations and Trials	62,056,800	6,895,200	68,952,000	10	2	1,040,000	115,556	1,155,556	10	2
H. Forest Nurseries, Plantations, and Grazing Management										
1. Forest Material and Program	134,532,400	-	134,532,400	-	4	2,254,607	-	2,254,607	-	4
2. Forest Labor	56,681,000	-	56,681,000	-	2	949,908	-	949,908	-	2
Subtotal (H)	191,213,400	-	191,213,400	-	6	3,204,515	-	3,204,515	-	6
I. Studies, Plans and Research	2,400,000	-	2,400,000	-	-	40,221	-	40,221	-	-
J. Supervision and Implementation										
1. Incremental Staff										
a. Line Agency Staff	226,770,000	-	226,770,000	-	7	3,800,402	-	3,800,402	-	7
b. Contract Staff	195,650,000	-	195,650,000	-	6	3,278,867	-	3,278,867	-	6
Subtotal (1)	422,420,000	-	422,420,000	-	14	7,079,269	-	7,079,269	-	14
2. Incremental Operating Costs	48,361,500	5,373,500	53,735,000	10	2	810,483	90,054	900,536	10	2
3. Vehicle and Equipment O&M	47,691,600	47,691,600	95,383,200	50	3	799,256	799,256	1,598,512	50	3
Subtotal (J)	518,473,100	53,065,100	571,538,200	9	18	8,689,008	889,310	9,578,317	9	18
Total Investment Costs	2,483,194,452	546,726,534	3,029,920,986	18	97	41,615,459	9,162,503	50,777,962	18	97
II. Recurrent Costs										
A. Government Responsible O&M	63,952,050	-	63,952,050	-	2	1,071,762	-	1,071,762	-	2
B. Beneficiary Responsible O&M ^a	33,095,061	-	33,095,061	-	1	554,635	-	554,635	-	1
Total Recurrent Costs	97,047,111	-	97,047,111	-	3	1,626,397	-	1,626,397	-	3
Total Baseline Costs	2,580,241,563	546,726,534	3,126,968,097	17	100	43,241,856	9,162,503	52,404,359	17	100
Physical Contingencies	178,697,386	43,447,538	222,144,924	20	7	2,994,761	728,130	3,722,891	20	7
Price Contingencies	426,395,464	79,945,260	506,340,724	16	16	2,845,587	537,260	3,382,846	16	6
Total Project Costs	3,185,334,413	670,119,332	3,855,453,745	17	123	49,082,204	10,427,893	59,510,097	18	114
Interest During Implementation	-	54,377,131	54,377,131	100	2	-	861,903	861,903	100	2
Total Costs to be Financed	3,185,334,413	724,496,463	3,909,830,876	19	125	49,082,204	11,289,796	60,371,999	19	115

O&M = operation and maintenance.

Source: Asian Development Bank estimates.

^a ADB funds for O&M intended for 100% of cost the first year, then 75%, 50% and 25% in following years during implementation. Average is effectively 87.5%.

Table A7.2: Project Expenditure Accounts by Financiers

Items	ADB		Government		Beneficiaries		Total		Foreign Exchange	Local (Excluding Taxes)	Duties and Taxes
	Amount	%	Amount	%	Amount	%	Amount	%			
I. Investment Costs											
A. Civil Works											
1. Design and Supervision	1,388,884	80.0	346,310	20.0	-	-	1,735,194	2.9	-	1,735,194	-
2. Survey and Investigation	237,230	100.0	0	-	-	-	237,230	0.4	23,723	213,507	-
3. Construction	17,417,764	77.4	5,089,163	22.6	-	-	22,506,927	37.3	6,743,666	15,763,261	-
4. Construction Unskilled Labor	3,192,168	56.0	-0	-0.0	2,512,716	44.0	5,704,884	9.4	-	5,704,884	-
5. Generators and Pumps	338,997	81.1	78,821	18.9	-	-	417,819	0.7	125,346	229,800	62,673
Subtotal (A)	22,575,043	73.8	5,514,294	18.0	2,512,716	8.2	30,602,053	50.7	6,892,735	23,646,645	62,673
B. Land Acquisition/Resettlement	-	-	2,701,931	100.0	-	-	2,701,931	4.5	-	2,701,931	-
C. Vehicles and Equipment											
1. Vehicles	1,771,026	60.0	1,180,684	40.0	-	-	2,951,710	4.9	1,363,329	407,696	1,180,684
2. Equipment and Furniture	956,567	85.0	168,806	15.0	-	-	1,125,373	1.9	550,730	405,837	168,806
Subtotal (C)	2,727,593	66.9	1,349,490	33.1	-	-	4,077,083	6.8	1,914,060	813,533	1,349,490
D. Specialist Services											
1. International Consultants	432,943	100.0	-	-	-	-	432,943	0.7	432,943	-	-
2. National Consultants	595,334	100.0	-	-	-	-	595,334	1.0	-	595,334	-
3. Consultancy Support Costs	288,284	100.0	0	-	-	-	288,284	0.5	71,706	216,578	-
Subtotal (D)	1,316,560	100.0	0	-	-	-	1,316,560	2.2	504,648	811,912	-
E. Service Contracts	1,363,895	100.0	-	-	-	-	1,363,895	2.3	-	1,363,895	-
F. Training and Capacity Building											
1. Beneficiary Training	1,871,585	100.0	-	-	-	-	1,871,585	3.1	-	1,871,585	-
2. Staff Training	171,993	100.0	-	-	-	-	171,993	0.3	-	171,993	-
Subtotal (F)	2,043,578	100.0	-	-	-	-	2,043,578	3.4	-	2,043,578	-
G. Crop Demonstrations and Trials	1,295,499	100.0	-	-	-	-	1,295,499	2.1	129,550	1,165,949	-
H. Forest Nurseries, Plantations, and Grazing Management											
1. Forest Material and Program	2,522,506	100.0	-	-	-	-	2,522,506	4.2	-	2,522,506	-
2. Forest Labor	643,979	60.5	0	-	420,449	39.5	1,064,429	1.8	-	1,064,429	-
Subtotal (H)	3,166,486	88.3	0	-	420,449	11.7	3,586,935	5.9	-	3,586,935	-
I. Studies, Plans and Research	45,092	100.0	-	-	-	-	45,092	0.1	-	45,092	-
J. Supervision and Implementation											
1. Incremental Staff											
Line Agency Staff	-	-	4,217,777	100.0	-	-	4,217,777	7.0	-	4,217,777	-
Contract Staff	3,648,525	100.0	-	-	-	-	3,648,525	6.0	-	3,648,525	-
Subtotal (1)	3,648,525	46.4	4,217,777	53.6	-	-	7,866,302	13.0	-	7,866,302	-
2. Incremental Operating Costs	898,799	90.0	99,867	10.0	-	-	998,665	1.7	99,867	798,932	99,867
3. Vehicle and Equipment O&M	1,507,956	85.0	266,110	15.0	-	-	1,774,066	2.9	887,033	620,923	266,110
Subtotal (J)	6,055,280	56.9	4,583,753	43.1	-	-	10,639,034	17.6	986,900	9,286,157	365,976
Total Investment Costs	40,589,026	70.4	14,149,468	24.5	2,933,165	5.1	57,671,659	95.5	10,427,893	45,465,627	1,778,139
II. Recurrent Costs											
A. Government Responsible O&M	-	-	1,210,919	100.0	-	-	1,210,919	2.0	-	1,210,919	-
B. Beneficiary Responsible O&M ^a	549,078	87.5	-	-	78,440	12.5	627,518	1.0	-	627,518	-
Total Recurrent Costs	549,078	29.9	1,210,919	65.9	78,440	4.3	1,838,437	3.0	-	1,838,437	-
Total Project Cost	41,138,104	69.1	15,360,387	25.8	3,011,605	5.1	59,510,097	98.6	10,427,893	47,304,065	1,778,139
Interest During Implementation	861,903	100.0	-	-	-	-	861,903	1.4	-	-	-
Total Disbursement	42,000,007	69.6	15,360,387	25.4	3,011,605	5.0	60,371,999	100.0	10,427,893	47,304,065	1,778,139

ADB = Asian Development Bank. O&M = operation and maintenance.

Source: Asian Development Bank estimates.

^a ADB funds for O&M intended for 100% of cost the first year, then 75%, 50% and 25% in following years during implementation. Average is effectively 87.5%.

WATERSHED SELECTION CRITERIA (INDICATIVE)

1. Maps and aerial photographs are either available or can be procured for the potential watershed so project interventions can be identified, located, and monitored. Other data, such as rainfall and runoff, are available or can be correlated from elsewhere.
2. Micro-catchments and subwatersheds can be easily identified from the maps and aerial photographs.
3. Access by road is available to the subwatershed.
4. Several different types of project interventions are identified in the subwatershed.
5. Homogeneity of the area.
6. Administrative control is not divided in the area.
7. Ethnically, culturally, and socially the population in the subwatershed is generally a homogenous group.
8. The subwatershed is devoid of major conflicts; either external or internal, and security is not a major concern.
9. Approximately 60% of a subwatershed population is identified as poor and living below the poverty line for the area.
10. Village elders of potential villages are aware of the project interventions and have indicated a willingness to participate.
11. Communal lands are not shared with other watersheds.
12. Upper watershed area is considered to be in critical condition with deforestation, steep slopes, and gully erosion easily noticeable.
13. No other aid-funded project is being implemented in the watershed with similar types of interventions.

SUBPROJECT INTERVENTION PROCEDURES

No	Task	Timing/Duration	ADB Approval
1	Develop watershed selection criteria ^a	First month of Project, adjusted annually as required	Yes
2	Select potential watersheds	3 rd month of Project and annually	No
3	Describe the Project to potential communities in each selected watershed	Annually	No
4	Discuss potential subprojects with communities and village elders/tribal leaders concerned	Annually	No
5	Identify potential subprojects in selected watersheds by carrying out the following activities:	Annually	Yes ^b
5a	Carry out the following activities in the potential subprojects: (i) socioeconomic profile in the subproject area; (ii) various surveys and investigations; and (iii) compliance assessments (i.e., environment, resettlement, etc.)	1 month 1 month 1–3 months	
5b	Prepare designs and cost estimates for appropriate subproject intervention with input from the beneficiaries	1 month	
5c	Prepare detailed construction plans and economic analysis	1 month	
5d	Prepare environmental impact assessment, environmental management plan, and resettlement/land acquisition plan as required	1–6 months	
5e	Prepare partnership agreement, cost-sharing arrangements for O&M, and other terms of partnership	1 month	
5f	Form a community organization or water user association using World Bank On-Farm Water Management Project procedures, as adopted	1 month	
5g	Finalize construction arrangements and participation role of the beneficiaries	1 month	
5h	Finalize cost-sharing arrangements for O&M between the agency and beneficiaries, with agreement of the community organization and/or tribal leaders	1 month	

No.	Task	Timing/Duration	ADB Approval
5i	Have O&M cost-sharing agreement signed by the agency and community organization	1 month	
5j	Establish an O&M joint savings bank account for the subproject	1 month	
5k	Agree on land acquisition compensation arrangements as required	3–6 months	
6	Complete preconstruction of the subproject: (i) determine the type of year 1 contract and various arrangements, (ii) prequalify contractors and hold prebid meeting, and (iii) submit and evaluate bids and awards	3 months	Yes ^b No Yes, with “no objection” letter from ADB”
7	Construct the subproject: (i) provide notice to proceed, (ii) complete construction, (iii) supervise construction, and (iv) complete subproject	3–6 months	No
8	Initiate the monitoring and evaluation system as designed	Immediately after completion	No
9	Modify the environmental management plan	As required	Yes
10	Officially turn over the subproject to the village organization beneficiaries	9–12 months after completion	No
11	Provide assistance to the village organization for O&M on a declining basis	Annually on a declining basis; 100% of estimated O&M cost for 1 year following turnover of the subproject that would be reduced by 25% each successive year. Cost sharing with beneficiaries would thus be 100/0, 75/25, 50/50, 25/75, 0/100.	No
12	Evaluate selected subprojects and the overall Project	Annual review mission and Project completion report	Yes

ADB = Asian Development Bank, O&M = operation and maintenance.

^a Tentative watershed selection criteria have been provided in the Report and Recommendation of the President to the Board of Directors. However, this is subject to revision during implementation and modified accordingly.

^b Approved annually or bi-annually through work plan approval process

Source: Asian Development Bank estimates.

IMPLEMENTATION SCHEDULE

Agency	Prior	Year One	Year Two	Year Three	Year Four	Year Five
Project Start-Up Activities						
Establish Project Steering Committee						
Establish Project Staff Selection Subcommittee						
Publish Personnel Recruitment List						
Prepare Procurement List for PSC Approval						
Appoint Project Director						
Establish Project Management Unit						
Component 1: Integrated Resource Management						
A. Farming systems						
1. Improved seed technology						
2. ICM training of trainers						
3. FFS staff training						
4. Adaptive research trials						
5. Varietal screening						
B. Livestock and Fodder						
1. Nutrition fodder and forage						
2. Capacity building						
C. Community Forestry and Range Management						
1. Nurseries						
2. Plantations						
3. Controlled grazing						
4. Capacity building						
Component 2: Community Infrastructure						
A. Arterial link roads						
B. Community drinking water supply and sanitation						
1. Drinking water supply						
2. Sanitation works						
C. Irrigation Development						
1. Ponds and small reservoirs						
2. Surface schemes						
3. Lift irrigation schemes						
4. Wells						
5. Water harvesting check dams						
6. Small storage dams						
7. Soil conservation/flood protection works						
8. Water assessment						
D. Capacity Building						
1. Community training in O&M						
2. Staff training						
Component 3: Project Management, Planning and Support						
1. Coordination and management						
2. Watershed planning/community facilitation						
3. Capacity building and training						
4. Consultation with line departments						
5. Baseline surveys						
6. Performance reviews						

FFS = farmer field school, ICM = integrated crop management, O&M = operation and maintenance, PSC = project steering committee.

Source: Asian Development Bank estimates.

INDICATIVE PROCUREMENT PACKAGES

Package	Item	Unit	Procurement Method	Value ^a (\$ '000)
A. Peshawar-Based PMU				
1.	Motorized Vehicles			
	a. Double cab pickup	5	LCB	205.0
2.	Office Equipment		DP	71.3
B. Bajaur Agency PIU				
1.	Motorized Vehicles			
	a. Double cab pickup	18	IS	738.5
	b. Motorcycle (125 cc)	90	IS	153.8
2.	Office Equipment		DP	302.0
3.	Other Equipment			
	a. Dug-well irrigation pumps/diesel generator sets	48	LCB	0.025
	b. Tubewell irrigation pumps/diesel generator sets	4	LCB	0.010
	c. Lift irrigation schemes pumps/diesel generator sets	16	LCB	0.008
	d. Drinking water tubewell pumps/diesel generator sets	10	LCB	0.021
	e. Drinking dug-well pumps/diesel generator sets	160	LCB	0.084
4.	Civil Works	Multiple	LCB	7.196
C. Khyber Agency PIU				
1.	Motorized Vehicles			
	a. Double cab pickup	18	IS	738.5
	b. Motorcycle (125 cc)	80	IS	136.8
2.	Office Equipment		DP	302.0
3.	Other Equipment			
	a. Dug-well irrigation pumps/diesel generator sets	48	LCB	0.025
	b. Tubewell irrigation pumps/diesel generator sets	4	LCB	0.010
	c. Lift irrigation schemes pumps/diesel generator sets	16	LCB	0.008
	d. Drinking water tubewell pumps/diesel generator sets	8	LCB	0.010
	e. Drinking dug-well pumps/diesel generator sets	160	LCB	0.084
4.	Civil Works	Multiple	LCB	6.985
	a. Shalman to Landi Kotal Water Supply Scheme	Single	ICB	5.329
D. Mohmand Agency PIU				
1.	Motorized Vehicles			
	a. Double cab pickup	18	IS	738.5
	b. Motorcycle (125 cc)	90	IS	153.8
2.	Office Equipment		DP	302.0
3.	Other Equipment			
	a. Dug-well irrigation pumps/diesel generator sets	48	LCB	0.025
	b. Tubewell irrigation pumps/diesel generator sets	4	LCB	0.010
	c. Lift irrigation schemes pumps/diesel generator sets	16	LCB	0.008
	d. Drinking water tubewell pumps/diesel generator sets	10	LCB	0.010
	e. Drinking dug-well pumps/diesel generator sets	160	LCB	0.084
4.	Civil Works	Multiple	LCB	6.601

DP = direct purchase, IS = international shopping, LCB = local competitive bidding, PIU = project implementation unit, PMU = project management unit.

^a Excluding taxes and contingencies.

Source: Asian Development Bank estimates.

PROJECT CONSULTING SERVICES

1. Proposed consulting services are required to provide specialized inputs for which adequate technical capabilities are not available in the line departments (Table A12). Water resource development and conservation is a key input and most of the consulting inputs address water resource and watershed planning and management, establishing suitable engineering standards and quality control, establishing monitoring and measurement facilities as required, undertaking technical designs, assessing economic, environmental and social viability of interventions, undertaking general monitoring and evaluation, and undertaking community forestry activities. A total of 147 person-months of consulting services inputs, comprising 21 person-months of international and 126 person-months of domestic, will be engaged through a consulting consortium. In addition, 2 person-months of individual consulting services inputs are required to serve on a review panel for the proposed Shalman to Landi Kotal water supply scheme.

2. In addition to the proposed consulting services specified in Table A12, technical assistance (through service contracts) is needed for: (i) a baseline survey; (ii) community mobilization activities and a public information campaign; (iii) periodic independent audits of project performance; (iv) a surface- and groundwater assessment study; and (v) establishment and implementation of the project management information system. The baseline survey will be undertaken in the first year and be the basis for designing the project management information system. The community mobilization and information dissemination program will be aimed at involving beneficiaries in project activities from the outset. Line departments and project staff will receive training in community facilitation and mobilization prior to commencing work with communities. Periodic independent performance audits will be undertaken to strengthen governance measures adopted by the project. The water resources assessment study (surface and groundwater sources in the three agencies) will evaluate existing information and provide critical information for identification and location/design of new water resources structures, particularly for the installation of any proposed deep tubewells. The project management information system will be established to monitor physical and financial progress as well as to assess the development impacts of the project. The system will link the implementing and executing agencies to the PMU and PIUs.

Table A12: Consulting Services

Expertise	Person Months		
	International	Domestic	Total
Consulting Consortium			
Water Resources Specialist, Team Leader	20 ^b		20
Environment		10	10
Natural Resources Management (3)		24	24
Watershed Planning and Management		9	9
Hydraulic Engineering/Dams		18	18
Geohydrology		24	24
Hydrology (2)		16	16
Economics		3	3
Irrigation On-Farm Water Management		3	3
Resettlement		18	18
Review Panel^a (Individual Consultants)			
Water Supply Engineering	1		1
Electromechanical Engineering		1	1
Total	21	126	147

^a To review the proposed Shalman to Landi Kotal water supply scheme.

^b A suitably qualified domestic consultant may be considered, subject to ADB approval, if prevailing conditions make it difficult to recruit a suitable international consultant.

Source: Asian Development Bank estimates.

PROJECT JUSTIFICATION

A. Introduction

1. The Federally Administered Tribal Areas (FATA) Rural Development Project is designed to enhance rural livelihoods in three of the FATA agencies: Bajaur, Khyber, and Mohmand. Project components include resource management activities in agriculture, livestock, and forestry; as well as infrastructure investments in irrigation, rural roads, and drinking water facilities. Given the interaction between elements of forestry, livestock, and agriculture, proposed project interventions will be concentrated in chosen micro-watersheds within the three agencies. As such, specific project interventions have not yet been chosen. Instead, selection criteria have been devised for prospective micro-watersheds, as well as for potential interventions within those watersheds. Project implementation will be difficult and rely on a team of community mobilizers to work closely with target beneficiaries and line department officials.

B. Project Benefits

2. Benefits and costs are examined both in economic and financial terms to look at not only the economic viability of the Project but also the expected impact on various sectors of local society. Project investments are planned over 5 years. The life of the Project, however, is expected to be for 20 years after the time of a particular intervention. For this analysis, the costs of each intervention as well as its benefits are calculated for two alternative situations: “with” the Project and “without” the Project.

C. Economic Pricing

3. Financial prices used in this analysis were identified through a survey of the project area conducted by the project preparatory technical assistance (TA) team. To assess the Project’s contributions to the Pakistan economy financial values must be converted into their economic equivalents. Basic assumptions used in the economic part of the analysis include

- (i) the use of a domestic price numeraire;
- (ii) values are expressed in constant 2004 prices to exclude inflation;
- (iii) the Pakistan rupee (PR₹) is the unit of account; the exchange rate used is PR₹59.7 = \$1;¹
- (iv) economic values for major tradable commodities (notably major food grains as well as fertilizers and milk) are based on border parity prices, and a standard conversion factor of 0.9 is used for nontraded goods and services; and a shadow wage rate factor of 0.8 is used for male labor and 0.7 for female labor; and
- (v) transfer payments such as taxes and subsidies are excluded in the calculation of economic values.

D. Economic Analysis

4. Economic analyses were performed for each of the six project subcomponents. Results (and pertinent methodologies used) for these subcomponent analyses are described here. Costs applied to these subcomponents include both the costs of direct investment (in crop demonstrations, training, infrastructure, etc.) as well as implementation costs of the appropriate

¹ This was the exchange rate in September 2005.

line agencies involved. Only the costs of the project management unit and agency project implementation units are included in the calculation of over-all project returns. Benefits have been phased in according to the date of expected investments and (for the farming, livestock, and irrigation models) scheduled to take a few years to reach their expected potential.²

5. **Farming Systems and Crop Production.** This intervention will involve the introduction of improved seed technology and farming demonstration plots, adaptive research trials, field screening for appropriate varieties, integrated crop management training, farmer field days, and training of extension staff. Approximately 52,500 ha are expected to be affected. Based on incremental net crop income, this subcomponent is expected to be economically viable. The economic net present value (ENPV) and economic internal rate of return (EIRR) are displayed in Table A13 (along with the results of all the other subcomponents. The ENPV is PRs 402.3 million (\$6.9 million) while the EIRR is 37.3%.

6. The economic analysis of the subcomponent is based on the assumption that benefits and costs over the life of the Project will be as calculated. The future, of course, may not perfectly follow that assumption. Sensitivity tests regarding specific alternative assumptions are also detailed in Table A13. They include tests for risks of (i) an increase in investment cost, (ii) benefit shortfalls, (iii) yield decreases, (iv) product price decreases, (v) a shortfall in project implementation, and (vi) a decrease in the project life. For each risk variable the EIRR is recalculated assuming a 20% change. The switching value for that variable (beyond which the EIRR would fall below 12%) and a sensitivity measure are also calculated.³ The base EIRR for this subcomponent was sufficiently high that none of the risk variables would appear to seriously threaten the viability of the intervention. Overall, the farming systems and crop production subcomponent should show strong returns.

7. **Livestock and Fodder Development.** The Project plans interventions to improve animal husbandry practices and feed management. Activities will include fodder production demonstration plots, training of village animal husbandry extension workers, and exposing farmers to improved techniques through farmer field days and visits to public-sector livestock institutions. Livestock staff will also be trained. Benefits to livestock will also accrue from the range management portion of the forestry subcomponent. Forty-six thousand households are expected to ultimately benefit from this program. This subcomponent is expected to be economically viable with an ENPV of PRs77.8 million (\$1.3 million) and an EIRR of 17.8 %. Sensitivity tests performed covered similar risks already discussed (Table A13). None of these risk variables showed the potential to seriously threaten this subcomponent's returns.

8. **Community Forestry and Range Management.** The community forestry and range management subcomponent includes the establishment of both farmer-managed and department-managed nurseries, as well as farmer-, community-, and department-managed forest plantations. Quantified benefits include the production of these enterprises. In addition, given the environmental benefits of forest establishment and stabilization, an attempt has been made to quantify the value of a decrease in the without-project rate of environmental

² The full economic analysis can be found in Supplementary Appendix H.

³ Sensitivity is the absolute value of the percent change in the EIRR divided by the percent change in the risk factor. A sensitivity level that is greater than 1.0 indicates that a percent change in the risk factor will cause a change in the EIRR of more than 1% of its base case value indicating a relatively high degree of sensitivity to the risk. The opposite is the case when the sensitivity measure is less than 1.0.

degradation.⁴ The community forestry and range management program is expected to have an ENPV of PRs244.5 million (\$ 4.2 million) and an EIRR of 17.5%. These results indicate a degree of economic viability. Sensitivity tests were performed on the usual cost, benefit, yield, price, level of implementation, and project life risk variables, as well as on the environmental benefit estimate. Again, none of these variables appear to bring great cause for concern.

9. **Irrigation Development.** The irrigation interventions include a variety of schemes—small ponds, new and rehabilitated surface systems, tubewells, dug wells, small check dams, and slightly larger delayed action dams. Irrigation allows farmers to adopt higher value crops and a higher cropping intensity. While marketing of higher value crops may be an issue, areas in the agencies recently opened up with rural roads have shown a good increase in the production of vegetables for the Peshawar market. The marketing potential is growing.

10. For the various types of schemes combined, the EIRR is 14.6% and the ENPV is PRs88.1 (\$1.5 million). Sensitivity tests indicate that modest negative changes in a number of the benefit, cost, yield, and price risk variables may threaten the viability of the irrigation subcomponent. While the sensitivity values of these risks are not all high (except for vegetable yields), the base case EIRR is sufficiently close to the 12% critical level as to make these variables a real risk to subproject viability. During project implementation, an especially important activity will be ensuring that farmers see the value of adopting crop technologies that irrigation makes possible and that they understand the importance of maintaining their systems with proper operation and maintenance (O&M).

11. **Road Construction and Upgrading.** The construction of new shingle roads (and the upgrading of others) will better link communities to main roads and the outside economy and services (such as educational and health facilities). This will make communication easier and greatly decrease the cost of transporting rural inputs and production. Based on vehicle operating costs and passenger time savings, the shingle roads program is expected to be economically viable. The EIRR is 16.5% and the ENPV is PRs124.4. Sensitivity tests show no major threats to viability.

12. **Drinking Water Supply.** Many FATA communities have problems with drinking water availability and quality. The Project will help build a number of domestic water schemes, including dug-well, gravity-flow, tubewell, and hand-pump systems. Benefits from these schemes include decreased water-fetching times (primarily involving women) and improvements in the health of household members using safer water with the Project.⁵ The EIRR is 31.0% and the ENPV is PRs302.0 million (\$5.2 million); none of the risk variables tested appeared to pose a major threat to viability. This subcomponent, overall, seems to have solid returns.

13. **Overall Project.** The six project subcomponent models were combined and project implementation costs included. The EIRR for the Project is 19.1% and the ENVP is PRs1,036.1 million (\$17.7 million). The Project as a whole, as with its subcomponent parts, can be expected to have solid economic returns.

⁴ Calculations are based on an assumption that without the Project, the level of agricultural and livestock production (found in the agriculture and livestock models) will decrease at a rate of 1% per year. A project benefit is found by assuming that project interventions will cause a decrease in that rate of degradation to 0.5%. These assumptions were deemed reasonable, but are not based on any studies or secondary sources.

⁵ The proposed Shalman water supply scheme for Landi Kotal in the Khyber Agency (proposed by the Government after the project preparatory TA analysis of the Project) has not been included in this analysis given that a full feasibility analysis (including necessary social and environmental effects) has not yet been completed.

E. Household Returns and Poverty Implications

14. Official statistics on rural income and poverty in the FATA area are quite weak. The project preparatory TA effort did include a social survey, but given the social constraints within the FATA agencies the use of a random sample was impossible. Most houses are very private (even fortress-like) and gaining access to potential respondents was very difficult and often impossible. Also, the locations of the actual project interventions have not yet been determined, so specific information about definite project beneficiaries is unavailable. Nevertheless, it is useful to at least speculate upon how possible project beneficiaries may fare.

15. The farming systems and crop management subcomponent is expected to affect 52,500 hectares (ha). Farm size has been roughly estimated in the three agencies as about 1.4 ha per household. That would indicate about 37,500 beneficiary households (or about 337,500 people⁶). After a full phasing in of benefits, incremental farm income for these households should increase by about PRs5,900 per year on average.⁷

16. For the irrigation development subcomponent (which also uses incremental crop income as its primary benefit), the area coverage is expected to be 6,644 ha. This translates into about 4,750 households as beneficiaries (or 42,750 people). Per household, incremental income will be about PRs54,900 per year after a full phasing in of irrigation effects.

17. The livestock and fodder management subcomponent is aimed at 46,000 households (414,000 people). The increase in milk production and animal live weight can be expected to bring in a modest PRs1,600 per household annually.

18. In the community forestry and range management subcomponent, the calculation of project beneficiaries is problematic. Some family seedling nurseries and small plantations will participate, but the bulk of the benefits are expected to accrue from larger department- and community-managed plantations. The environmental benefits will also be communitywide.

19. Similarly for the rural roads subcomponent, the number of benefiting households is difficult to estimate so a calculation of per household benefits is not very credible.

20. For the drinking water supply subcomponent, assumptions are made regarding the household coverage of the various types of scheme. By this calculation, about 17,850 households (or 160,650 people) will benefit from decreased water-fetching time and decreased health costs. Per household, this benefit is valued at about PRs8,400 per year.

21. **Infrastructure O&M as a Beneficiary Household Responsibility.** For most of the irrigation schemes and all of the drinking water supply schemes, the responsibility for O&M will lie with the beneficiary households. For the drinking water schemes (averaging the four types), O&M costs can be expected to be about 10% of the value of the annual household benefit. For irrigation schemes, average O&M costs will be about 12.5% of the financial benefits. In both cases, sufficient incentives should be provided for the beneficiary communities to make sure that their schemes continue to function well.

⁶ The TA survey indicated that household size is about 9. Some sources raise that to 10 persons per household. Nine persons per household is used here.

⁷ For financial returns to farm households, farm labor is counted as costless. If, in fact, incremental labor needs require an increase in hired labor or if some other opportunity cost arises for family members having to put more time into farming activities, this figure will be less.

22. **Employment.** Some of the Project's interventions can be expected to generate long-term incremental employment opportunities. An attempt to quantify this employment effect has been made. The agriculture program may generate 585,000 incremental labor days per year. Some of this labor will fall to hired workers, providing some opportunity for additional households to benefit from this subcomponent. Similarly, irrigation development can be expected to increase labor days on farms by 919,500. The forestry and range management subcomponent will hire an average of 123,500 labor days a year.

23. **Poverty Impacts.** Specific information about poverty in the FATA agencies is lacking. Estimates for Bajaur, Khyber, and Mohmand, indicate that the proportion of households living below the poverty line (currently estimated at PRs774 per person per) is over 60%. In some communities it may be as high as 80%. For such a high proportion of the population, a significant number of the poor in the target communities are expected to benefit from the Project. Also, given the wide variety of project interventions into the chosen micro-watershed locations, households below the poverty line will get a share.

24. Landholders will receive most of the benefits from the farming system and irrigation subcomponents. The project preparatory TA report indicates that the poor own approximately 57% of all farms (covering 34% of the farm area). For these two subcomponents, then, roughly one third of the benefits may go to the poor, and three fifths of the beneficiaries will be poor.

25. Livestock program beneficiaries may or may not own land. The poor are more likely to concentrate on less expensive livestock (goats, sheep, and chickens, rather than cows and buffaloes), but should benefit to some degree. Tribal communities running community forest plantations will share the profits among themselves. Employment opportunities may go largely to the landless and other poor.

26. Most members of the communities, including the poor, will benefit from the road and drinking water subcomponents. For the smaller drinking water schemes (hand pumps and dug wells, for example) efforts will need to be taken to keep the systems available to the full communities rather than only to the few households that have taken over the O&M functions.

Table A13: Project Level FIRR/EIRR, NPVs, Switching Values, SI, Sensitivity Analysis, and PIRs

Component/ Subcomponent	Farming System and Crop production	Livestock and Fodder Development	A+B	A + B + Range Management	Nursery Raising And Plantations	Irrigation	Link Roads	DWS&S Schemes	Microhydel	Overall Including Project Management Cost
	(A)	(B)	(C)	(D)	(E)	(G)	(H)	(I)	(J)	(K)
Base Case (Financial)										
Base case FIRR (percent)	57.8	68.5	62.9	57.9	13.0	25.5	26.0		41.8	22.7
Base case NPV @ 12 %	861.2	973.7	1,835.0	1,801.8	56.4	621.0	347.3		38.0	2,187.2
Base Case (Economic)										
Base case EIRR (percent)	41.0	55.6	48.7	44.9	11.8	17.4	18.5	44.0	28.0	26.6
Base case NPV @ 12 %	459.1	5.8	1,264.9	1,231.7	21.3	208.8	148.2	1,394.2	18.5	2,734.5
PIR	0.78	0.64	0.69	0.69	1.06	1.01	0.88	0.68	0.41	0.44
Switching Values										
Decrease in benefits (percent)	79.7	87.0	84.2	82.0		32.9	31.8	71.4	73.6	58.1
Sensitivity Index	1.3	1.1	1.2	1.2		3.0	3.1	1.4		1.7
Increase in costs (percent)	392.5	668.8	532.7	455.2		49.0	46.6	250.1	279.2	138.6
Sensitivity Index	0.3	0.1	0.2	0.2		2.0	2.1	0.4		0.7
Simultaneous change in percentage	66.2	77.0	72.7	69.5		19.7	18.9	55.6	58.3	40.9
Sensitivity Analysis										
10 % decrease in benefits	38.2	51.8	45.3	41.7	11.2	15.9	16.5	39.8	15.2	24.4
20 % decrease in benefits	35.2	47.8	41.8	38.5	10.4	14.2	14.5	35.5	12.0	22.1
30 % decrease in benefits	32.1	43.7	38.2	35.1	9.6	12.5	12.4	31.2	8.7	19.6
40 % decrease in benefits	28.8	39.3	34.4	31.5	8.6	10.7	10.2	26.8	5.5	17.1
50 % decrease in benefits	25.3	34.7	30.2	27.7	7.4	8.6	7.8	22.3	2.2	14.4
10 % increase in costs	38.5	52.1	45.6	42.0	11.2	16.0	16.7	40.1	17.1	24.6
20 % increase in costs	36.2	49.1	43.0	39.6	0.8	14.8	15.2	36.9	15.7	22.8
30 % increase in costs	34.3	46.5	40.7	37.4		13.7	13.9	34.2	14.3	21.3
40 % increase in costs	32.6	44.3	38.7	35.6		12.8	12.7	31.8	12.9	20.0
50 % increase in costs	31.0	42.2	36.9	33.9		11.9	11.7	29.7	11.4	18.8

DWS&S = Drinking Water Supply and Sanitation, EIRR = economic internal rate of return, FIRR = financial internal rate of return, NPV = net present value, PIR = poverty impact ratio, SI = sensitivity index.

Source: Asian Development Bank estimates.

GENDER STRATEGY AND PLAN

1. Women in the Federally Administered Tribal Areas (FATA) play a dominant role in running the household, rearing and guiding children, managing household finances, and providing much of the labor for agriculture and animal husbandry. They do not normally have a public role, particularly in interactions with the broader society. The federal and provincial governments recognize the importance of addressing poverty, especially as it affects women. Women's inclusion in project activities and surveys from the earliest days and early discussion with community elders over including them in project benefits will assist communities to focus on problems that especially affect women, such as water availability and small-scale income generation. Too overt a focus on women's programs and women's issues can generate hostility within communities where elders perceive proposed gender programs as a potential corrupting threat to the local social and cultural fabric. In the event such a problem arises, it could lead to rejection of all project activities until community confidence revives. The threat will be highest at the early stages of implementation, but experience in other conservative areas of Pakistan, like Dir district, demonstrates that a patient and considered approach does result in increased economic activity by women.

2. Gender inequality and discrimination is a common experience of women in FATA, as is true for other areas of Pakistan. Gender-related indicators show that the social, legal, and political status of women is lower than in the rest of the country. As compared with the 31% female literacy rate in Pakistan, the rate in FATA is only 3%. In many places it is 0%. According to the second phase of the midterm review of performance indicators for the Social Action Programme, 1991–1999, the gross mid level enrolment rate in FATA is only 15 % and for girls it is only 2%. The same report states that girls make up only 5% of total middle school enrolments in FATA. Only 5% of pregnant women had a prenatal consultation, and qualified staff attended 8% of births. The utilization rate of basic health units and mother and child health centers, and use of contraceptives remain minimal. As compared with 77% of the population in Pakistan with access to clean water, in FATA only 16% have such access.

3. The Government strategy to improve the status of women in FATA is to invest primarily in education and health. In the 2004–2005 Annual Development Plan for FATA, the Government has considerably increased investment in these sectors and taken special measures to improve working conditions of women staff in the health and education sectors. In line with the Government focus, the Project includes considerable investment in the drinking water sector and proactive gender-specific measures to align resource allocation and institutional arrangements in green sectors as well. To ensure women's access to services provided under the Project, gender mainstreaming will be the key strategy to integrate gender equality perspectives into all project components, implementation arrangements, consulting services, and the loan agreement. The strategy will be implemented through the key actions and targets presented in Table A14.

Table A14: Components and Targets for Gender Strategy

Component	Actions and Targets
Project Components	<ul style="list-style-type: none"> Engendering planning and resource allocation processes by allocating 33% gender-specific targets in annual work plans for components involving direct benefits to women Proactive efforts to ensure participation of women in project activities, particularly of vulnerable women and widows Gender-disaggregated progress reporting across the project sectors and components to monitor gender equality in project results and achievements Advocacy campaigns for promoting gender and development objectives of the Project
Implementation Arrangements	<ul style="list-style-type: none"> Placement of gender specialists in the PMU and PIUs to mainstream a gender equality perspective in all project activities, particularly support for line agencies in gender planning, implementation, and monitoring: <ul style="list-style-type: none"> (i) one senior gender adviser in the PMU; and (ii) one gender specialist in each PIU Placement of female technical staff in line agencies and provision of professional training for them from recognized training institutes to ensure service delivery to rural beneficiaries. The staff will include <ul style="list-style-type: none"> (i) one female veterinary officer and 2–3 livestock assistants per agency in the livestock department in each agency and their training at a recognized livestock extension institute such as Animal Husbandry In-service Training Institute; (ii) one female forester and 6 female forestry extension workers in the forest department in each agency and their professional training at a recognized forestry extension institute such as Sarhad Forest School; and (iii) one third of community mobilization staff will be women Provision of additional office spaces for female staff in the livestock department at the agency Establishment of women staff hostel in each agency
Technical Support under Consulting Services	<ul style="list-style-type: none"> Regular technical support for gender assessment, planning and performance auditing, and capacity building under local service contracts will include <ul style="list-style-type: none"> (i) gender disaggregated baseline surveys under the performance review audit contract; (ii) performance audit of gender-specific activities under the Project, identify key issues, lessons learned, and required follow-up actions in the 6 monthly and yearly reports produced under the performance review audit contract; and (iii) training for female and male staff of the PMU, PIUs, and line departments in gender assessment and planning concepts and tools under the community mobilization and training contract
Assurance by Government in Loan Agreement	<ul style="list-style-type: none"> Assurance by the Government in the Loan Agreement that based on satisfactory performance, female technical staff of line departments will be regularized after project completion, and recurrent costs related to their salaries and other support will be incrementally assumed by the Government on the revenue side.

PIU = project implementation unit, PMU = project monitoring unit.

Source: ADB mission.

SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

A. Linkages to the Country Poverty Analysis

Is the sector identified as a national priority in country poverty analysis?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sector identified as a national priority in country poverty partnership agreement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>Contribution of the sector/subsector to reduce poverty in Pakistan:</p> <p>Farming is the predominant source of livelihood in the country as more than 70% of rural households are engaged in this profession. Overall, about 50% of the national labor force is employed in agriculture and its related fields. In the federally administered tribal areas (FATA), about 95% of the farms are less than 5 hectares (12 acres), encompassing about 57% of the area. Farmers operating 1 hectare or less (2.5 acres) make up about 57% of all farms and own about 34% of the farm area. The average farm size is about 0.9 hectare. About 99, 95, and 56% of the farm area is cultivated in Bajaur, Khyber, and Mohmand agencies, respectively. The cultivated area in Khyber Agency is low, mainly due to rain-fed conditions as only 4.2% of the farm area is irrigated. About 20% of the farm area is irrigated in Bajaur Agency, the highest in the project area. The small landholdings inhibit farmers from investing in modern techniques, hence, the productivity levels are low and a great potential exists for increasing farm incomes in the project area. The natural resource base of Bajaur and Mohmand agencies is not only large but also diverse, creating opportunities for residents to generate high incomes from regular cash crops and off-season vegetables. On the other hand, Khyber Agency is predominately rain-fed, therefore, residents rely more on business and employment. Furthermore the agency is close to Peshawar, the urban center and capital of North-West Frontier Province, and people have more opportunities in employment and business. The bulk of the goods traded under the Afghan Transit Trade Agreement, means goods for Afghanistan are smuggled back to Peshawar and the rest of the country through Khyber Agency, creating employment opportunities.</p>			

B. Poverty Analysis

Targeting Classification: Targeted Intervention

What type of poverty analysis is needed?

The official Pakistan poverty threshold level is PRs774^a per capita. Rural poverty is estimated as 38.7%, which is considerably high than urban areas (22.4%). The decrease in poverty for 2003 resulted from macroeconomic stability and a near elimination of external account vulnerability resulting in a growth rate of 5.1% in 2003 as compared with 3.4% in 2002 and 2.2% in 2001.

The project agencies of Bajaur, Khyber, and Mohmand are the poorest in the FATA. A detailed socioeconomic study of the project area (Bajaur, Khyber, and Mohmand agencies) was carried out during the project preparatory technical assistance to understand the realities and provide a basis for plans and designs for the Project. The socioeconomic and poverty assessment is based on (i) review of secondary data, (ii) household surveys, (iii) participatory poverty assessment, and (iv) needs assessment. Secondary information is available on demography, health, educational, and physical infrastructure facilities; farm and cultivated area; and farm size and ownership distribution. Household surveys were designed to collect household-specific information, such as (i) composition of the farm family; (ii) land ownership and tenure; cropping pattern; and yields of major crops, fruits, and vegetables; (iii) cultural practices and input use and their prices; (iv) enterprise budgets for crops and livestock; (v) access to services like agricultural extension, health, educational facilities, and credit; (vi) off-farm income; (vii) household expenditure pattern; (viii) perceptions regarding the constraints and opportunities in increasing crop and livestock productivity; (ix) type and nature of sanitation conditions; and (x) economic activities by women. In each household both male and female respondents from each family were interviewed.

About 60% of FATA's population is poor, with levels of over 80% in some villages, based on household income, self-assessments, observation of degraded natural resources, access and use rights, availability and access to services, and basic infrastructure. This estimate almost certainly understates real poverty in the more isolated communities. Using information from participatory self-evaluations, even the better-off members in communities are barely above the Government's poverty threshold. The region has an aggregate literacy rate of just over 17%—only 3% for females—with an estimated primary school participation rate of 41%, well below the national averages of 45% literacy and 77% participation. A mere 54% of the population has access to clean drinking water, as compared with 75% for the settled districts of neighboring North-West Frontier Province.

Factors underlying poverty in FATA include (i) historical political and social isolation; (ii) a legal system reliant on

executive and judicial authority administered through civil servants preferring to maintain the status quo; (iii) poor quality and coverage of institutions responsible for the provision of basic services such as health, education, communications, and productive enterprises; (iv) social practices that preclude participation in economic life by women; and (v) lack of effective institutions for skill training to enable the labor force to shift from low productivity to high productivity sectors. Agricultural skills are poor with low productivity; natural resource management is inadequate with increasingly degraded lands. Few alternative employment opportunities are available outside of agriculture. Attitudes within the tribal areas coincide with increasing government support for greater participatory involvement by the poor. Radical changes in representative government may occur within the next few years, which provide expanded opportunity for the poor to seek improved livelihoods through participation in community planning, greater engagement with government service providers, training, and credit use. Currently, contact between government service providers and communities are inadequate, and constrained by lack of resources and relevant programs.

For most people, the environment is harsh, with few resources not already allocated. Economic growth and economic opportunities are few. Water scarcity is an overarching constraint. A large number of people face great hardship in collecting water from remote areas. Some communities are using donkey carts and tractor tankers for bringing water from remote sources. In other cases, women and children are responsible for collection of water from springs, communal taps, or dug well usually located at a distance from the community. Scattered evidence from some parts of the agencies suggests that rural households spend between \$0.5 (PRs30) to \$1.5 (PRs100) on a daily basis to ensure water supplies for domestic consumption. Likewise, in the irrigation subsector, the scarcity of both ground and surface water combined with power shortages remain the biggest constraint to development of irrigation. Low awareness about rainwater harvesting and its limited promotion by the technical line agencies is another factor, which has prevented a meaningful utilization of the single biggest source of water in the project areas.

Large areas in the three tribal agencies are still inaccessible and in desperate need of road links to recently constructed arterial roads, and to open up the economic potential and improve access to social services. The long years of neglect and financial stringency have caused deterioration of the existing road network with direct consequences for the local economy and service provision. There is clearly an urgent need to focus on the construction of new roads and tracks in selected areas as well as the upgrading of priority existing roads in all three agencies.

To address this situation, the Project seeks to (i) improve the living conditions of the rural poor, especially women; (ii) boost agricultural production and incomes of the population living in poverty; (iii) improve the status of women by targeting them for special attention in a culturally acceptable manner, and provide training and support to income-generating activities; (iv) improve the resource base by rehabilitating and extending irrigated areas and social forestry; (v) open the inaccessible areas, and improve access and marketing of the rural communities through improvement and construction of main and feeder roads; and (vi) establish and strengthen community organizations as the institutions through which technical and social services can be provided to target groups on a sustainable basis.

C. Participation Process

Is there a stakeholder analysis?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Is there a participation strategy?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

D. Gender and Development

Strategy to maximize impacts on women:

Women are the most disadvantaged group in FATA, with few economic resources and low social status. Female literacy is a 3%; overall, male literacy is scarcely above 17%, well below the norm for Pakistan. Women's mobility and participation in mainstream development activities is traditionally restricted by the dominant patriarchal tribal system. The Project has prepared a gender action plan for enabling them to participate in the Project's mainstream development activities. The process must be guided by social traditions; over time, women are expected to improve their social, economic, and political standing in society.

Has an output been prepared?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
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E. Social Safeguards and Other Social Risks^b

Item	Significant/ Not Significant/ None	Strategy to Address Issues	Plan Required ^c
Resettlement	<input checked="" type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	Project activities are unlikely to bring about significant resettlement. Where infrastructure construction or other project activities related to land use require resettlement or land acquisition, the Project will follow transparent procedures outlined in the resettlement framework defined for full or short resettlement plans. These will be prepared for relevant subprojects during project implementation.	<input checked="" type="checkbox"/> Full <input checked="" type="checkbox"/> Short <input type="checkbox"/> None
Indigenous Peoples	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None	Although known as tribal, the term defines geopolitical status not separateness based on social criteria. The people of FATA are part of Pakistan's mainstream social, cultural, and economic systems. They are not culturally secluded tribes, who may be adversely affected by the Project.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Labor	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None	Implementation depends on community commitment to provide voluntary unskilled labor and on adequate technical skills available in local markets. Sufficient unskilled and semiskilled labor is available within the project area, and thus, the Project will not have difficulty in finding labor.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Affordability	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	A community facilitation plan was prepared to actively involve local communities in project-supported development activities. Local communities will form user groups or voluntary associations like project committees to ensure active participation in project activities. Their participation will be mostly in the form of sociopolitical support, organizational activities such as meetings/decision making, contribution of unskilled/semiskilled labor and local materials, and only minimally in the form of cash.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Other Risks and/or Vulnerabilities	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	Women head 5-7% of the households. These women, mostly widows, are among the poorest, and require special focus by project implementation staff, as set forth in the gender action plan.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

^a Based on the Economic Survey, 2002–2003, Finance Division, Economic Advisors Wing, Islamabad, June 2003.

The poverty level for 2002–2003 was PRs749.56, the current rate would be PRs774, based on the rise in the CPI.

^b Summary Poverty Reduction and Social Strategy criteria for assessing the significance of social issues available at ADB. 2001. *Handbook for Poverty and Social Analysis*. Manila.

^c A plan will be required at the design stage if any of the potential issues are found significant.

ASIAN DEVELOPMENT BANK FINANCING OF OPERATION AND MAINTENANCE

1. Operation and maintenance (O&M) of Asian Development Bank (ADB)-financed and other aid-financed projects has always been a concern for ADB because of the shortage of government funds and/or the inability or unwillingness of beneficiaries to pay for such activities.
2. Under the Project, beneficiaries will pay for O&M on an increasing percentage basis of subprojects turned over to them at the completion of construction—starting at 0% in year 1 and escalating to 100% in year 5. The program only covers those subprojects that are the responsibility of the direct beneficiaries; such as drinking water tubewells or shallow dug wells, small irrigation schemes and ponds, and other such subprojects.
3. The Government will be responsible for O&M of subprojects under their control; such as roads, storage dams, or other larger subprojects that are too large to be managed by the beneficiaries.
4. ADB proposes to assist in financing O&M for the turned over subprojects based on the following:
 - (i) During development of the design and cost estimates of each subproject, a detailed annual estimate will be made of the operation (such as for the purchase of diesel fuel) and maintenance costs (such as repairs of pumps, gates, etc.). Other minor costs such as desiltation of canals, repair of bunds, etc. will remain the responsibility of the beneficiaries without pay. A revised cost estimate will be made for each subproject on an annual basis based on lessons learned the previous year.
 - (ii) The beneficiaries and executing agencies line departments at the agency level will establish a jointly operated savings account in the names of responsible parties from the village organization and executing agency concerned. The three agencies gave assurance that this could be done. On an annual basis, funds will be directly deposited into the joint savings account through the Project's imprest account and from the beneficiaries based on Table A16. Operating procedures will be established by the project management unit during implementation by the two parties and adjusted as required during implementation. The project implementation unit will maintain accounting and transparent records for all withdrawals from the account and receipts of purchases/repairs that are made for the facility.
 - (iii) The percentage of financing would be based on the schedule in Table A16.

Table A16: Percentage of Financing

Year Following Completion of Construction	% of Financing	
	ADB	Beneficiaries
Year 1	100	0
Year 2	75	25
Year 3	50	50
Year 4	25	75
Year 5	0	100

ADB = Asian Development Bank.

Source: Asian Development Bank estimates.