



Indus for All Programme WWF - Pakistan Programme Brief - April 2007 - June 2010

Indus Ecoregion

The Indus River extends from the Himalayas to the Arabian Sea, with unique biodiversity and socio-economic features, covering mountain, plain and deltaic environments. The Indus Ecoregion partially covers 18 districts of Sindh. The major habitats of this Ecoregion comprise of the main river course, freshwater lakes, the Delta, riverine forests, brackish and salt lakes and mangrove forests. These habitats support various ecosystems with their own unique biodiversity. The Indus is home to over 20 million people. The traditional means of income in this region are agriculture, livestock, forestry and fishing. The level of poverty has doubled over the years and the region has also been subjected to drought which has greatly stressed the area's natural resources. Taking these reasons into consideration, the Indus for All Programme has been developed around the poverty environment nexus.

Indus Ecoregion Strategy

The following are objectives of the 50 year vision of the Indus Ecoregion Programme.

1. Maintenance of a viable population of selected species.
2. Representation of all distinct natural habitats within protected networks with a size large enough to be resilient to large-scale disturbances and long-term challenges.
3. Maintenance of the ecological and evolutionary processes that sustain biodiversity and its productivity.

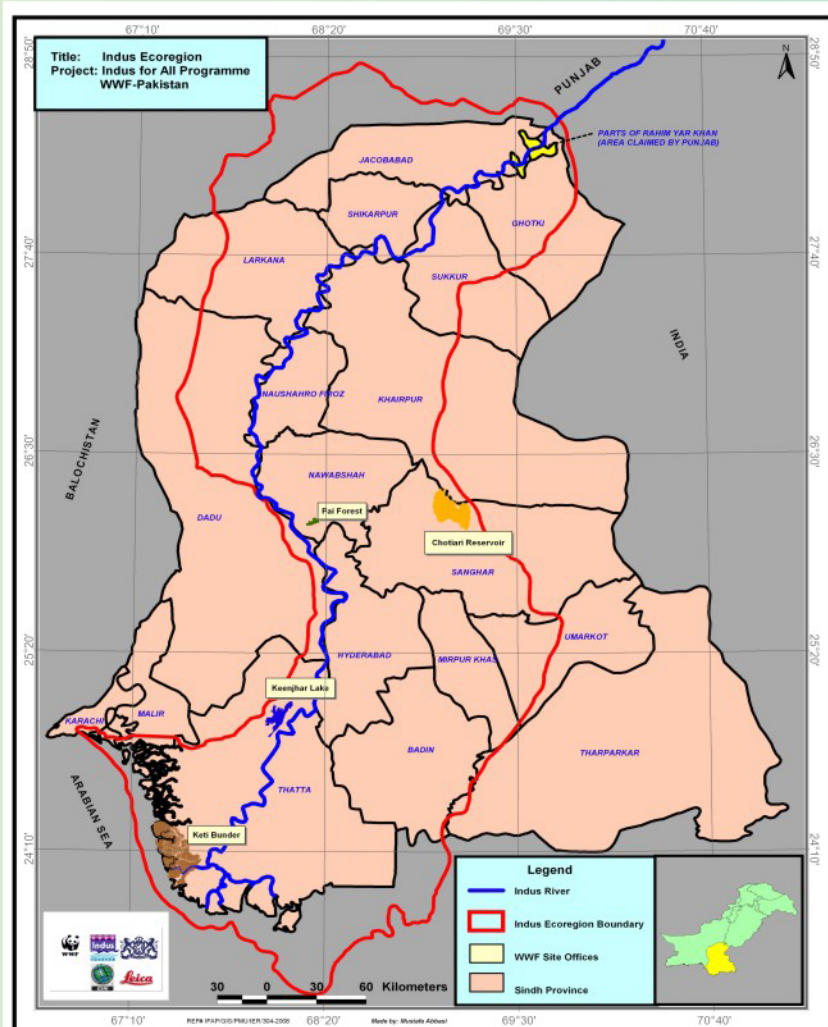
Introduction to the Indus Ecoregion Programme

The Indus Ecoregion has been ranked amongst the forty priority ecoregions of the world. In collaboration with the Sindh government, WWF-Pakistan has developed a 50 year ecoregion plan including a vision and identified 14 priority sites within the region. The 'Indus for All Programme' is the first five-year (April 2007 – March 2012) implementation phase at four of these sites: Keti Bunder Mangrove forest and Keenjhar freshwater lake in Thatta district, (the latter is located on the Indus flyway and has been classified as a Ramsar site), Chotiari Reservoir in Sanghar district, and Pai forest in Shaheed Benazirabad district with financial support from The Embassy of The Kingdom of The Netherlands (EKN), which has been instrumental in the long term development of the Indus Ecoregion Programme.

Programme Objectives

The overall objectives for the first phase (initial 5 years) of the 50 year Vision are based on natural resource management in the Lower Indus Basin to improve livelihood and sustainable development of the region.

1. Community-based Natural Resource Management (NRM) in four priority areas contributes to improved livelihoods.
2. Improved natural resources and livelihoods through mainstreaming of poverty-environment linkages at policy, planning and decision-making levels.
3. Improved institutional capacity and awareness for sustainable management at various levels.
4. Improved alignment and collaboration for stakeholder interventions





Major Achievements

The Programme is now in its fourth year of implementation. In the first year, detailed ecological and socio-economic assessments of all four sites were carried out after which the main activities were planned and initiated. The objectives of the Programme have been divided into themes such as empowering communities and community livelihood development, natural resource management, alternative energy, communication, education and public awareness, supportive policy for conservation and development, poverty environment linkages and providing seed money to conservation projects through the Partnership Fund. A summary of each is given below:

Empowering communities and community livelihood development

The Programme is working with forty one Community Based Organizations (CBOs) on the basis of a social mobilization strategy and a concept that envisions empowerment and maturation of these grass-root organizations. These CBOs have been given the tools for sustainable development and conservation initiatives through trainings, workshops and seminars conducted by the Programme. Their capacity has been enhanced through various trainings in organizational management, proposal development, advocacy methods, monitoring of natural resources and exposure visits. The Programme has encouraged these CBOs to conduct monthly meetings and maintain records for future sustainability.

Table 1: Social mobilization					
Priority site	Teachers Training	MoUs with New CBOs	MoUs with Existing CBOs	Total CBOs in the Programme	CBOs Registered
Chotiari Reservoir	6	5	4	9	8
Keti Bunder	6	7	2	9	9
Keenjhar Lake	6	7	2	9	9
Pai Forest	6	7	7	14	14
TOTAL	24	26	15	41	40

Keeping CBOs and the general community in mind, the Programme has been committed to improving livelihoods of local communities by developing and implementing strategies for alternate livelihoods to generate income. Included in these plans are the vocational centres at each site, established for women with the aim to enhance their skill and provide opportunities to diversify their livelihoods and increase their household incomes. A major output of the Programme in 2009 has been the development of Livelihood Development Plans (LDPs) for four priority sites which cover thematic areas of fisheries, agriculture, livestock and rangeland management, cross-cutting (health and education) and womens livelihood. Intensive community participation has produced these livelihood plans. Implementation of these plans also started from the 3rd quarter of 2009. So far, the following interventions have been implemented:

Table 2: Implemented Intervention	
Priority Site	Implemented Interventions
Chotiari Reservoir	<ol style="list-style-type: none"> 1. Sustainable Livestock Management Training for CBO Members 2. Integrated fisheries development in villages of Chotiari area (improved platforms, ice-boxes, fish-seed release, training in aquaculture) 3. Household based handicraft enterprise for women 4. Livestock vaccination
Keti Bunder	<ol style="list-style-type: none"> 1. Fish cold storage tanks for Hajamro creek 2. Establishment of pen culture (fish pond)
Keenjhar Lake	<ol style="list-style-type: none"> 1. Sustainable livestock management training for CBO Members 2. Rearing of backyard poultry for women 3. Workshop on Keenjhar Lake 4. Establishment of fish corner at Hillaya Point of Keenjhar Lake 5. Training workshop on sustainable fisheries management 6. Home based small enterprise implementation
Pai Forest	<ol style="list-style-type: none"> 1. Increase Income of women through establishment of small enterprises selling materials used in handicrafts 2. Skill Development through establishment of vocational centre at village Mari Jalbani 3. Livestock vaccination 4. Marketing of Milk by establishing a chiller and selling point



Natural Resource Management

The Programme's achievements in Natural Resource Management (NRM) have been diverse. It has developed NRM plans for four sites and is in the process of implementing these plans. The plans for Keti Bunder and Pai Forest focus on forests as the main NRM components, while the plan for Chotiari Reservoir focuses on rehabilitating rangelands that have degraded due to the construction of the reservoir and fluctuations of water level. The NRM plan for Keenjhar Lake focuses on the fisheries sector and ways of improving other sources of livelihoods such as agriculture and lake-based tourism. Species recovery plans for Smooth-coated otter for Chotiari Reservoir and Hog deer for Pai Forest have also been developed.

The Programme has also initiated Better Management Practices (BMPs) for agriculture which cover farmer field schools, demonstrations and integrated pest management. Two BMP manuals on (wheat/vegetable and cotton) were published in 2009 which provide BMP guidelines in Sindhi. The Programme has also initiated natural resource-based enterprises in order to diversify livelihood opportunities available to the local communities by decreasing their dependency on natural resources. Table 3 below lists the NRM based interventions in the priority sites:

Table 3: Types of Intervention

NR based enterprises	<ul style="list-style-type: none"> • Growing vegetables by using pitcher-irrigation system at Chotiari Reservoir • Integrated aquaculture development at Chotiari Reservoir • Introduction of pen and cage culture for fish at Keenjhar Lake • Boat manufacturing workshop for safe boating at Keenjhar Lake • Establishment of community managed nursery at Pai Forest • Establishment of milk-chilling plant at Pai Forest • Boat engine repair workshop at Keti Bunder town • Fish pond culture at creeks at Keti Bunder
Implementation of NRM plans	<ul style="list-style-type: none"> • Reviewing, revising and updating the 1972 Wildlife Protection Ordinance to the Wildlife and Protected Areas Act 2010 • Scaling up of the BMP Programme at Chotiari and Pai Forest sites • Habitat rehabilitation at three sites • Scaling up of the alternate energy schemes (solar systems, wind turbines and biogas units) at four sites
Species Recovery Plans	<ul style="list-style-type: none"> • 1 Recovery plan developed for Smooth-coated otter (to be implemented at Chotiari Reservoir/Nara Game reserve) • 1 Recovery plan developed for Hog deer (to be implemented at Pai Forest)
BMP Programme	<ul style="list-style-type: none"> • Two sets of master trainers of farmers trained across four sites • Farmer field schools held for cotton and wheat at District Shaheed Benazirabad and Sanghar and vegetables at Thatta • Drip-irrigation systems installed at Keenjhar Lake, Chotiari Reservoir and Pai Forest • Manuals for cotton and wheat/vegetable developed and distributed

Alternative energy

To address the issue of reducing pressure on natural resources, the Programme has invested in various alternative energy schemes. It has successfully installed and explored the benefits of solar energy units at three of its sites ranging from 200 watts to 400 watts (centralised and household units). Also two hybrid system each has been installed at Keti Bunder and Keenjhar Lake. Another means of alternative energy explored is the installation of biogas units which not only produce gas that can be used for cooking and lighting purposes, but also produce fertilizer in the form of slurry. To curtail the dependence on natural habitats, energy plantations have been established at the priority sites. These plantations should ultimately meet local firewood and fodder needs decreasing the strain on neighbouring forests and rangeland. The table below represents the total number of alternative energy installed across the sites.

Table 4: Alternate energy schemes

Priority area	Biogas	Solar			Wind turbine	Energy plantation
		HH units	Hybrid units	Ctrl		
Chotiari Reservoir	14	16	0	3	0	5 acres
Keti Bunder	3	10	2	3	2	250 acres
Keenjhar Lake	6	10	2	3	2	0.5 acre
Pai Forest	6	0	0	1	0	Not applicable
TOTAL	29	36	4	10	4	255.5

HH = household, Ctrl = Centralized system



Communication, education and public awareness

The Programme is dedicated to involving and educating all stakeholders in environmental conservation and environmental sustainability. It is making tremendous efforts to educate a diverse group of individuals. It has engaged both print and electronic media through consultative workshops, journalists' trips to priority ecosystems, talk shows, documentaries, news coverage of activities and press releases. The Programme has established a forum of environmental journalists in the Ecoregion. To showcase its community based awareness raising activities the Programme is endeavouring to establish Conservation Information Centres at Keenjhar Lake and Chotiari Reservoir. The Programme regularly publishes quarterly newsletters produced, posters, brochures, fact sheets, flip charts and has recently completed a documentary on the Indus Ecoregion (Phase-I). The table below provides a quantitative summary of the Programme's environmental education and awareness outreach:

Table 5: Environment awareness outreach Programme

Priority site	Teachers Training	Nature Clubs	Sermons	Master training	NRM trainings	Resource user groups	Journalist exposure
Chotiari Reservoir	2	4	2	1	1	2	2
Keti Bunder	0	5	3	0	2	2	1
Keenjhar Lake	3	5	3	1	2	2	2
Pai Forest	2	7	3	1	1	3	1
International	0	0	0	0	0	0	1
TOTAL	7	21	11	3	6	9	7

Supportive policy environment for conservation and development

Since the Programme's goal is to reduce impact on natural resources and simultaneously address issues of poverty alleviation, a great deal of time and effort is invested in maintaining partnerships with the provincial government departments especially the Planning and Development Department (P&DD), Government of Sindh. In this regard the Programme's Policy Analyst is deputed at the P&DD. This has helped the Programme to become familiar with different departments of the Government of Sindh in general and P&DD in particular. The policy analyst is regularly engaged by the department in designing and executing different projects of the Government. A number of Memorandums of Understanding (MoU) have been signed by the Programme to ensure strengthening ties with various government departments, academic institutes and various other private organizations. The Programme is proactively improving relationships with government, public and private sectors to align actions for conservation and improving livelihoods. It focuses on relationship development through regular multi-stakeholder meetings and joint activities.

Friends of Indus Forum

The Indus for All Programme has established an advocacy platform called 'Friends of Indus Forum'. This forum acts as a policy watch-dog and brings together conservation activists, intellectuals and passionate individuals who want to collectively protect the natural heritage of the Indus Ecoregion. The aim of the forum is to address the diverse threats to the ecosystem whereby the survival of species is becoming increasingly difficult and in which people dependant on natural resources are pushed into poverty and despair. The forum meets regularly and hopes to serve as an advisory body to the Government of Sindh. The Friends of Indus Forum has an online or web-based link (<http://www.wfpak.org/foreverindus/friendsofindus/index.php>) to promote online interaction and healthy debates.

Poverty Environment Linkages

The Programme is involved in mainstreaming poverty-environment perspectives into the mandate of all policy level stakeholders by up scaling lessons from local levels to provincial and national levels. A major achievement of the Programme has been the completion of valuation studies covering all four sites and placing rupee values on five ecosystems, namely: deltaic, freshwater, rangeland, forest, and agricultural ecosystems. Another study has been the Poverty Environment Linkages and Indicators study which examines the relationship between poverty and environmental stress. A total of 14 indicators are constructed and tested in the study after reviewing 20 linkages across four Programme sites.

Partnership Fund

Contributing to the long-term vision of the Indus Ecoregion Programme, the Partnership Fund has been established as a subsidiary of the Programme to enable stakeholders to implement projects that address emerging environmental concerns. The Partnership Fund provides financial support to government line departments, registered NGOs/CBOs, academic and research Institutions for projects in areas like: management of natural resources, biodiversity conservation, sustainable livelihoods, etc. To date the Partnership Fund has carried out three rounds of funding, one in 2008 and two in 2009 and has awarded thirty-seven grants.

Further information on the Indus for All Programme is available through the project website www.foreverindus.org

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