

## Concept Proposal Pakistan Spate Irrigation Network

### Spate Irrigation in Pakistan

The area under spate irrigation (called *rodh kohi* in NWFP and Punjab, *sailaba* in Balochistan and *nai* in Sindh) in Pakistan is very substantial and by most reliable estimate it is 1.4 M ha – or equivalent to 9% of the entire irrigated area in Pakistan. It covers the entire or major portions of the cultivable land in the districts of DI Khan, Tank, Kohat, Laki Marwat, Bannu (NWFP), DG Khan, Rajanpur, Mianwali (Punjab), Kacchi, Sibi, Jal Magsi, Qila Saifullah, Lorelai, Musakhel, Barkhan, Las Bela (Balochistan), Dadu, Larkana, Jamshoro, Karachi and Thatta (Sindh).

This 1.4 M ha is also the area where there is widespread poverty, probably more than any other single area in Pakistan. This is related to the uncertainty that is inherent to spate irrigation, the absence of reliable drinking water supply and the marginal location of spate areas in all four provinces. Periods of drought are part of spate irrigation, they cause hardship and even the temporary depopulation of areas. The spate areas have high infant mortality, low literacy and school attendance and tensions between landlords and (hereditary) tenants.

In spite of the size of the area under spate irrigation and its importance in poverty alleviation, the area is very much neglected and almost invisible in programs and policies of government and civil society. There has in several parts been a steady deterioration in water management, bringing the areas in a downward spiral. This deterioration is manifest in the construction of unauthorized water diversions, the silting up of the flood channels and the development of gullies distorting the hydraulics. In addition there has been a deterioration in forestry resources, rangelands and livestock material.

There are however considerable opportunities to revive/ improve the productivity of the spate irrigated areas. Crop yields of the main spate irrigated crops in Pakistan (sorghum, millet, wheat, pulses) are low compared to international figures, whereas improved grain storage can reduce losses that are now at 6-20%. The spate areas are probably the most suitable area in the country for the cultivation of oilseeds. In addition there are a number of very promising crops to be developed by demonstration and improved marketing and processing, such as guar and sesame. Then there are promising minor crops – from area-specific vegetables and medicinal plants to truffle mushrooms. There is scope to improve forest production – either along river banks or in special fenced plots in the outwash areas. Livestock is an important and stable source of income and spate areas have produced important species, such as Bagh Nari, Sindhi Red Bull and Loghari Goat and Sheep. There is considerable potential scope to improve livestock production by improving indigenous stock, improved fodder and feed (such as molasse blocks and urea treatment) as well as rangeland management. Much more can be done to ameliorate drinking water supply by improved clay or plastic lined drinking water ponds for humans and livestock. Water management has been problematic. There has by the introduction and subsequent withdrawal of free/ subsidized earth moving equipment, resulting in a decline of local institutions. At the same time the effective co-management system of local government (under Revenue Department) and farmers that ensured the regulation and timely construction of the earthen structures (*kamara*) has eroded for a number of reasons, one of which is the changed powers of local government under devolution. As mentioned the basis for – water management has been in decline but there can be many low cost high impact improvements, such as reinforced earthen diversion bunds, fixed canal intakes, bed sills, gully plugs, field intakes and overflow structures . A

number of these interventions have been undertaken recently in some areas at considerable benefits.

### **Pakistan Spate Irrigation Network**

The Pakistan Spate Irrigation Network will bring together the current knowledge and experience in spate irrigation, connect the different organizations working in spate irrigation and promote and lobby for adequate and appropriate attention to spate irrigated livelihoods.

Its functions would be:

- Advocacy and promotion of adequate support activities and policies
- Exchange information on the improvement of livelihoods in spate irrigated areas through a wide range of interventions: improved water management, local engineering, livestock/ domestic water supply, crop management, livestock and forestry and others
- Initiate activities and initiatives to support the development of spate irrigation areas and build a wider knowledge base. An example of activities that could be initiated by the Pakistan Spate Irrigation Network is given in annex 1.

The Spate Network would be a facilitating mechanism – not an implementing body. It will bring together and initiate. Its members can be NGOs, local governments, Rod Kohi Department staff, local experts, farmers, research institutes and academics. A start has been made with 20 members enlisted. Administratively the Network would best be hosted by a national NGO working in several spate areas (SPO for instance) or a long-term project organization (PLI for instance).

The set up should be modest – starting with a small core support secretariat (part-time chair and full-time secretary) and working from one area first but linking to many others. The activities in the first period would be:

- Inventory of organizations/ key persons working in spate irrigation and respective strength and special interests – building up membership in the process
- Mini-workshops in different Provinces to generate interest
- Dissemination of material – this can start with recent Spate Training CD (translated) and popular book that is under preparation
- Publications of small write up in popular media describing status and potential of rod kohi/ nai/ sailaba areas.

Subsequently the Network could:

- Actively initiate activities in support of Spate Irrigation (see for instance annex 1)
- Organize trainings for NGOs, local governments and others
- Undertake advocacy activities – presentation and policy briefings
- Documentation

The Pakistan Network would be part of the international Spate Irrigation Network, that is in existence since 2002 and has 140 members. The Spate Irrigation Network operates a website [www.spate-irrigation.org](http://www.spate-irrigation.org) , that attracts 1500 visitors/ month. The website contains a library with grey material. The Spate Irrigation Network has also prepared and updated a knowledge base on spate irrigation. Currently the network is hosted by MetaMeta (the Netherlands). Apart from Pakistan, the Spate Irrigation Network has a country chapter in Yemen, since September 2006, hosted by the Water and Environment Centre of the University of Sana'a. The Yemen country chapter has 30 members at present. The link with the International Spate Irrigation Network would serve to exchange experiences (for instance between Agricultural Research Institutes working on

different countries; or on local engineering techniques) or materials (models of equipment, seed material, etc).

## Annex 1

	<b>Activities to be initiated by the Spate Irrigation Network</b>
	Introduce and support curricula on Spate Irrigation in Universities/ Agricultural Colleges, especially Tando Jam, Mehran University, Peshawar University, Taxila University, Quetta Agricultural College, Attock College
	Policy workshops on support to spate irrigation area with Provincial and federal Governments
	Workshop on Water Governance in Rodh Kohi discussing role and support mechanisms of Provincial and District Government bodies in NWFP
	Intensive training/ information sharing workshops with NGOs and local governments in different provinces on spate irrigation and discuss opportunities for new improved activities
	Training workshops with national consultants on locally appropriate engineering improvements in spate irrigation
	Publication on Practical Improvement Series based on on-going work of PARC WRI and PLI and others
	Engineering design review – identifying plan for appropriate water regulation measures in selected spate rivers
	Action research on spate water reallocation in Vihoa, following CRBC
	Action research on improved soil water management and sorghum following Eritrean experience
	Action research on use of presmat in Rodh Kohi for moisture conservation
	Action research on rangeland protection in spate areas including inventory of ongoing activities
	Development of trainings for local female livestock experts
	Trainings for bulldozer operators and farmer overseers
	Experience sharing workshop with PHED and local governments on improved drinking water ponds in spate areas, preparation of guidelines and standard designs on drinking water ponds
	Documentation of marketing and processing opportunities for selected minor crops (mushrooms, guar, minor vegetables) with help of ILEA
	Documentation of medicinal plants through local women specialists