



New Water Rights for Basin Management and Inclusivity in Spate Areas - Pakistan

The challenge

Spate irrigation is a unique water resource system that makes productive use of short duration floods in dry river beds for the cultivating of crops. It is common in Pakistan, covering an area of 1 Million ha. Farmers in the spate systems have to cope with a large range of floods that vary in volume and timing. In these systems, changes to river beds and sedimentation levels take place and river course alterations are unavoidable, making these systems unpredictable.

In the face of increased water scarcity, the potential for inclusive growth that is offered by seasonal floods needs to be harnessed more than ever. Spate systems are largely forgotten and ignored, in spite of their long history, but they offer an important potential for economic growth and inclusive development.



Figure 1: Farmers preparing the fields for the new round of crop cultivation.

Our approach

The Newarbi project aims to optimize the current spate systems by revising the water distribution rules in those dry river systems that have benefited from technical interventions in the headworks. It is envisioned that as through the project the systems are brought up to date after changes made to main

headworks and resource use, thereby optimizing their overall productivity and promoting their inclusivity, especially for the weakest downstream users.

In addition, a whole range of improvements – related to crop agronomy, livestock keeping, small mechanization and water storage, based on proven experiences elsewhere in similar water systems is being introduced through farmer groups.

The goal

There is a need for a good mix of expertise related to both social change processes and concrete action in the field of water management rules and regulations and improved practices. This requires a partnership of organisations that each offer their own specific value for the actions to be made in Pakistan.

The project focussed on goals through three Work Packages:

1. Improved and equitable utilization of productive floodwater

Project name	New Water Rights for Basin Management and Inclusivity in Spate Areas
Project region	Pakistan (Balochistan and Sindh provinces)
Financed by	Ministry of Foreign Affairs of The Netherlands, through the Sustainable Water Fund (FDW)
Implemented by	GOPA MetaMeta, Strengthening Participatory Organisation (SPO) and Research and Development Foundation (RDF)
Duration	01/2019 – 07/2025
Budget	1.308.655 Euro of which 850.000 Euro subsidy
Partners	Sindh Irrigation and Drainage Authority (SIDA) and Irrigation Department of the Government of Balochistan



2. New livelihood opportunities through improved land and water management practices
3. Out scaling and dissemination of recalibrated water distribution rules and livelihood opportunities

Key activities

Within the three work packages the project implemented a number of key activities:

- The formation of Joint Management Committees (JMCs) and Farmer Networks
- Maintenance of infrastructure through desilting and rehabilitation of embankments and diversion structures
- Construction of drinking water ponds + shallow wells to support the access to water for domestic uses.
- Supporting income generating activities
 - o Livestock (introducing varieties and vaccination campaigns)
 - o Pickle making
 - o Solar pumps
- Flood response in 2022, distribution of emergency kits and water treatment options.
- Exposure visits and exchange events between the two project areas.
- Introduction of new crop varieties
- Storage options for harvest, to reduce post-harvest losses and maintain seeds for the new season.
- Dialogues on flood management to reflect on the response to the 2022 floods and lessons to prevent future damages.
- Upscaling through new projects including capacity development initiatives, development of manuals and investment guides.
- Publications such as blogs, practical notes, videos and a photo book.

Key highlights

The following major achievements were reached during the project:

- ✓ Establishment in Joint Management Committees (JMCs) and Farmer Networks in both project areas, covering a total of 150.000+ ha.
- ✓ Desilting of canals and rebuilding of embankments, bringing water to an additional 15.000ha of cropland in the downstream parts of the Kacchi plains.
- ✓ Introduction of several livelihood opportunities, with a focus on improving the socio-economics of rural households with a focus on WASH and food storage and processing methods.
- ✓ Increased visibility of Spate Irrigation in Pakistan through presentations and seminars.
- ✓ Knowledge exchange among farmers of both project areas, including an exchange of best practices, crop varieties and livestock.
- ✓ Multiple follow-on projects formulated and integration of Spate Irrigation in provincial policies.



Figure 2: Embankment construction through the Joint Management Committee

Examples of our success

Through the work and network on the ground, the project was able to respond to the major flooding of 2022, through the assessment of damages, but also through initiatives to make seeds available to the flooded areas, to allow the farmers to utilize the additional water.

The JMCs and Farmer Networks played a major role in providing the farmers with a voice and in preventing and resolving conflicts over land and water resources. Also they have become a more equal partner to the landlords, and are included in discussions.



Figure 3: Group of women trained on pickle making, one of the income generating processing methods introduced through the project.

Voices from the field

"In the inception phase of the project, I found out how farmers from other countries apply innovative methods in spate irrigated areas, while farmers from Nai Gaj stick to old methods. Therefore, I feel the need to work proactively on this project, so that farmers in Nai Gaj can I am optimistic that this project will help farmers in Nai Gaj and beyond to fully enjoy spate irrigation systems benefits."

Gulsher Panhwer (Team Leader RDF)

"I belong to a rural area in Balochistan, where spate irrigation has already been practised for centuries. Irrigated fields, after the rains, are a source of happiness for all of us in the area. However, more work is needed to improve the system."

Abdul Salam (Sociologist and Team Leader, SPO)

Info: <https://floodbased.org/projects/newarbi/>

Main challenges

During the 7 years in which the project was implemented, three main challenges were experienced.

A first challenge was the Covid pandemic and the government response to fight the effects, which happened at the same time as the desert locust invasions, which threatened the harvests. As project, the approach was to adopt flexible planning and in the case of Covid, increase the emphasis on access to drinking water and hygiene, which was supported by RVO through additional funding.

A second major challenge were the floods of the 2022 season, which destroyed significant parts of the spate irrigation infrastructure. At the same time the additional moisture availability led to a situation where larger areas could be cultivated, the project responded to this through the unlocking of additional funds through partners for the purchase and distribution of seeds suitable for the spate context.

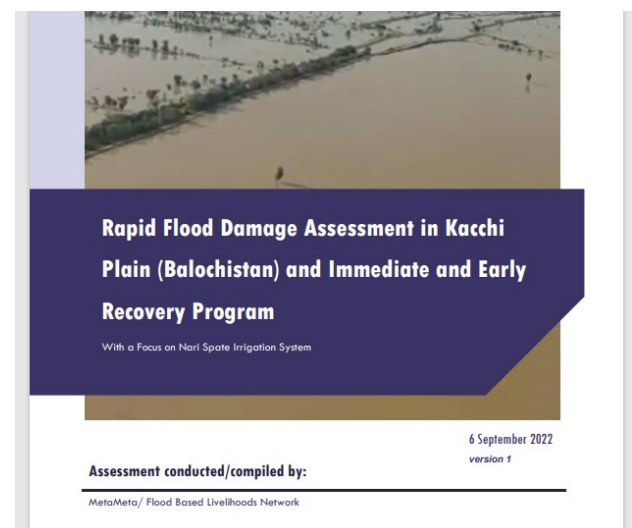


Figure 4: Rapid Flood Damage Assessment carried out in Kacchi Plain (Balochistan), after the 2022 floods. One of the lessons was the need for seeds to be able to cultivate the spate areas.

A third challenge was the access to field sites and the unrest in part of the project areas. Especially in Balochistan the accessibility of the project areas was impacted by attacks and security threats.



Figure 5: A healthy Sorghum crop grown in Kacchi spate areas, Balochistan.

Main lessons learned

- Believe in the strength and resilience of local organisations/networks.
- Not all can be planned in the proposal or inception phase – adopt an approach that leaves room for adjustment of activities to events and opportunities that come up.
- Facilitate exchange of knowledge and practical experiences between areas.
- Early involvement of the governmental line-departments can help to unlock investments.
- Building partnerships on existing networks/connections is most promising. Build on the existing level of trust.

Next steps

As a result of the efforts to upscale the initiatives of the project, several initiatives materialized. These will contribute to the long-term effect of the project. To mention the main next steps:

- The project supported the development of an investment framework for spate irrigation in Pakistan and Afghanistan. This FAO-supported initiative will be expanded in the coming year.
- The adoption of locally proven practices, including climate-resilient agriculture will contribute to the resilience of the farming communities to climate shocks and other natural events such as flooding or dry spells.

- The strengthening and institutionalizing of the community-based networks will be a key step in sustaining these organisations. While the networks have proven their use in developing the community beyond the topic of water management, further recognition of the networks by government and other actors will help to strengthen the model and also apply it in other areas.
- Economic resilience of the households and spate communities is essential for future development. This resilience is built through diversification of crops, increasing of the processing of the harvest, income generating activities and the joint operation of the farmers on the market, to sell crops and processed crops.

Resources available

Throughout the project a wide range of resources was developed. An overview of the resources is available on the project webpage:

<https://floodbased.org/projects/newarbi/>.

Several highlights are:

- [The Photobook 'Spate Irrigation In Practice And Pictures'](#)
- [Overview paper on Nai Gaj, Sindh](#)
- [Livelihoods Opportunities Brochure](#)
- [Practical Notes](#)

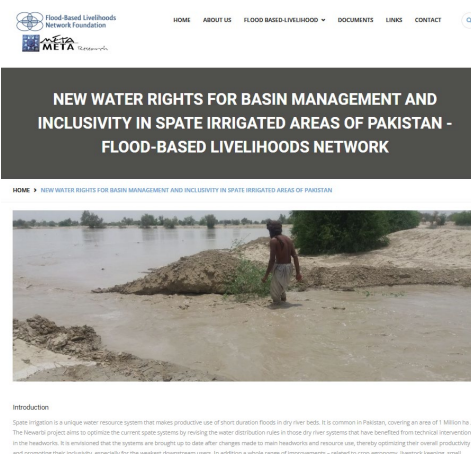


Figure 6: Screenshot of the project website