
Efficient water management contributing to food security and good governance



Mainstreaming CC, E & DRR How to walk the talk?

Integrating climate change, environmental degradation and disaster risk reduction into development cooperation

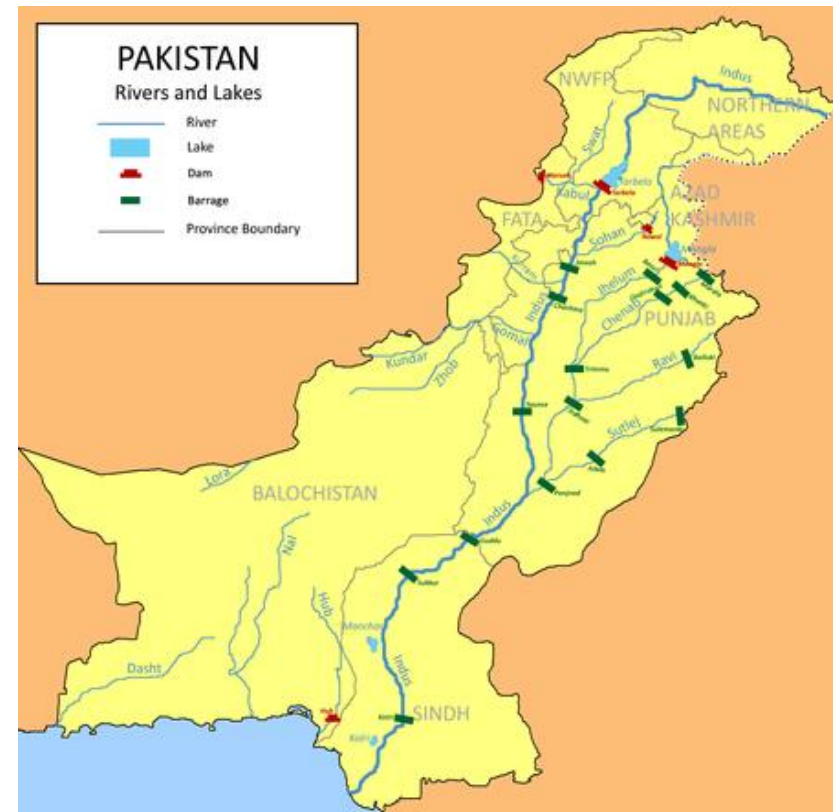
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Fribourg – 12th September 2017

Water economy - Pakistan



- Land of largest glaciers and rivers
- One of the world's largest irrigation network for 36 million acres, 10 major dams and barrages;
- Increasing per capita water scarcity (5,300 m³ in 1947 to **837m³** by 2025: China 1818m³, USA 7695m³)
- **No national water policy due to disagreements**



Food security and water in Pakistan



- Around **68% population** directly engaged in agriculture
- Around **24% land cultivated**; of this, **80% irrigated**
- Around 80% of country's exports is agro-based, water dependent
- Irrigation efficiency **35.5%** in Pakistan
- **40%** water reportedly **lost between source and farm gates**
- Low water storage capacity - **only 30 days**
- Agriculture production has increased over the years, yet Pakistan is **75th** on world food security index among **105 countries**
- Pakistan has high water footprint – **10th largest in the world**

Food security and water in Pakistan..



- Irrigation systems are either totally government controlled, highly technical and mechanized
- **OR** completely community managed – with little improvement with emerging challenges
- Short term water policies under pressures e.g. subsidies on pumping ground water to produce more food followed by restriction
- Hardly any regulations on use by corporate sector

What is missing in water management?



- No water policy – POLITICAL
 - Water management in isolation, government or communities – Participation of users is missing – SOCIAL/ADMINISTRATIVE
 - Water provided is highly subsidized, almost for free – ECONOMICS
 - Poor infrastructure both public and community managed – MANAGEMENT
-
- *Water governance refers to the political, social, economic and administrative systems in place that influence water use and management*
 - *Poor water governance in Pakistan leads to inefficient water use and an important reason for low productivity*

- **Government managed irrigation system:** Awareness of the Government on benefits of participation of users in decision making – for now limited but highly useful and crucial (e.g. WAPRO)
- **Community managed /Community + Government Managed systems:** Awareness of the community on adjusting to changes including impacts of climate change, improved water governance for water efficiency and food security, DRR (e.g.W4L)

Helvetas's experiences and lessons



Our Strategy:

Helvetas follows an **IWRM approach TO IMPROVE WATER GOVERNANCE:**

- **Research** (knowledge of the water resources and uses)
- **Users' participation** - Water users' Association and Water Use Master Plans
- Participation of **corporate sector** (RPL, MARS foods)
- **Economics and improved technology** - Proven benefits of water efficiency, appropriate technology (case studies)
- **Capacity development** on water, Climate Change (Climate Change Centre, technical water departments, local actors)
- **Knowledge management** with stories, manuals, technical papers, policy briefs to inspire users and policy makers.

Helvetas' experiences and lessons



WAPRO in Rice area - government management irrigation system:

- Around 11% of the total agricultural land is under rice production
- Pakistan: 3rd of top 10 rice exporting countries, lots of scarce water being exported
- **Low** rice productivity per unit area – 6th in the world
- Rice water footprint highest among 16 rice producing countries
- Increasing water scarcity coupled with high water consumption and low productivity results in competition with other uses
- Not cultivating rice or shifting to water efficient crops has implications - **food security, cash income and revenues**

Tools for improving water governance: Mainstreaming, Pull – Push – Policy, Water Use Mater Plans, Water Users Association, Proven example of the benefits of efficient rice to motivate farmers, Involvement of private sector, awareness of the government on participation of users in decision making

Helvetas' experiences and lessons....



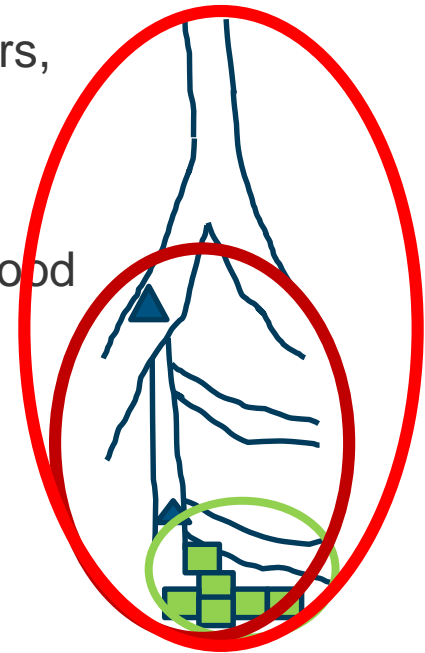
W4L in the community/government managed irrigation system

Tool for improvement of water governance :

Water Use Management Plans (WUMPs) with multiple stakeholders, Water User Association, Support of the technical departments on water efficiency and benefits.

WUMPs encourage innovation (adaptation): Less water for more food

- Helped setting context (demands and challenges)
- Triggered dialogue among stakeholders
- Took into account risks and resource deficiency
- Prioritized needs by negotiating multi-use
- Catalyzed strengthening of roles & responsibilities





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Helvetas' experiences and lessons...



Research:

- Future scenarios for water availability
- Disaster risk assessment
- Changes in hydro-met patterns and implication; and,
- What do farmers think about it

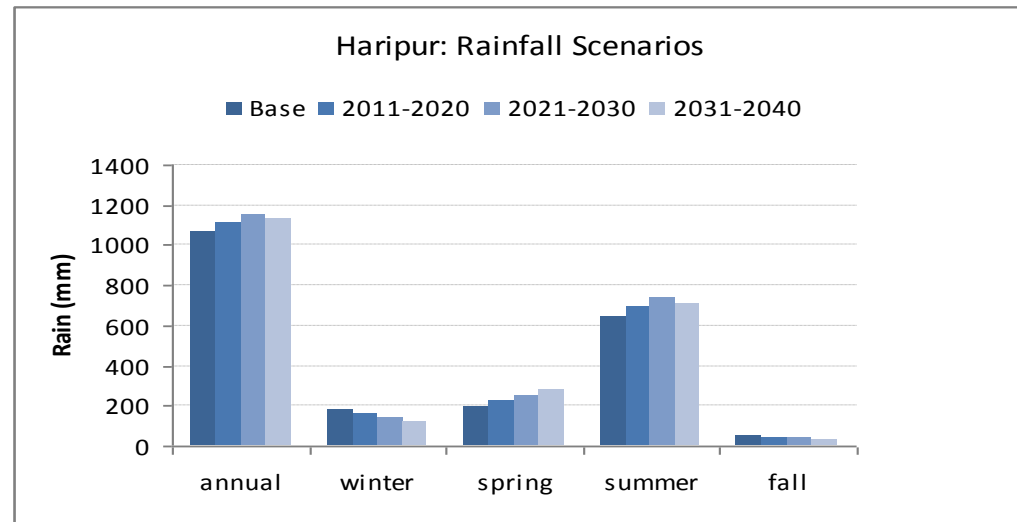
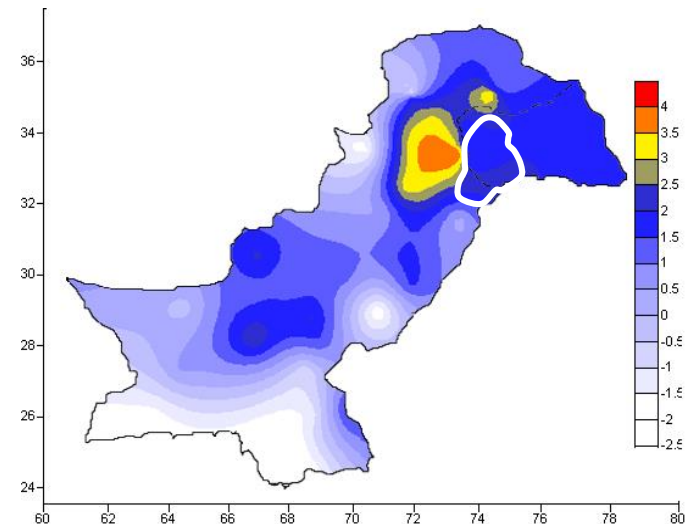
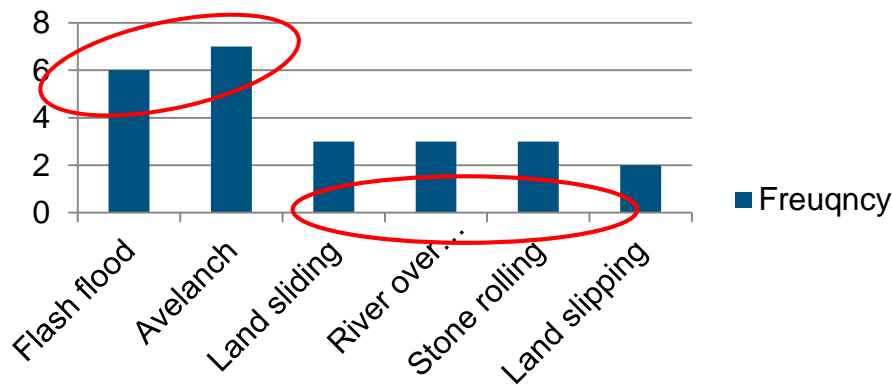


Fig. 10: Frequency of hazards by type



But also what is **NOT** climate change!!

- Anthropogenic pressures
- Mismanagement of resources
- Losing effective local mgt. systems
- Escaping responsibilities in the name of nature's play
- Uninformed development of current and future challenges (including CC)



Helvetas' experiences and lessons.....



- Document Changes in Roles and Responsibilities
- In terms of gender (due to migration, climate induced, economic pressures)
- In terms of eroding local systems



Helvetas's experiences and lessons



Capacity development for **mainstreaming water resource efficiency in the institutions**

- e.g. CC Centre at University of Agriculture in NW-Pakistan
- District level IWRM committees (planners, technical managers, users)
- Democratic community-based institutions (Water Users' Associations)
- Corporate sector (resource efficiency for product sustainability)



Helvetas's experiences and lessons



Documenting and knowledge sharing for promoting learning and influence policy makers



LOCAL ADAPTATION PLAN OF ACTION - CHITRAL

2017 - 2021



A plan prepared by district government representatives and technical experts

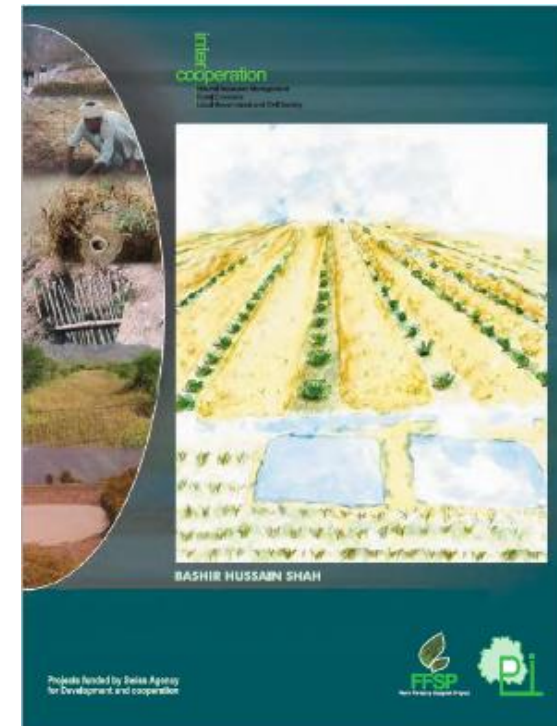
Chitral - 2016

Water Use Management Plan (WUMP)

Facilitators' Manual



Revised Draft, 10th August 2015



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Conclusion: Mainstreaming CC, E, DRR in development



Based on WAPRO and W4L results, we are encouraged to suggest that:

- Mainstreaming is to be ensured by **integrating all essential ingredients** in water sector development (users' participation for planning and action, research, capacities, knowledge management, private sector, economics)
- **Old habits of managing water as a stand alone technical and sectorial topic needs to change**
- **Mainstreaming and Multi-actor involvement** and changing mindset towards *efficient water management helps grow more* (not less)
- And ensuring that we are **not doing any harm** by introducing development in highly fragile environment without understanding local systems
- Old habits take time to change – 60 years history of free irrigation water supply; however **free water will not be available in the future**
- It is important to **generate Government's interest** in successful field examples and create appetite for upscaling
- “Today I understood that climate change is **awami** (*common man's*) *topic*”. *Chief Minister Khyber Pakhtunkhwa, Province, Pakistan.*

Our partners and supporters



- Swiss Agency for Development and Cooperation (SDC)
- Swiss Solidarity
- Governments of two provinces in Pakistan: KP and Punjab
- The farming communities in KP and Punjab
- Corporate sector (MARS and RPL)
- Climate Change Centre - The University of Agriculture Peshawar
- Pakistan Meteorology Department
- Technical departments related to water (directly and indirectly)
- Non governmental organizations and individual experts

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