

FLOODWATER GOVERNANCE

WATER RIGHTS AND DISTRIBUTION RULES

Dr. Abraham Mehari Haile

Water rights and rules in flood-based farming systems ...

■ Create predicatability and a perception of fairness:

- Encourage land preparation
- Facilitate cooperation in operation & maintenance

■ But could also be a source of conflict :

- When not codified/recorded
- Modernization interventions change the power balance between upstream and downstream
- Enforcement is poor

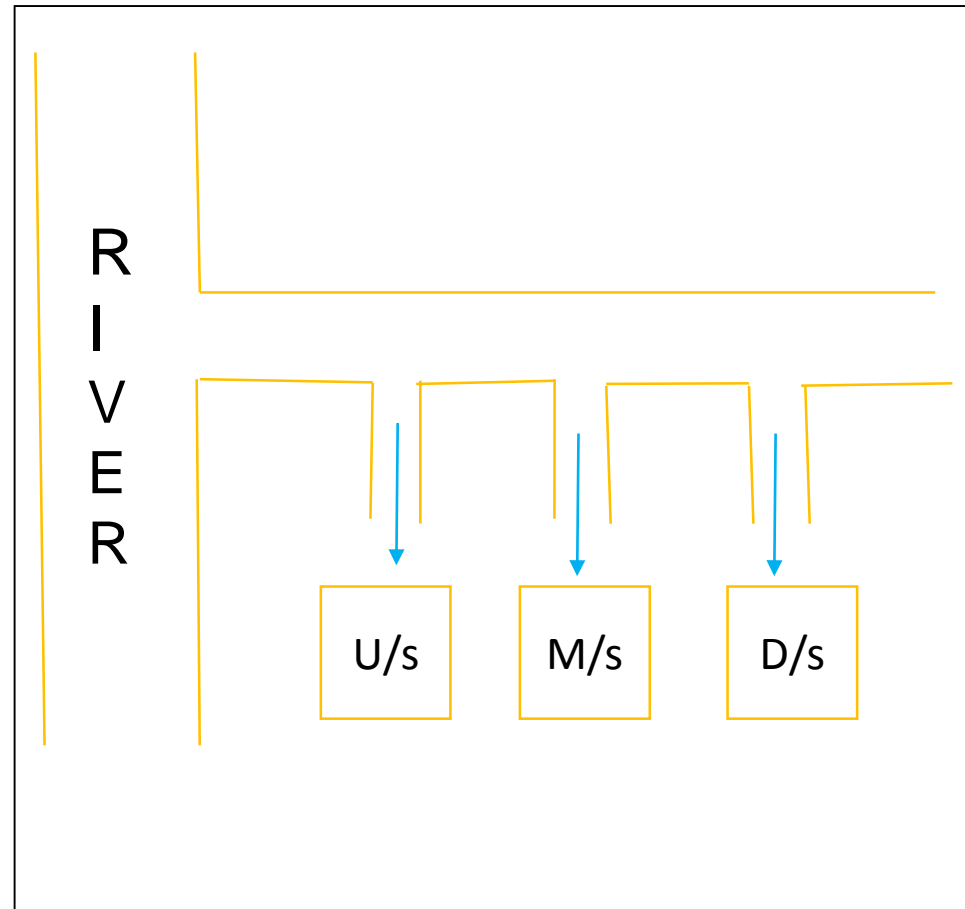
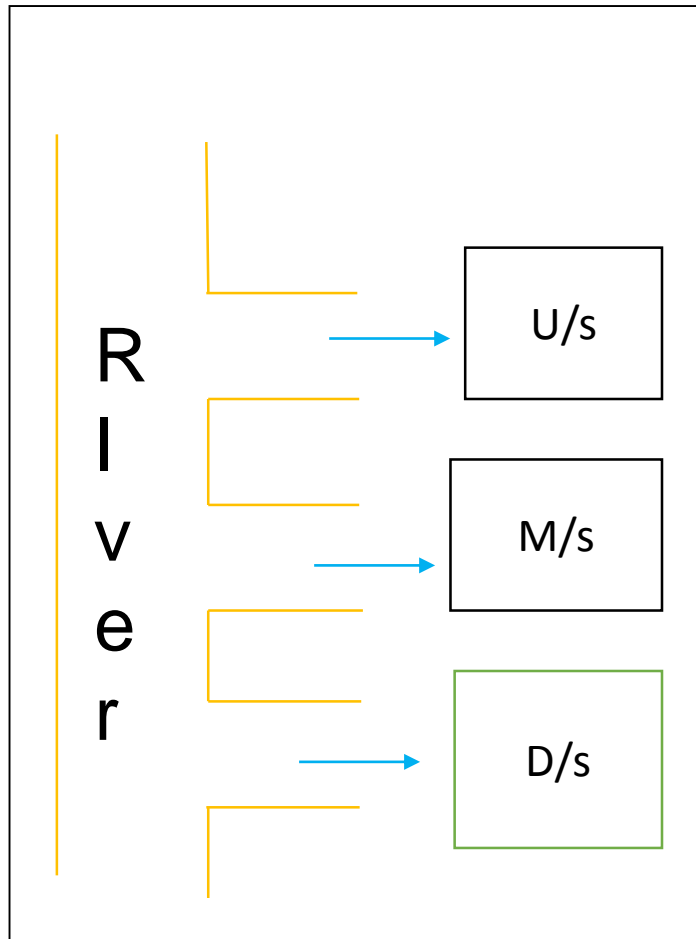
Water rights codified/recorded
in 1872 still in use in Pakistan

Local tax official
administers water
rights and water
distribution rules

Farmers and local
government jointly
enforce water rights

To avoid conflicts and
powerplay

Your flood based irrigation system layout should give the least power possible to the upstream



There are several categories of water rights and distribution rules in spate irrigation systems:

1. Demarcation rules
2. Rules on breaking of diversion bunds
3. Sequence in which fields are watered
4. Depth of irrigation that each field is to receive
5. Rules on second and third water turns
6. Special preference rules

Usually there is a combination of some of these rules

Rules on demarcation of command area

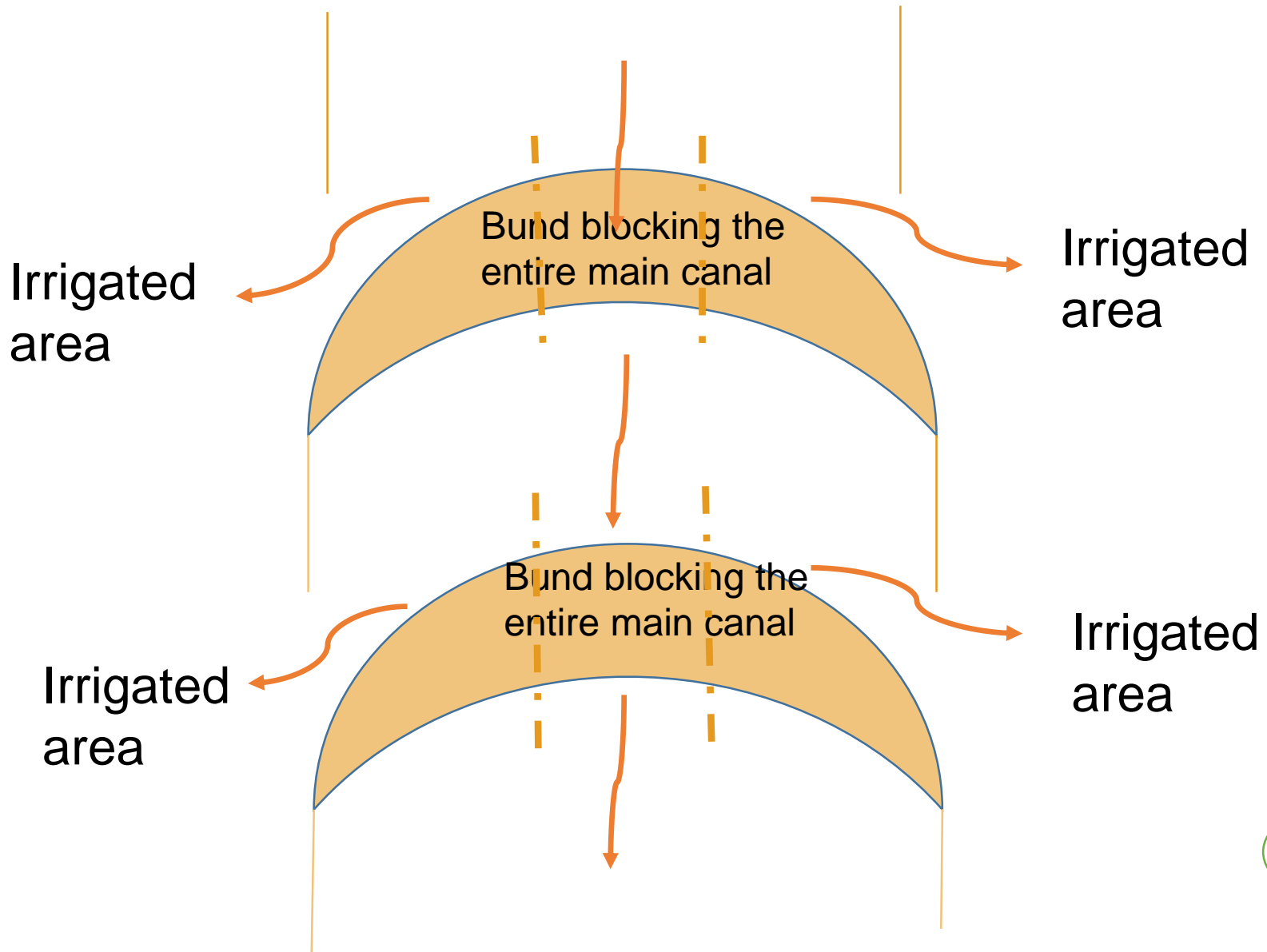
- Define which areas is allowed to be irrigated
- Protect existing areas against new land development upstream.

Rules on breaking of diversion bunds



- It works especially where bunds block the entire main/secondary canals, and in a field-to-field system
- After the upstream area is fully irrigated you break the bund and let water flow to the down stream.

Rules on breaking of diversion bunds



Field to Field Irrigation



Rules on Sequence

Sequence rules determine order in which canals and fields receive floodwater

- Sometimes, they are dependent on flood size
 - Small floods for upstream
 - Medium floods for midstream
 - large floods for downstream
- Yemen: 'ala'ala fala'ala' (upstream first)
- Gash, Sudan: rotational
 - rotation one - 10 Jul to 14 Aug
 - rotation two - 15 Aug to 15 Sep
- In Guguf, tigray, Ethiopia: lottery-based



Rules on depth of irrigation



Determine the amount of water a field is entitled to receive

- Related to height of field bund (50 to 100 cm)
- Height of bund also related to:
 - Location in the system – tail end areas usually depend on one flood only, and field bunds are usually higher
- Ruling of Prophet Mohammed ‘two ankles deep’

Rules on second or third irrigation turns

Determines how many times you are allowed to irrigate

- Common in spate systems that receive several floods:
 - Second turn is allowed only after all fields get first turn
 - Third turn is allowed only after all fields get two turns
 - In some areas, in a new flood season, irrigation starts from upstream again
 - In other areas, in a new flood season, irrigation starts from areas that did not receive floodwater the previous year
- The degree to which the rules are applied depends on the timing and size of the second floods
 - If too small may not reach tail areas
 - If too late may damage standing crops or brings pests and diseases

Special preference rules

Women, elderly, disabled have priority to irrigate from floods that occur during the day time hours

Water Masters have first priority

In Awash fentale woreda priority is given to food crops of small-scale farmers over the sugercane plantation.



THANK YOU VERY MUCH