RESEARCH PROGRAM ON
Dryland Systems

CGIAR

Implementation report on

"Temporal assessment of soil profile moisture under runoff farming systems"

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June 2015

Temporal assessment of soil profile moisture levels under traditional Khadin systems in Rabi season and on-farm assessment of an small Khadin system (Khadin already established) for higher water productivity and farm income

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Temporal assessment of soil profile moisture levels was carried out in

1. *Masurdi Khadin* (traditional *Khadin* systems)
2. *Mandreta Khadin* (small *Khadin* system)

- Soil moisture dynamics studied in 10 profile from *Masurdi Khadin* and 9 profile from *Mandreta Khadin* covering lower, medium and upper side of *Khadins*.

Date of Moisture dynamics study in *Masurdi* and *Mandreta Khadin*

1.	19-21 October 2014	**4.**	01-03 December 2014	**7.**	12-14 January 2015	**10.**	23-25 February 2015
2.	03-05 November 2014	**5.**	15-17 December 2014	**8.**	28-30 January 2015	**11.**	09-11 March 2015
3.	17-19 November 2014	**6.**	29-30 December 2014	**9.**	09-11 February 2015	**12.**	23-25 March 2015

- Moisture in upper region is losing at a faster rate.
- Low water requiring crops can be grown in upper region.
- High water requiring crops (Wheat and Mustard) can be grown in middle and lower region.
- Sodicity was also noticed in middle and lower parts of *Khadin*, so leguminous crops are not recommended (Fig 1-3).

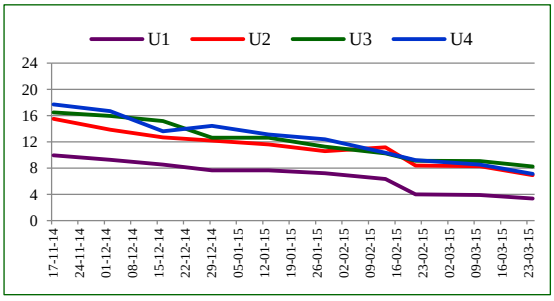

Figure 1. Moisture dynamics in middle region

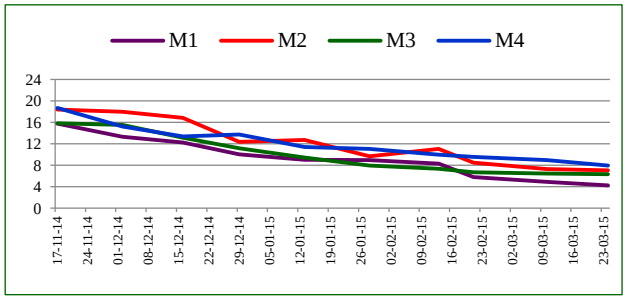

Figure 2. Moisture dynamics in upper region

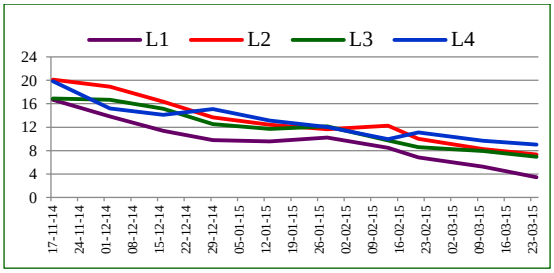

Figure 3. Moisture dynamics in lower region

Soil Moisture dynamics in Mandreta khadin (small *Khadin* system; Family *Khadin* - (Punna Ram Bheal) , Jaisalmer

- Moisture in such *Khadins* are losing at a faster rate.
- Shallow depth in upper region and maximum depth around 1.2m.
- Low water requiring crops (Taramira and Gram) can be grown in such *Khadins*.
- Mild sodicity was noticed in middle and lower parts of *Khadins* (Fig. 4-6).

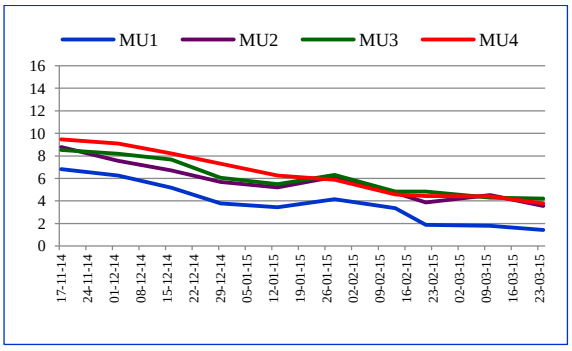

Figure 4. Moisture dynamics in upper region

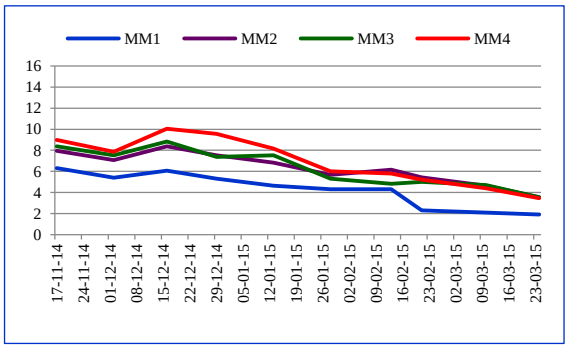

Figure 5. Moisture dynamics in middle region

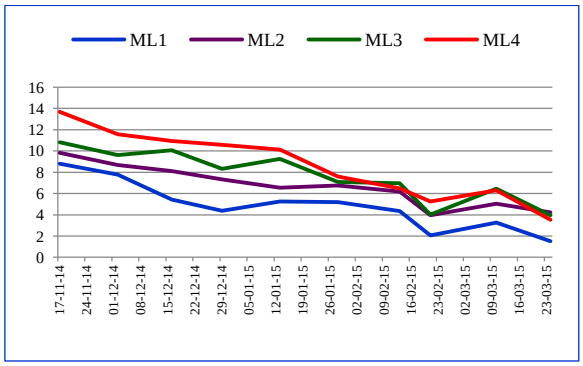

Figure 6. Moisture dynamics in lower region

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RESEARCH PROGRAM ON

Dryland Systems

The CGIAR Research Program on Dryland Systems aims to improve the lives of 1.6 billion people and mitigate land and resource degradation in 3 billion hectares covering the world's dry areas.

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The program is led by the International Center for Agricultural Research in the Dry Areas (ICARDA), a member of the CGIAR Consortium. CGIAR is a global agriculture research partnership for a food secure future.

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