



## Water Management Initiatives at Chomu, Rajasthan- The Barley Belt.

### Background

SABMiller is committed to support responsible, sustainable use of land for the crops that is used in brewing. In India we have introduced interventions with the barley farming community to encourage adoption of water efficient, more productive and profitable agricultural practices.

### Project Location

The project is spread over 22,208 ha covering 29 villages fully and 22 villages partially for larger study. For rigorous and deep study for establishing robust water balance and demonstrating a model for sustainability scenario, a small area of 7,830 ha is selected.

### Partners

- SABMiller India.
- Confederation of Indian Industry (CII).

### Way Forward

The target area near Chomu poses a tough challenge due to depletion of groundwater and equally or more so because of the high TDS. There are also limits on water augmentation and recharge due to a largely flat terrain.

A long term strategy for this region requires promotion of farm ponds based irrigation with cropping season stretching from July to December - extended kharif crops (e.g. Arhar), with suitable intercrops, and/or two short duration crops (e.g. Bajra and Mustard/Sorghum/Barley) with suitable intercrops. The cropping choices will have to be of low water requirement and tolerant of moisture stress. The size of the farm pond needs to be evaluated with respect to rainfall pattern and crop water requirements. Farm ponds can also take care of domestic water

### Issues Faced

The Project area has low natural recharge potential, high groundwater draft and severe groundwater quality issues. The findings of initial water balance model have revealed that there is a huge gap of 26,039,592 m<sup>3</sup> in groundwater abstraction and recharge. This has been validated by observed annual average groundwater decline by 1.6 m in project area. It is required to reduce groundwater use in agriculture by about 40% of present level, to achieve groundwater sustainability. Therefore, it becomes very important to work with farming community at a scale which will make visible impact.

### Project Potential

Improved crop management practices have the potential to decrease water use while increasing crop productivity.

### Results

- Total farmer outreach: 631
- Average productivity rise of cereal crops over farmer practice: 41.6%
- Net increase in income from grain crops per ha: Rs. 20,001 (41.4%)
- Water saving m<sup>3</sup> per ha: 538 (22%)

requirements during this duration. Once the farm ponds dry up groundwater may be used for additional irrigation and domestic use. Use of drip and sprinklers for irrigation goes without saying.

The crop water requirements can further reduce promotion of nurseries for developing nursery plants in trays and transplanting once they are matured. Additional techniques for reducing evapotranspiration losses would be to promote bund/hedge plantation of trees like gugul, glyrecidia and creeper type vegetable crops. Glyrecidia will provide nitrogen rich leafy biomass, gugul will provide long duration income source and vegetables will provide immediate income source. The bund/hedge plantation will provide a green fence as wind breaker. The green fence will also help reducing the on-field temperature.