

# Transforming rain-fed agriculture land to irrigated land

## -Development of DOHA in Chicholi block, Betul district

*(Doha is a term used by some organisations in Maharashtra where this method has been used)*



Sub-surface ground water holds the key for increasing irrigated crop lands. The volume of existing and future irrigation needs would have to be met by tapping sub-surface ground water and utilizing it more efficiently.

ASA has initiated DOHA model- Eco friendly and low cost water harvesting structure build on the stream beds to augment ground water recharge.

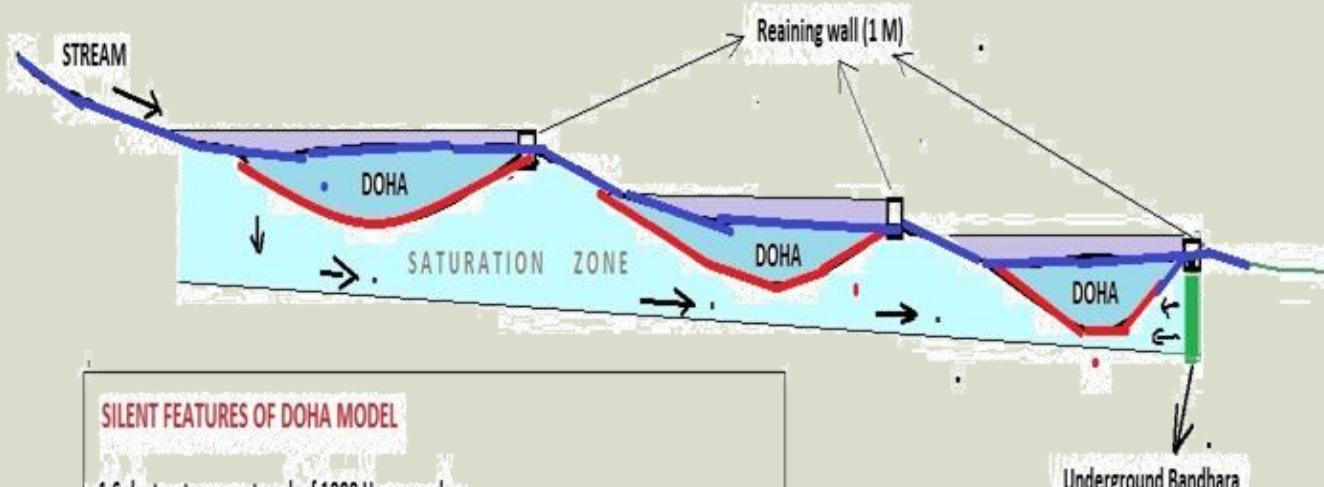
An Average size of a Doha is 850 cubic meters. Water user groups are formed around these structures for its operation and maintenance and overall management of the structures

### Quick facts

- ◆ 13 "Doha" created
- ◆ 33150 M<sup>3</sup> water storage capacity
- ◆ 9945 M<sup>3</sup> recharge capacity
- ◆ 9 water bodies (dug wells) recharged
- ◆ 850 M<sup>3</sup> average size of a DOHA
- ◆ 650 mts covered by 13 DOHAs
- ◆ 26 farmers benefitted
- ◆ 48 acres of rain-fed land transformed into irrigated  
cultivable land
  - Direct lifting of water from DOHA
  - Recharge in Dug wells.



# SECTIONAL VIEW OF DOHA MODEL



## SILENT FEATURES OF DOHA MODEL

1. Select a stream network of 1000 Ha onwards.
2. Top to Bottom approach
3. Select Doha site where river bed slope is 2 to 3 % in 250 M to 500 Meter stream length.
4. Keep depth 2 M to 4 M
5. Excavate in a souccer shape to minimized siltation process.
6. Keep width of Doha as per stream location - 10 M TO 20 M
7. Construct 1 M hight retaining wall to create additional capacity.
8. Construct underground bandhara with black soil at every 1000 M length of Doha to minimize underground seepage.

## BENEFITS OF DOHA MODEL

1. Low cost and eco friendly water harvesting structure.
2. Recharge underground water tables in 300 MM rainfall.
3. No land aquizition.
4. water storage is below ground level, no risk of side scouring.
5. Replicable at any streams of country.
6. Most suitable to 500 MM to 1000 MM rainfall.
7. Solved drinking water problem of Human and livestock and wild animal in summer.

## Steps involved in design and implementation of Doha:

- Mapping of Micro watershed and drainage line
- Formation of the water user group
- Baseline Survey for Impact assessment
- Topographic survey of stream.
- L-section map of stream
- Estimate and costing of proposed interventions
- Execution of proposed DOHA
- Impact assessment survey.



Action for Social Advancement (ASA), Bhopal is a non- profit organization working in the field of farm based livelihoods development for smallholders. ASA started its activities in 1996 in Madhya Pradesh and is now extended to Bihar, Chhattisgarh and Jharkhand.

For more details contact;

Action for Social Advancement, ASA  
E-5/A Girish Kunj, Above State Bank of India,  
(Shahpura Branch), Arera colony, Bhopal, -462016,  
India