



## Implementing Integrated Water Resources Management (IWRM) in Water Projects in Rural Areas in Al-Mahweet Governorate. Case Study: Yelaan, Sawaan and Al-Dahabishah Villages

### water problem

#### Water shortage in quality and quantity

-In the world “Around 1.1 billion people globally do not have access to improved water supply sources, whereas 2.4 billion people do not have access to any type of improved sanitation facility”.

-In Yemen The average rainfall in Yemen is 200 mm/year, and the evaporation rate varies from place to another with a range from 1500 to 3500 mm/year (NWSSIP, 2008). About 21% of the rural population, which has access to safe drinking water and only 19% having adequate sanitation facilities.

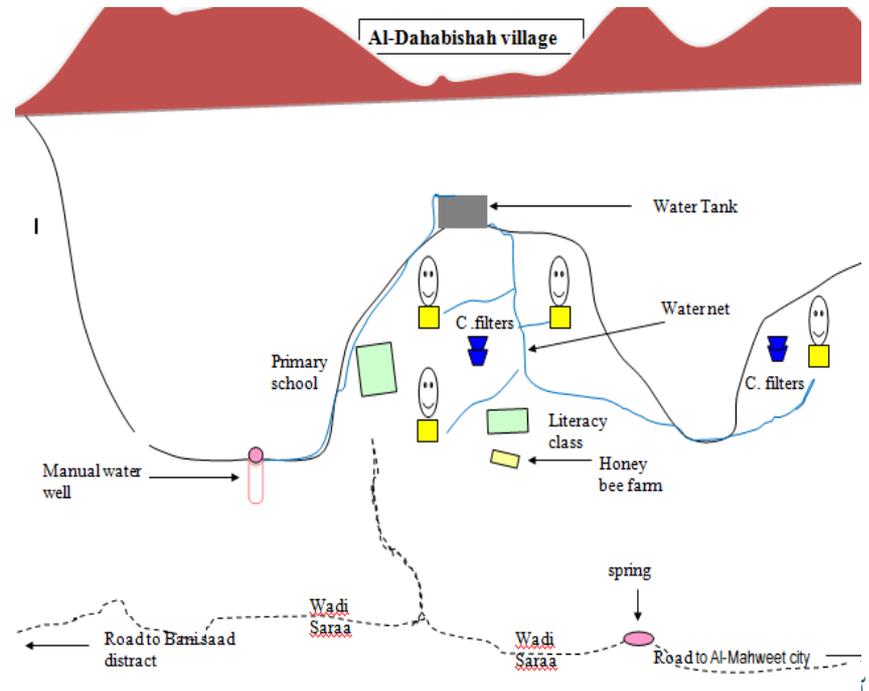
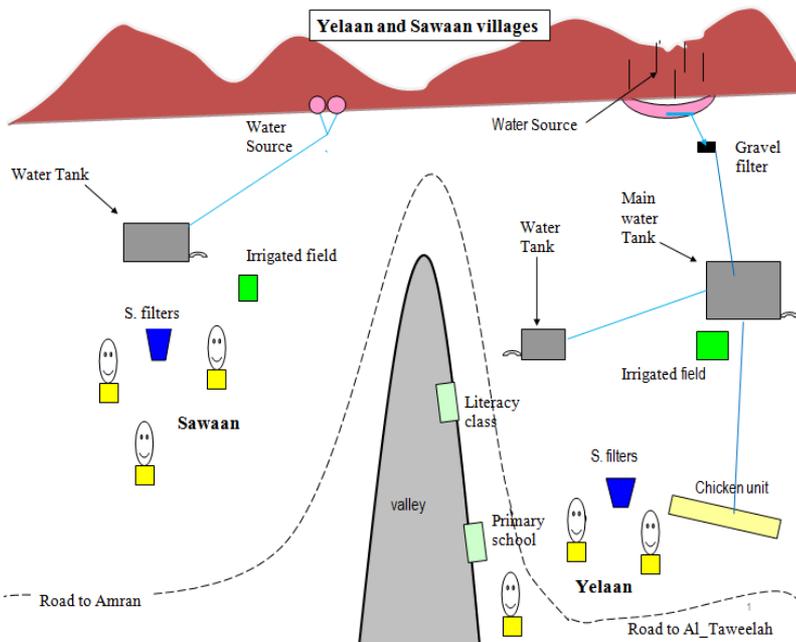
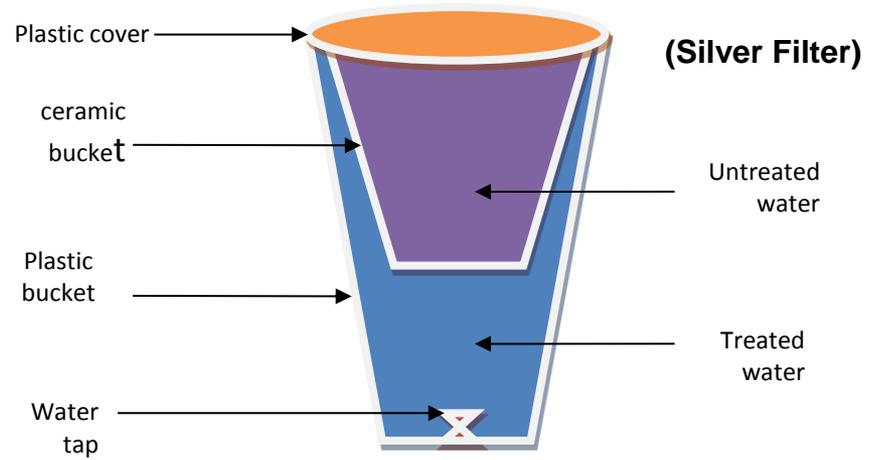
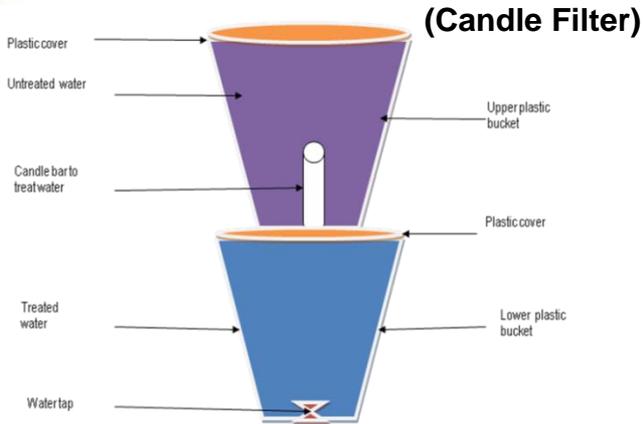
#### Waterborne pathogens

- In the world about 2.2 million people die every year because of diseases associated with lack of safe drinking water; most of them are children, who are less than 5 years old
- Yemen Infant and child mortality rates are 71 deaths per 1000 live births and 105 deaths per 1000 live births, (WHO, 2005).





# Used Water Filters and Water net System in the villages improved water quantity and quality (reduced diarrhoeal disease)



## Results and discussion

- Before implement water projects households in the villages were suffering from disease (Diarrhoeal diseases) especially children under 5 years age, in Sawaan 78.6%, Yelaan 100% and Al-Dahabishah 86.6% and all tested water samples for Bacteria (faecal coliform) showed high contamination with faecal coliform (*E. coli*) 100% in Yelaan and AL-Dahabishah whoever in Sawaan 83%.

- After implement water projects , the role of women was enhanced by raising their awareness on the importance of water quality, education (literacy class), operating IGA (economic) and training in good water management.

- After 3 months of implementing the water projects:

Improvement in household's health is 80% in Sawaan , 90% in Yelaan and 72% in AL-Dahabishah.

Improvement in household's socio-economy is 80% in Sawaan , 70% in Yelaan and 78% in AL-Dahabishah.

Improvement in household's time saving is 70% in Sawaan , 90% in Yelaan and 72% in AL-Dahabishah

-Women and girls are save time and able to join schools and literacy classes.

-More research is recommended in future for implementing integrated water resource management in water projects for more improvement in water management and water filters production .

- It is highly recommended to use Sliver Filters in rural and urban areas where water contamination is still wide spread

