

## Surface and ground water management



*Photo: the effects of a Nadi on Rahlana pastureland.*

We have seen the impact of exploited resources- reduced greenery, less agricultural productivity and water scarcity. As the population continues to increase some see mechanical farming as the only way to feed their families, regardless of the long term environmental effects.

Much of our operational area is downstream from Sambhar Salt Lake, so if we can't recharge our own ground water we have to

rely on salt water for irrigation. The ground is rocky and the water has high levels of Total Dissolved Solubles (TDS) leading to poor soil fertility. These area specific problems are coupled with droughts leading to real challenges for sustainably managing natural resources. Species are vanishing from Rajasthan, vultures are almost extinct because of the lack of food. Even humans are going hungry; one or two people die from starvation each year. If communities, CBOs and the government collaborate now we can address these problems, but left to fester our natural resources will be exploited until the damage can't be reversed.

When the monsoon does come, it is essential to carry out surface water storage to establish moisture, provide drinking water for animals, develop surface greenery, for domestic use, bathing and gravity flow irrigation. Most villages have a large water holding structure, or talab to use either for irrigation or recharging ground water. Village tube wells with hand pumps, and open wells can only function if the recharging structures are in place. Drinking water supplies are fully dependant on ground water, and agriculture relies on it for 80% of its needs, so it must be recharged.

Without an adequate management system some families purchase power pumps to irrigate their fields from the talabs, so certain talabs are set aside only for recharging drinking water and must be kept clean, sanitised and undisturbed. Garbage pits are built next to them so that there is no excuse for putting waste in the talab, and GVNML encourages villagers to build toilets inside their house rather than using public spaces which could infect the water supply. If a talab has been set aside for irrigation, we ensure that the water is shared equally, numbering each field so that everyone gets a turn.

Man-made ponds (Nadas and Nadis), and anicuts are built to use ground water for irrigating surrounding fields, and can also be cultivated because of the moisture locked inside them. Nadis can store overflow water from the chouka system, to be used on common property resources.

The Village Development Committee (VDC) carries out village level surface and ground water management, setting rules, enforcing and reviewing them. Rules forbid the installation of power pumps at drinking water sources and surface water harvesting structures. In some villages the selling of ground water is banned, and private wells cannot be constructed. VDCs exist in 210 of the villages we operate in and are made up of 10-15 local leaders elected by the villagers, with a third of membership reserved for women. They are expected to keep detailed and transparent records of all their activities and help form various sub committees such as self help groups and school development committees.

One Gwal Committee in each village consisting of up to 30 elected representatives looks after the interests of shepherds and cow herders, managing common grazing land so it is not overused.

Looking after the ground and surface water enables local families to be able to look after themselves, growing more crops and securing their livelihoods leading to less migration.