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Sheep being herded down to drink at an *ela* (deep well) of Gayo kebele.

BRIEFING NOTE 3: SUPPORTING MORE PRODUCTIVE USE OF TRADITIONAL WATER RESOURCES

As outlined in **Briefing Note 2**, the Borana perceive two major categories of water resources: traditional, and modern. The NRM-Borana Project has focused its interventions on improving the availability of water from the traditional forms – deep wells (*ela*) and surface ponds (*haroo*), as these provide the largest share of water for both livestock and humans.

DEEP WELLS (ELA)

Deep wells are estimated to supply 80% of all water used by livestock, and often humans, during the dry season. They are thus crucial for resilience to climate change in the face of more frequent and longer droughts. Traditionally, the wells are closed during the rainy season to avoid damage. At this time, other sources of water are available (such as rivers and ponds).

TRADITIONAL GOVERNANCE OF DEEP WELLS IN DECLINE

As already noted, there is a highly elaborated system of traditional governance for deep wells. However, this system has been complicated in recent years by the establishment of modern water sources such as boreholes and hand pumps, managed by committees which do not necessarily include any traditional authority members. An unintended consequence of external intervention has also been the slow promotion of a form of dependency syndrome. In some cases, the deep wells have been abandoned, or at least not properly maintained, as the

modern water sources are perceived as more convenient. Nevertheless, they are not necessarily more reliable or democratic.

The NRM-Borana Project first sought to understand the customary system of governance of deep wells, and then to work with it, enhancing the positive aspects at the same time as facilitating the greater engagement of women – the traditional system being highly patriarchal. A crucial feature of customary water governance is that access to water cannot be denied to anyone based on who they are; all people have a right to water. However, access can be, and is, regulated according to the customary water management and use system, as outlined in the text box.



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Nura Tadicha is the *Abba Herrega* of Gadulticha deep well, Dhas kebele. It is his job to ensure the equitable distribution of water during dry seasons.

A hierarchy in access to deep wells

The use of deep wells is based on the seniority of the users, with the most senior customary leaders – male elders such as *Licho* (customary lawmakers) and *Hayyu* (councilors) having priority for their livestock. Next in line is the *Abba Herrega* (well overseer), followed by anyone who slaughtered a bull as a contribution to those laboring at the time of well-digging. After this come all other users, whose claim will be considered greater if they live closer to the well and will depend on the number and type of livestock that they own.

Livestock also vary in priority. Top priority is given to horses, calves, and lactating cows, followed by donkeys and mules. Next come cattle, sheep, and goats; camels come last. Calves and lactating cows are clearly the most vulnerable, which is why they have priority. Horses are highly valued, and the rule of access to water for them is very strict in the *gada* system: a horse is allowed to drink at any time upon arrival at any water source, with failure to apply this rule being heavily punished. Given the fact that relatively few pastoralists own motorized transport, the animals of burden (especially donkeys) are essential for carrying water and fodder during the dry season and must therefore be kept in good health. Camels have lowest priority as they are best suited to dry conditions and survive the longest without water.

As water scarcity intensifies, livestock watering is reduced progressively to once a day, once every two days, or once every three days.

RE-INITIATING THE KORA ELA

Although positions such as *Konfi* (well founder) and *Abba Herrega* (well overseer) are still recognized in the community, the project could find no-one who could remember exactly when they had attended the last general meeting of users of a deep well. Such meetings, known as *Kora Ela*, should be held annually amongst all users to set and agree the rules of deep well use, mediate any conflicts, and ensure rule enforcement through fines if necessary. The project facilitated the recommencement of such meetings for four wells in 2020. Rules were tightened, made more specific, and fixed penalties introduced. For example, it was agreed at the Gayo well complex that “if someone misuses the traditional wells, s/he shall be penalized by paying five heads of cattle. If the s/he committed another violation of the bylaws, the sanction shall go to exclusion from water use in Borana land”. Following the selection of the Gayo deep well as a pilot site, further assemblies were conducted at grass

roots level and broad agreement was reached on fine-tuning the governance of the water sources according to the customary bylaws.

The project facilitators ensured that members of the local government also attended the re-convened *Kora Elas*, so that they were involved in and understood the decision-making process. At the same time, women were encouraged to speak out and have their voices heard, recognizing their key role in collecting domestic water supplies and watering weaker animals.

IMPROVED ACCESS TO WATER – SOLAR PUMPS

Some of the traditional wells are so deep that in the past, up to 12 people standing in line were needed to haul up the water. This was a time-consuming, exhausting and sometimes dangerous task; occasionally the well shaft would collapse, or someone would slip and be killed.

During severe droughts, livestock become so weakened that they are unable to walk out of the steep well passageway. Solar pumps were perceived to be an appropriate technology in such cases, allowing water to be pumped up to separate access points for humans and livestock at the surface. One pilot solar pump was installed at the Gadulicha deep well in Dhas *kebele*. This was initially quite controversial; there were fears that the whole traditional well structure, with its strong cultural significance, would be lost. However, the solar panels, pump, and associated infrastructure have been constructed in a manner that preserves the traditional well and its passageway. Water is extracted via relatively unobtrusive piping and directed to a drinking water collection area, where it first passes through an additional filter, and then separately to a set of robust water troughs for livestock. Arguably, the well structure is being better preserved under this system as thirsty livestock can easily access water from the surface troughs in a properly regulated manner, rather than crowding down the well passageway and potentially damaging the dry, crumbling walls.

The traditional form of governance of the solar deep wells has been maintained, with an *Abba Herrega* overseeing water allocation, assisted by an *Abba Guya* who maintains the site cleanliness. Both *Abbas* and the *woreda* water office experts were given training in maintenance of the pump system; as a result, small repairs are undertaken by the *Abba Herrega* and *Abba Guya*, but in more significant cases of malfunction, the *woreda* authorities are expected to provide support. In the three years of operation, the Gadulicha solar pump has operated relatively smoothly, only twice breaking down and requiring new parts. The system of payment for maintenance is still evolving. Given the cultural importance of free access to water, there is considerable hesitation to charging daily fees for water, although records are kept by the *Abba*



The solar panels powering the pump at Gadulicha *ela* (deep well) in Dhas *kebele*.

Herrega of how much was used by which household. The preference on the part of the elders is for maintenance costs to be allocated to households at general clan assemblies, charging more to heavy users and exempting or minimizing the contribution of those who cannot afford to pay. This is not in keeping with the modern, government system of an agreed price per unit of water used. When the purchase of spare parts for the Gadulticha pump was necessary, the money was raised from the community; however, the disadvantage of relying on meetings to decide such matters is that they take time to organize.

SURFACE PONDS (HAROO)

Surface ponds are found across much of Borana, and may be fully natural or constructed, although usually they have at least been enhanced by human hand. They tend to be used most heavily at the beginning of the dry season once other sources of surface water have dried up.

Pond rehabilitation activities are quite regularly supported by NGOs, often working in collaboration with local governments. Pond rehabilitation as cash-for-work is a particularly common activity in times of drought as a humanitarian response that combines preparation for the next rainy season. The NRM-Borana project has also adopted this strategy – but with two notable differences, as piloted in four cases. One is ensuring collaboration with the customary authorities – most notably the pond owner, *Konfi* and overseer, *Abba Herrega* – in addition to working with the local government. The other innovative intervention concerns the improvement of pond catchments. This was trialed through participatory action re-

search in four surface ponds: Liban Jatani and Bunaga in Gayo *kebele*, and in Magole and Hidha Babo within the *kebeles* of the same name.

“Before NRM-Borana we were fed up with pond management and rehabilitation. Many actors are working on the rehabilitation of ponds, but the results did not meet expectations; due to siltation, the water-holding capacity of the pond became almost zero in very short period. But today I am here to testify how pond catchment treatment prevents the siltation of ponds and maintains the capacity of ponds to hold quality water for both human and livestock”. Jala Bakure, Gayo *kebele*, Dhas *woreda*, November 2021

The improvement of the water catchment entails inhibiting the run-off of silt from surrounding gullies feeding into the pond. This was done by constructing vegetative mini dams – sieve structures of cut bushes – across channels feeding into the ponds and planting of grasses in the gullies. These reduce surface water flow during heavy rain and encourage percolation (see text box). In addition, the project has supported the fencing of the entire circumference of the ponds with locally available materials (cut thorny bushes) to control livestock access and allow human access only via a gate or stile. During times of high demand for water, this facilitates monitoring by the *Abba Herrega* of the amount taken by each household. It also prevents trampling of the pond edges by livestock and keeps the water as clean as possible. Similarly, in unfenced ponds, a barrier is placed across part of the pond to allow only human access and to herd livestock towards a separate area.

Reducing pond siltation through the construction of sieve structures (vegetative mini dams)

The movement of sediment through gullies can be reduced substantially by constructing sieve structures and vegetation traps that check the flow of water, allowing sediment to settle before reaching the pond. Sieve structures are vegetative mini dams that can be made from trees growing near the gully. Posts or 'stubs' cut from the main tree stem are buried upright across the gully floor so that they reach a height of 50–150cm. Gaps of 10–15cm are left between the upright posts. Branches are then packed horizontally against the row of posts on the upstream side. If aloe plants or *Commiphora* trees can be found growing locally, sprigs can be taken and planted among the posts, where they will sprout and form a living sieve. A series of sieve structures along a gully can be very effective in removing most sediment before it reaches a pond.

Source: HAFL Pascale Waelti, Christoph Studer, Tabea Allen, Demisachew Tadele Ayana, Liban, Jaldesa Doyo, Belda Edeo, 2022. Participatory Action Research for the NRM- Borana project Capitalization of Experience Report, HAFL.

The increased water retention of the ponds, and the general improvement in water quality, was widely appreciated by community members. Seeing the advantage of the intervention, the users of Liban Jatani pond of Gayo *kebele* voluntarily organized an enlargement of the catchment area through new fencing. Nevertheless, the labor entailed in the construction of vegetative mini dams and pond fencing is considerable. Furthermore, the dams become full of silt after several years and are no longer an effective barrier to run-off, meaning that the work must be done again. Whilst the technological feasibility of the intervention is proven, it may not always be practical in terms of labor demands.

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In total, the project has supported the rehabilitation of seven hand dug surface ponds. During the Covid-19 pandemic, it was necessary to temporarily switch from manual de-siltation to the use of machinery, as it was not possible to maintain social distancing when organizing labor. Accordingly, a further seven (new) ponds were dug using machinery. However, the employment of manual labor recommenced as soon as possible, with workers being paid on an area basis – splitting earnings equally between women and men.

Taking the work on deep wells and surface ponds together, the project has directly increased access to water for 9,137 households (3,498 of which are woman-headed) and some 66,545 heads of livestock. These figures, however, mask the true extent of project impact as many secondary water users have also been able to access the concerned deep wells and ponds.

LESSONS LEARNED

- Given the sensitivity between “traditional” and “modern” water governance systems, any interventions must be introduced with particular care to ensure community ownership. It is worth investing time in discussion on this matter to ensure long-term acceptance and effective maintenance.
- Labor-intensive interventions to halt soil erosion, such as the construction of fencing and vegetative mini-dams, are well suited in combination with pond rehabilitation as cash-for-work schemes in times of humanitarian response. However, paying for such activities in times of hardship can undermine community solidarity in conducting such activities voluntarily in more normal times. This is always a difficult balance, and again one that needs careful discussion and clarification.



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