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Digging with a needle or soaking into the sand. Water retention in a dry region of Vietnam.

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Water retention techniques such as sand storage dams and (contour) trenching have been applied in African countries with success to provide people with sufficient water in dry season. In wet seasons, these techniques retain rainwater and store it in the groundwater whereas in dry seasons, people are able to extract the water for beneficial use. Currently, these techniques are tested in Ninh Thuan Province in Vietnam. The differences in topography, hydrological processes, and soil may yield different results with these retention techniques. The project site in Ninh Thuan Province consists of 9 villages and is located in the driest part of Vietnam. Average rainfall is about 600 mm per year. The sea is close and slopes are steep, therefore the water is rapidly transported to the sea. In the dry season (December to June) people do not have enough water for consumption and irrigation. In addition to the relatively low rainfall and pronounced dry season, the water supply situation in this area has also worsened as a result of deforested land. In relation with construction of the dams and trenches, a field monitoring program has been defined (i) to observe the functioning of the implemented interventions, and (ii) to show impacts of the interventions on the hydrological processes (i.e. generation of floods and low flows) and water resources. To be able to develop water balances of the intervention catchment, two rainfall gauges (tipping bucket to record rainfall intensity) were installed. Furthermore, at the spillway of the existing reservoir downstream of the intervention catchment a diver was installed to record changing water levels which may be connected to the surface runoff. Locations for groundwater observation wells including their design were made. To be able

to develop modeling, soil data were collected. The observed data of this and future visit(s) will be used in two-types of hydrological model: one for the hill slope scale to simulate surface and subsurface water balance changes and one catchment model to simulate the impact at the catchment scale. This contribution will share the first results of these different efforts.