2.3 Project Overview

2.3.1 Construction of 15 rain water harvesting (haffir) in 15 states

Name of the Project	Construction of 15 Rain water harvesting (haffir) in 15 state
Introduction	The project aims at assisting the community in water stress areas by implementing one haffir in each state. It focuses on the most vulnerable areas that are prone to climate change and receive a reasonable amount of rainfall.
Objectives	Construction of the *haffirs* can help a number of villages to supply hygienic potable water for humans and livestock. The objectives of the rain-water harvesting development are to enhance availability and access to water, improve living conditions of both pastoralists and farmers, promote peace and stability and strengthen the resilience of the local communities to climate change.
Outcome	Providing easy access to water for people and livestock during dry seasons and increased water availability per capita at a reasonable price.
Relationship to the country's sustainable development priorities	The main adaptation benefits of *haffirs* can be summarized as: projects of water harvesting in some parts of the country have increased community access to reliable water, increasing their capacity to cope with the impacts of reduced precipitation, all of which has been integrated into the NAPA consultation process. Accordingly, these benefits can be attained in new locations where the intervention has not been introduced.
Project Deliverables	15 Rain water harvesting (*haffirs*), one in each state, which has varying capacities of storing water (depending on the rainfall intensity) ranging from 30,000 m^3 to 100,000 m^3. For human water consumption, the water stored in *haffirs* needs to be treated with filtrations to remove all possible contamination. For this purpose, slow sand filtration techniques are usually adopted. However, filter costs (slow sand filter/rapid sand filter/ pressure sand filter) are not included in the costs estimations. Two separate outtakes should be constructed for people and animals. An elevated tank with a reasonable capacity is usually provided to withdraw clean water.
Project Scope	The project is applicable for all areas between latitude 10 – 14 North a distant a part from the River Nile and its tributaries.

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Project activities	1. Identification of project target group beneficiaries in each state 2. Review of existing practices in water supply in the selected areas 3. Conducting environmental impact assessment studies 4. Selection of the best locations for the *haffirs* 5. Conducting soil analysis, infiltration rates, site specific requirements by field visits and design *haffirs*. 6. Awareness campaigns at stakeholder level and field visits to the existing RWH *haffir*. 7. Incorporation of water quality test and treatment for the rainwater before discharge for human consumption. 8. Construction of one *Haffir* in each state (total of 15 *Haffirs*). 9. Setup the scheduled maintenance and operation of the *Haffir* by the respective local government body 10. Training of the local staff/communities for regular cleaning of the intake channel
Timeline	1 year
Budget	Budget for construction of 15 haffir is 105,000 USD for two bulldozers (60,000 USD) and Caterpillar (45,000 USD)
Potential source of finance	Federal Government (Ministry of Water Resources and Electricity) State Government NGOs (IFAD, SOS, UNCEIF etc... Local components in kind (voluntary labour)
Measurement/evaluation	Quantity of water stored in *haffir* Period of water availability Prevalence of peace
Possible complications/challenges	Empty *haffir* before the dry season Clogging of the intake channel (*haffir* not filled by water) Water infiltrate to the groundwater storage
Assumptions	Stakeholders are willing to adopt the technology to reduce the cost of water supply from far places.

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Responsibilities	Ministry of Water Resource and Electricity should be responsible for scientific studies regarding the selection of suitable sites for the construction of *haffir*, beside the provision of experts. Ministry of Water Resources and Electricity should train the local people about the different activities of maintenance of *haffir* and rational use of the stored water. The traditional leader should allow the pastoralist to benefit from the stored water