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Technical Assistance: Improving the Efficiency and Sustainability of Water Harvesting Technologies through Capacity Building, Technology Transfer, and Research

Location: Sudan

Solution: Enhancing Water Harvesting Technologies and Capacity Building

UNEP CTCN grant: USD 186,650



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Sudan faces significant challenges in securing water resources due to extreme climatic variability, frequent droughts, and conflicts over water. The war, which erupted in 2023, has exacerbated the situation by damaging infrastructure and limiting access to advanced water harvesting technologies. As water becomes increasingly scarce, competition over resources heightens tensions between farmers and pastoralists, making sustainable water management a crucial factor for peace and stability.



Objectives

The project aims to address Sudan's water scarcity through modern water harvesting technologies. It will assess current water harvesting practices, build local capacity, and promote sustainable water management. Direct beneficiaries include government officials, researchers, farmers, and local communities, with specific emphasis on capacity building and gender inclusiveness.

- **Enhancement of water harvesting technologies:** Identify and implement innovative solutions suitable for Sudan's diverse climatic conditions.
- **Capacity building:** Train local stakeholders, including government officials, researchers, and community members, in the design, implementation, and management of water harvesting systems.
- **Research and knowledge sharing:** Produce and disseminate technical manuals and guidelines to support long-term sustainability.



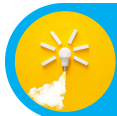
Climate Impact

- **Resilience to climate variability:** By improving water harvesting systems, the project helps communities cope with extreme climatic conditions, such as droughts and unpredictable rainfall.
- **Sustainable water management:** The introduction of modern, efficient water harvesting technologies reduces pressure on water resources, and minimizes water loss, including through reduced evaporation.



Security Benefits

- **Reduced conflict over water resources:** By increasing water availability, the project reduces competition between different user groups, such as farmers and pastoralists, which has historically led to conflict.
- **Stabilization of rural communities:** A stable water supply mitigates migration pressures helping prevent displacement due to scarcity.
- **Supporting peacebuilding efforts:** By integrating conflict sensitivity into water management, the project contributes to long-term peace and security in the region.



Social Impact

- The project will directly benefit local communities, including **farmers and pastoralists** who rely on water harvesting for both agriculture and domestic use.
- By training 150 individuals, it enhances local capacity to manage and maintain water harvesting structures.
- In addition, women and youth are particularly targeted, as they are most affected by water scarcity and have limited access to technical training. The project will empower them through participation in water management processes.



Food Security

- **Sustained agricultural productivity:** Improved water harvesting technologies ensure a consistent water supply for crops and livestock, bolstering food security.
- **Enhanced livelihoods:** By securing water for irrigation, the project helps rural communities maintain their agricultural activities, improving overall food availability and economic stability.



CS Climate Technology

- The project introduces innovative water harvesting systems in the form of locally adapted technologies, such as hafirs (water reservoirs), dams, and weirs, designed to meet the specific needs of different regions in Sudan.
- These technologies are tailored to improve water storage and reduce evaporation.



Replication Potential

- The project can be replicated in other arid and semi-arid regions of Sudan and neighboring countries facing similar water challenges.
- The knowledge-sharing aspect, including the training of local stakeholders and the production of technical manuals, ensures that other regions can adopt the same technologies and methods.

