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Fog Collection Pilot Project (FCPP) in the Eastern Escarpments of Eritrea

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Eritrea is water scarce country that relies heavily on underground water reserve and more than 80% of the rural population does not have access to safe and clean drinking water. In the rural areas, shallow hand dug wells are the primary sources of water and in most cases their discharge rate is deteriorating due to the recurrent drought. Particularly, in the targeted project areas underground water reserve is hard to find due to the steep topography. However, in these parts of Eritrea one will find a sector of mountains, about 700 km long, where the wind transports moist air from the Red Sea forming fog on the highlands. The area of the FCPP is the region of Maakel, near the villages Nefasit and Arborobu. The overall objective of his FCPP was to provide supplementary water supply system from large fog collectors (LFCs) in order to increase access to safe and clean drinking water in the targeted Schools and surrounding villages. Communities and students were organized to participate in the implementation of the project. Forty LFCs were established in all the targeted areas in previously evaluated potential locations.
The project was implemented by Vision Eritrea, a National NGO in partnership with the country's' Water Resource Department; Fog Quest a Canadian NGO and Water Foundation, a German NGO, who also funded the project. The FCPP focused on introducing a new innovative water harvesting technology which is a crucial element for the survival of the people in the mountainous escarpment of the country; and with prospect of locally owned solutions for a sustainable management of and access to natural resource. Preliminary evaluation of the project showed that there was a good production of fog water, with an average of 6-8 litters/m2/day on the low intensity of fog and from 12 -18 litters on the high fog intensity. A functional water committee was established and trained on water management and maintenance of the LFC. They also developed water bylaw by which the water committee manages the water supply system. Similarly, the fog collectors have also been proved indeed to collect rain water during the wet seasons. This will extend the water harvesting period of the LFC within a year. The new fog harvest technology will further be developed in the target areas and in the long term is expected to help decrease poverty, improve food security and have a positive impact of the livelihood of target communities and neighboring villages. As a result, its dissemination and the mainstreaming of the action will be greatly facilitated to other similar part of the country where water can be harvested from fog.