

The PCCWA project will target a total of 13,500 households in Region I with 1,500 households accessing water from small dams, 10,000 households accessing water from wells built to be resilient to floods and 2,000 accessing water from boreholes/tube wells.

In order to evaluate the impact of the proposed project, a number of verifiable and measurable indicators have been proposed. Listed below are some of the verifiable indicators (see the rest in the Project Matrix in Annex IIa):

1. The number of people/households accessing quality water for domestic consumption and production by 2018,
2. The number of households with access to water for production during the dry season or drought by 2018,
3. The number of people who have their water sources/utilities protected by 2018,
4. By 2018, appropriate regulatory and legal framework processes in place in the environment and natural resources sector to support efforts of climate change adaptation,
5. By 2018, manpower with better skills and experience for designing and constructing technologies is developed, and
6. By 2018, Monitoring and Evaluation systems of the Ministry of Lands, Natural Resources and Environmental protection in the project areas of Region I is strengthened.

### 1.2.3 Scope and Implementation

Three technologies were identified at TNA stage and will be diffused through the proposed Pilot Project on Climate Change and Water access as follows:

1. Rainwater harvesting through small reservoirs and micro-catchment technology to ensure easy access to a reliable source of water for drinking for human beings and livestock and agricultural production such as irrigation of crops especially during seasonal dry periods and during periods of droughts. The pilot project will install 15 small dams to target 1,500 HHs for water supply and animal watering for communities in Region I.
2. Installing boreholes/tube wells for domestic water supply to ensure access to water during droughts or prolonged dry periods. The pilot project will install 200 boreholes/tube wells to target 2,000 HHs for communities in Region I.
3. Improving the resilience of protected wells by building a concrete apron/collar on the well to ensure good quality water in situations of increased occurrence of floods. The pilot project will install/improve 10,000 wells to target 10,000 HHs who are affected by the seasonal floods that brings up the problem of access to clean water.
4. Contributing to the regulatory and institutional environment that supports adaptation to climate change by way of lobbying relevant government ministries.

#### 1.2.3.1 Rainwater harvesting – Small reservoirs and micro-catchment

##### Outputs and Verifiable Indicators

The expected output for this option of the pilot project as tabulated in Annex II below (Project Matrix) is the number of small dams constructed for given communities in Region I. The verifiable indicator for this output is the construction of 15 small dams (small reservoirs & catchments) for 1,500 households by Year 5 (2018).

## Activities

In order to achieve the expected outputs, some of the global activities that will be undertaken include the following: -

- Undertake feasibility studies of the proposed areas for the project;
- Procure contractor(s) through a tender process;
- Mobilize: (a) Community Forums (CFs) by forming new ones or use existing ones; (b) Local resources (human, materials) in the selected areas;
- Conduct Social and Environmental Impact Assessment (SEIA) studies;
- Construct 15 small dams
- Build capacities of the CFs in water and sanitation, hygiene, dam maintenance and management, project management and communication skills.
- Engage and dialogue with government on subsidies on equipment and materials for climate change adaptation
- Conduct quarterly and annual reviews and mid and final evaluations

## Timelines and Budget Requirements

The pilot project is intended to run for a period of five years from 2014 to 2018. The preliminary cost during the five year period is estimated at US\$4.8 million. There are not many projects helping to construct dams. Interest is nevertheless growing given the realization that small dams can play a vital role in enhancing the resilience of households in rural communities already adversely affected by climate change. It is suggested that this interest be explored. The African Development Bank under the African Water Facility (AWF) already in August 2012 gave Zambia a grant of €950,000 *"to support a project to help the Government of Zambia develop, test and adopt updated guidelines, which will be used as framework for programming as well as designing the financing, construction and operations of multi-purpose small dams"*.<sup>2</sup> The AfDB AWF window can thus be explored as a possible source of funds. Climate Funds Initiatives could also be explored for this purpose.

## Challenges

The following were some of the challenges identified.

- The difficulty of mobilizing all stakeholders and ensure that they fully participate in the project and remain engaged from inception to completion. To mitigate the risk, there is need to ensure ownership of the project from the start and that the project is executed timely with demonstrable results so that its benefits are clear to all.
- The challenge of ensuring optimal cost-sharing between project funders and the community so that there is local ownership and good prospects for sustainability of the project. A common approach on this is for communities to contribute labour and other local materials to the project. However, households already face labour challenges. A realistic assessment should thus be made at the beginning as to what the beneficiaries can do
- The difficulty of ensuring adequate and timely disbursement of project funds. An effective Project Implementation Unit (PIU) should be put in place to mitigate the risk.
- Procurement bottlenecks that could delay project execution. This also requires an effective PIU.

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<sup>2</sup> <http://www.afdb.org/en/news-and-events/article/african-water-facility>, 26<sup>th</sup> September, 2012

- There is no improvement takes place in the supportive environment. A component has been provided for to advocate for an enabling environment for climate change adaptation projects in the water sector.

### ***1.2.3.2 Boreholes/Tubewells for domestic water supply***

#### **Outputs**

The expected outputs for this option is the installation of boreholes for communities in Region I are to install 200 boreholes targeting 2,000 households in Region I by the year 2018. The Verifiable measurable indicator for this output is the construction of 200 boreholes for 2,000 households.

#### **Activities**

Activities for the borehole/tube wells component are similar to those in Section 1.2.3.2 above.

#### **Timelines and Budget Requirements**

This is a five year project expected to start in 2014 and end in 2018. Preliminary cost is estimated at US\$2.7 million. There are a many projects for the drilling of boreholes in Zambia carried out by the Government of the Republic of Zambia (GRZ) and non-state actors. As an example, the GRZ on 11<sup>th</sup> February 2011 invited bids for the drilling of 1,500 boreholes under the National Water Supply and Sanitation Programme (NRWSSP) executed with a UA 15 million loan from the AfDB. The boreholes were to be sited in Luapula and Northern Provinces. In view of the fact that there is an absence of projects under the water sector which have a strong focus on climate change adaptation, the drilling of boreholes/tube wells under the proposed pilot project could thus be incorporated and funded from the ongoing projects such as the NRWSSP.

#### **Challenges**

The risks and how to mitigate them are similar to initiatives under Section 1.2.3.2 above.

### ***1.2.3.3 Building a Concrete Apron/Collar on the well***

#### **Outputs**

The third component of the Pilot Climate Change and Water Access project is proposed to construct concrete apron/collars on the wells targeting households in Region I by 2018. The verifiable indicator for this output is the construction of 1,000 facilities for 10,000 households by year 5 (2018).

#### **Activities**

Activities for the borehole/tube wells component are similar to those in Section 1.2.3.2 above.

#### **Timelines and Budget Requirements**

The pilot project is envisaged to take a period of five years from 2014 to 2018. Preliminary cost for this option is estimated at US\$4 million. The source of funding is similar to that of boreholes/tube wells component of the pilot project.