CLIMATE CHANGE MITIGATION AND ADAPTATION

THE IMPACT OF EXTREME CLIMATE EVENTS ON HYDRAULIC DRINKING WATER SUPPLY WORKS

BACKGROUND

The national inventory of modern water points in Mali showed that the failure rate for human-powered water pumps (HPWPs) is around 30%, and that the rate of wells drying up is 35%. The causes of these problems are generally explained by a lack of maintenance or monitoring of the beneficiaries. Faced with this situation, people and animals are often forced to move from their sites of origin to more favourable areas, resulting in a concentration of people and animals around water points that are unable to support this pressure. Conflicts therefore frequently arise around these water points, degenerating into community conflicts.

In this context, we are interested in the impact of the effects of climate change on drinking water supply works, and in particular the impact of extreme climate events such as heavy rainfall and strong winds.

DESCRIPTION

In order to produce this study, we carried out surveys in two districts in the Koulikoro Region (Nara and Kangaba) to identify the causes of waterworks failures. We supplemented the surveys with the results from inventorying modern water points in the Koulikoro Region. The results obtained are summarised in the table below:

Threat category	Outcome	More sensitive area	Recommendation
Flooding	Submergence of infrastructure, resulting in temporary inaccessibility and water quality degradation	Cercle de Kangaba	Renforcer et surélever les têtes (superstructures) des forages, et 'aménagement autour des puits dans des zones à risque d'inondation.
Infrastructure degradation	Kangaba Cercle	Reinforce and elevate wellheads (superstructures), and landscaping around wells in areas at risk of flooding.	Faire des forages profonds équipés de pompes solaires avec des côtes d'installation profondes -Faire des puits profonds
	Dégradation des ouvrages, effondrement des puits	Cercles de Kangaba et Nara	L'emplacement des infrastructures doit tenir compte des zones à risque (abords des rivières, flancs des collines, etc.)
Drought	Temporary, periodic and localised water shortage	Nara Cercle	Deep boreholes fitted with solar pumps, with deep installation

IMPACT

The results from this study allowed the Regional Water Directorate and the Koulikoro Region to note that the high rate of breakdown for works is due not only to the lack of maintenance and the lack of monitoring of the beneficiaries, but also to natural factors playing a significant role in the degradation and breakdowns. It was also recommended that the effects of the extreme climatic events should be taken into account when implementing works, or that measures should be taken to adapt vulnerable works in view of the phenomenon.

LESSONS LEARNED

To carry out a project within this field successfully, an in-depth understanding is needed of the concept of climate change and associated phenomena.

Country: Republic of Mali

Sector: Water

Key words: Hydraulic works, Climate change, Mali (Sahel)

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