



CONSERVATION INTERNATIONAL



the Jane Goodall Institute

The Nature Conservancy



WCS



WORLD RESOURCES INSTITUTE



# AFRICA BIODIVERSITY COLLABORATIVE GROUP

---

## Summary of Health Monitoring Protocol: One Health Project in South Africa

March 2017

Conservation South Africa (CSA) commissioned consultant Mr. Bandile Ndlazi to develop a health monitoring protocol report for the One Health Project in the Eastern Cape of South Africa in the spring of 2017. The purpose of the report is to guide monitoring efforts for CSA and its partner the Alfred Nzo District Management (ANDM), for activities related to livestock herding, water access, community livelihoods, and human and ecosystem health. This overview of the report summarizes the key findings and monitoring framework.

The full report includes research findings and data detailing community perceptions and behaviors regarding water management, use of sanitation and hygiene facilities, and livestock management practices in the target communities in ANDM. The data was used to construct the health monitoring framework for CSA and partner staff to use in the course of their project implementation. This activity falls under the Africa Biodiversity Collaborative Group's (ABCG) thematic working group on Global Health Linkages to Biodiversity Conservation: Fresh Water and WASH integration.

### INTRODUCTION

Sub-Saharan Africa is under increasing pressure from population growth, urbanization, and consumption, as well as poorly-planned infrastructure development. These factors negatively impact freshwater biodiversity, and the quality and availability of freshwater resources. Climate change further contributes to water stress across Africa. Effective biodiversity conservation requires empowering local communities and authorities to address the root causes of human-induced pressures, including limited community access to water resources and poor resource governance.

In South Africa's arid Eastern Cape Province, the headwaters of the Mzimvubu River--South Africa's last free-flowing river--supply water to over one million people. CSA and partners have been working since 2011 in the ANDM to implement the One Health initiative in the Maputaland-Pondoland-Albany Hotspot to improve conservation and human well-being outcomes. The One Health initiative's objective is to integrate water, sanitation, and hygiene (WASH) activities with rangeland management and conservation programs to improve the health of people, animals, and ecosystems.

CSA is applying this framework in the upper reaches of the Mzimvubu Catchment to improve water resource sustainability and resilience to threats, including climate change. Alongside the district government and local partners, CSA has trained community volunteers in water quality monitoring to promote awareness of how to protect water sources and improve sanitation practices. Local community members have also been engaged to protect and restore freshwater springs and understand how livestock grazing practices are impacting their sources of water for household and domestic use.

In general, inequalities in social and economic status play a significant role in water and sanitation access in South Africa. While urban areas of the country have high rates of piped water on their premises, the rural areas have

coverage of only 38 percent (UNICEF and WHO 2015). The Alfred Nzo District is among the areas most prone to high rates of waterborne diseases, with 33 percent of households lacking adequate water access (Hemson 2016).

As a result, the incidence of diarrheal disease and other health issues is common yet could be easily prevented through safe drinking water and adequate sanitation and hygiene.

## **METHODOLOGY**

As a first step to building the monitoring protocol, the consultant performed a landscape assessment to take a closer look at the WASH challenges faced by livestock herders, their families, and their immediate communities and how these challenges affect their well-being and livelihoods. The findings from the assessment informed the design of the health monitoring protocol. The health monitoring protocol guides CSA's ongoing monitoring efforts.

The primary research questions included:

- What are the current WASH needs for the herders and their immediate communities?
- Are there any needs for behavior change practices in the population in question?
- What are the key environmental and behavioral determinants for waterborne diseases in the Alfred Nzo District?

The survey population consisted of community members permanently residing in the target villages within the Alfred Nzo District. The information was gathered from different respondents and informants comprising herdsmen, community members, and health care personnel from the Alfred Nzo district.

The consultant used comparative data analysis to create a context for evaluating these findings, drawing from qualitative and quantitative data analysis and focus group discussions. Key informant interviews were also conducted with nurses from the local clinics. Onsite visual inspections to locate the presence of water sources, sanitation facilities, and handwashing facilities were also observed as part of the research.

In April 2017, a cross-sectional survey was performed in the rural setting of Matatiele in the Eastern Cape. During this survey, 20 households were randomly selected and one member of the household (head of household over 18 years old) was interviewed. One-off interviews without follow-ups were conducted, and data was collected from proxy respondents from each household. The data included self-reporting of behaviors from herders and immediate communities. Some of the questions included a limited barrier analysis (looking at enablers and barriers to behavior change) that could be used in designing relevant programmatic interventions.

The consultant interviewed nurses at three health centers to gather information on the health behaviors of the residents of the catchment, availability of essential services, the most common illnesses attended to in the health facilities, drugs and proximity to the population in case of need to seek treatment. Information was collected on water storage practices, water treatment methodologies and sanitation and hygiene, water borne diseases, and on other related health issues.

## **FINDINGS**

Based on the data collected, the following key findings were identified:

- From the health care provider's perspective, the most serious issues in Matatiele villages are the lack of improved and safe water sources, lack of improved sanitation facilities, and poor hygiene practices. While the health care practitioners mentioned there has not been a serious outcry in terms of reporting water and sanitation-related diseases or any waterborne disease outbreak from the community, they felt that there is a need to improve the functionality of water points

and sanitation facilities and promote good hygiene behavior to prevent diseases at the community level.

- The main sources of water reported are protected dug wells, rain water collection, and unprotected dug wells, rivers, and streams. More than half (55%) of the respondents reported to accessing water for domestic use in protected dug wells, while 35% reported to be sourcing water from rain collection. Unprotected wells, rivers, and streams were also mentioned as sources of water for domestic purpose. In light of this, it is clear that there is need to address appropriate and safe means of collecting water for domestic purposes from these unprotected sources in order to avoid threats of waterborne diseases. Additional findings around water access noted that about 74 percent of respondents fetched water not too far from their premises, with the majority of them (95%) requiring less than 30 minutes to fetch water from their respective water outlets during both the rainy and the dry season.
- Twenty-two percent (22%) of respondents reported they did not have access to toilets inside their households, while 12% reported being able to use their neighbor's toilet and 10% reported relieving themselves in an open field. Even though most respondents had sanitary facilities, there was concern that construction of improper sanitary facilities and incorrect sanitation practices are common in the areas examined, hence a need for sanitary education. On waste disposal, eighty percent (80%) of the participants reported burning household waste and 80 percent reported that they discharge their waste in open drains and pour used water in an open field.
- Four waterborne-diseases were experienced by respondents in the past - simple diarrhea, blood-stained diarrhea, skin problems, and intestinal worms. Many of the respondents (30%) reported having experienced intestinal worms among members of their family. Less than half (45%) of the respondents reported that they sought medical attention when they experienced the illness. When they did seek treatment, it was either sought in a government / mobile health facility (40%) or at a pharmacy (10%). When asked if respondents knew about methods for preventing the common waterborne illnesses, less than half (45%) of the participants said yes. However, more than half (55%) reported not being informed about methods for preventing waterborne disease, hence there is a great need to increase knowledge on prevention of waterborne diseases at the household level that needs to be addressed.
- A majority (65%) of the respondents reported that their livestock (chickens, goats, sheep, and cows) were not immunized, meaning they were never sent to the dipping tank. According to the Animal Identification Act (Act No. 6, 2002) (AIA), The permanent marking of cattle, sheep, goats, and pigs is compulsory in South Africa. The aim of this act is to manage the National Register for Animal Identification (AID), a mark that acts as a first line of defense against stock theft, enhances identification of property, and supports traceability. Only 35 percent of the respondents reported that they have stock identification certificates for their livestock. In cases where animals show signs of illness, respondents (65%) reported that they have experienced cases where their livestock gets sick without knowing the cause. Seventy-five percent (75%) of respondents reported that they seek treatment for sick livestock. In cases where an animal dies naturally, a majority (70%) of the respondents reported that they slaughter and consume the meat.

## RECOMMENDATIONS

Based on the findings and data, the consultant proposed the following next steps:

- Conduct a series of awareness-raising activities based on the development of curriculum. Herdsmen and immediate communities require a focused and contextualized curriculum that will adequately address issues of environmental management. The curriculum should place more emphasis on awareness-raising activities that are inclusive of water management, hygiene, the prevention of water contamination as a result of improper fecal and solid waste disposal.
- Monitor activities on an ongoing basis by leveraging community structures, particularly ones that include women and children. A multi-sectoral approach should be adopted. Interventions and projects must be implemented with various government departments to ensure that they comply with the set standards so that the environment and other resources are properly managed in alignment with the municipal plan.
- Emphasize the multiple uses of water as another approach to managing the environment. Waste water from boreholes can be harvested and used for other purposes, including irrigation of small scale community income generating activities. The curriculum should also try to address misconceptions around the use of “grey” water.

The following additional activities will be implemented to ensure self-sufficiency of beneficiaries and the sustainability of the project:

- Measures to protect water sources (open dams) should be discussed with the municipality.
- Separation and allocation of water sources to ensure that their use is strictly designated for either human or animal consumption to avoid contamination.
- Training of local artisans for water source maintenance and rehabilitation.
- Development and training of local WASH committees.
- Training of community members, including the herders as trainers.
- Design interventions to educate individuals about drinking water treatment methods, sanitation, and hand washing practices.
- Develop family-centered educational programs that would enhance awareness about water treatment methods that are cost effective and easily accessible.
- The tendency by community members of slaughtering sick or dead animals is high, hence there is a need for education on the dangers of using such for human consumption.

## MONITORING FRAMEWORK

The framework will be used to regularly collect data on project progress and outcomes.

<b>Outcome 1: Increased access to sustainable and safe water supply for herdsmen, their families, and immediate communities</b>		
1.1 Access to improved drinking water source for herdsmen, their families and immediate communities	Access is defined as year-round safe drinking water supply of 20 liters/day/person within 30 minutes round trip of community member's homes. Safe drinking water is determined and defined according to WHO guidelines and nationally agreed procedures for water quality testing and reporting. Equity and Inclusion considered.	Number of people reached with safe water
		Number of successful boreholes completed, commissioned and in use by communities.
		Number of taps installed from successful water supply systems
		Number of non-functioning water supply systems rehabilitated (hand pumps, mechanized and solar pumps, protected springs, piped water systems and rainwater harvesting systems).
1.2 Practicing recommended household/centralized drinking water treatment strategies	Based on initial source water quality assessments and designated treatment strategies, if needed.	Number of trainings conducted on drinking water treatment for herdsmen households and communities
		Number of households with water treatment products to disinfect drinking water (e.g. chlorine-based products, P&G packets, etc.)
<b>Outcome 2: Increased access to improved sanitation for herdsmen, their families, and immediate communities</b>		
2.1 Open Defecation Free (ODF) Communities and prevention of ODF with a potential to contaminate water source	ODF certification process is the official recognition of ODF achievement and other required hygienic conditions in a community or group of communities	Number of communities certified as ODF.
2.2 Household sanitation improvement	Access defined as year-round excreta disposal facilities that can effectively prevent human, animal, insect contact with feces. Latrines should be easy to clean and have no foul smell. Latrine requires privacy, distance, gender, disability and child-friendly considerations.	Number of communities trained in sanitation benefits and technologies.
		Number of improved or basic sanitation facilities constructed by community members or subsidized
<b>Outcome 3: Improved hygiene knowledge and behavior change practices for herdsmen, their families, and immediate communities</b>		
3.1 Hand washing with soap or ash at critical times and contexts	Handwashing at critical times; dishwashing and using dish racks, food storage, safe water transport and storage	Number of people practicing better hygiene and appropriate behavior changes
		Number of communities that have received training in hygiene promotion and behavior change practices.
		Number of school children that have received training in hygiene promotion and behavior change practices.
3.2 Access to improved hygiene facilities	Access implies affordability and year-round supply. Common use is related to effective behavior change approaches	Number of hand washing facilities installed
		Number of hand washing facilities installed and in use by schools
<b>Outcome 4: Communities and other stakeholders empowered to facilitate sustainable WASH interventions and services</b>		

4.1 Communities with functioning water committees that ensure Inclusive WASH and sustainable financial management	Functioning defined as committees with financial resources and gender sensitivity. Committees can include institutions, governments, community user associations, community water committees and others.	Number of WASH committees formed and trained or reactivated with fees collection systems and ensures Inclusive WASH for herdsmen.
4.2 Adequately functioning private sector support for WASH improvements (soap, replacement parts, service delivery)	Adequately functioning is defined through a quantifiable scoring system. Capacity building of potential WASH entrepreneurs in business management, including the facilitation of links with microfinance institutions and other business partners.	Number of artisans and local entrepreneurs (pump mechanics, plumbers, latrine slabs and superstructure fabricators) trained in repairs, maintenance and construction of WASH facilities.

Notes: data collection will be monthly or annually

## CONCLUSION

Through the One Health project, CSA could use its existing relationships and vocal power to assist herdsmen, their families, and immediate communities to address the current WASH issues. CSA can play a role in empowering people to advocate for their needs to their municipal office and local leadership. The most prominent advocacy issues are:

- Rehabilitation of non-functional water sources;
- Regular water testing and reporting back to the water committee by the environmental health division;
- Assistance with precautionary measures for preventing water contamination from the source to the reservoir and while remaining in the reservoir; and
- Support for livestock owners in monitoring use of over-the-counter antibiotics for livestock.

## REFERENCES

Hemson, D. Water, sanitation and health: South Africa’s remaining and existing issues. In: Padarath A, King, J, Mackie, E, Casciola, J (Ed). South African health review 2016. Durban: Health Systems Trust.

Conservation South Africa. March 2, 2015. Replenish Africa Initiative (RAIN) Concept Note. Unpublished.

Ndlazi, B. July 2017. *Health Monitoring Protocol: One Health Project*. CSA and CI: Africa Biodiversity Collaborative Group. Unpublished.

United Nations Children’s Fund (UNICEF) and the World Health Organization (WHO). 2015 Progress on sanitation and drinking water – 2015 update and MDG assessment. Geneva, Switzerland: WHO.

----

The Africa Biodiversity Collaborative Group (ABCG) is supported by the US Agency for International Development (USAID) to advance understanding of critical biodiversity conservation challenges and their solutions in sub-Saharan Africa. ABCG is hosted by the Wildlife Conservation Society (WCS), in coalition with the African Wildlife Foundation (AWF), Conservation International (CI), the Jane Goodall Institute (JGI), The Nature Conservancy (TNC), World Resources Institute (WRI) and World Wildlife Fund (WWF). The goal of ABCG is to work collaboratively, efficiently and effectively to further a sustainable future for the African continent (ABCG 2016).

This report was made possible by the support of the American people through the United States Agency for International Development (USAID) under the terms of Cooperative Agreement No. AID-OAA-A-15-00060 - WCS. The contents of this report are the sole responsibility of the Africa Biodiversity Collaborative Group (ABCG) and do not necessarily reflect the views of USAID or the United States Government. This publication was produced by Conservation International and Conservation South Africa on behalf of ABCG.