



Food and Agriculture
Organization of the
United Nations



#08 ISSUE

© FAO/Fábio De Sousa

AGRICULTURE WORKING GROUP (AWG) CABO DELGADO

NEWSLETTER | AUGUST 2023



The Agriculture Working Group (AWG)/Cabo Delgado meeting took place on 29 August 2023. Valere Nzeyimana, Senior Water Development and Management Officer, from the Food and Agriculture Organization of the United Nations (FAO), Regional Office for Africa (RAF), presented the topic *“Pre-Feasibility study towards investing in community water and management for peace and security in Cabo Delgado.”* The meeting was co-chaired by the government through the Provincial Directorate of Agriculture and Fisheries (DPAP) and FAO.

Key Highlights:

- Most smallholder farmers in Cabo Delgado province rely on rainfed agriculture for their subsistence as there are a limited number of water sources available for agriculture-based interventions such as crop production, fish farming and animal rearing. Rehabilitating existing dams and lakes, diverting water courses, and harvesting rain or flood water can create water opportunities for agricultural and domestic use.
- Considering the challenges that include water scarcity, land degradation, demographic pressures as Internally Displaced People (IDPs) move from their districts of origin to the southern districts, and problems posed by climate change, it is important that sustainable landscape management be linked to sustainable water use and land conservation.
- One of the main challenges of using irrigation schemes in Mozambique is the high costs of electricity and fuel. Therefore, solar-powered irrigation systems - a clean technology for irrigation – should be considered a priority in agriculture planning and interventions for irrigation, domestic use, and animal rearing.
- The Mozambican Government, FAO and other agriculture-based livelihoods partners should conduct an assessment to examine the factors influencing the probability of adoption of irrigation technology by farmers in Cabo Delgado. This initiative should also involve research institutes (e.g. universities and the Mozambique Agriculture Research Institute – IIAM) and extension services. This study will also inform how the insecurity in Cabo Delgado can influence the exploitation of the existing waterboard in the communities.

Pre-feasibility Study Towards Investing in Community Water and Management for Peace and Security in Cabo Delgado.

Water in the Agenda 2023

Water is essential for achieving the 2030 Sustainable Development Goals (SDGs) as it underpins multiple facets of human well-being and environmental sustainability. Access to clean and safe drinking water, as outlined in SDG 6, is fundamental for good health, poverty reduction, and gender equality. Additionally, water is crucial for agriculture, energy, and industry (SDG 7, SDG 9), driving economic growth and infrastructure development. Sustainable water management practices, emphasized in SDG 12, are key to preserving ecosystems and addressing climate change (SDG 13). Water's significance extends to biodiversity and aquatic life, supporting both life on land and below water (SDG 14, SDG 15). Recognizing water's vital role across various SDGs is essential for fostering a more equitable, healthy, and sustainable world by 2030.

WATER WITHDRAWALS

Globally, agriculture constitutes 70 percent of total water withdrawals. The distribution of water usage in agriculture also varies along with economic development, as higher-income countries typically allocate a larger portion of their water resources to domestic and industrial needs as opposed to agricultural uses. It is foreseeable that there will be increasing demands on water resources from non-agricultural sectors as economies develop.

At a global level, blue water (water that is found in lakes, rivers, and reservoirs) withdrawals for agriculture vary regionally but account for over 90 percent of withdrawals in some areas, including some key centres of agricultural production.

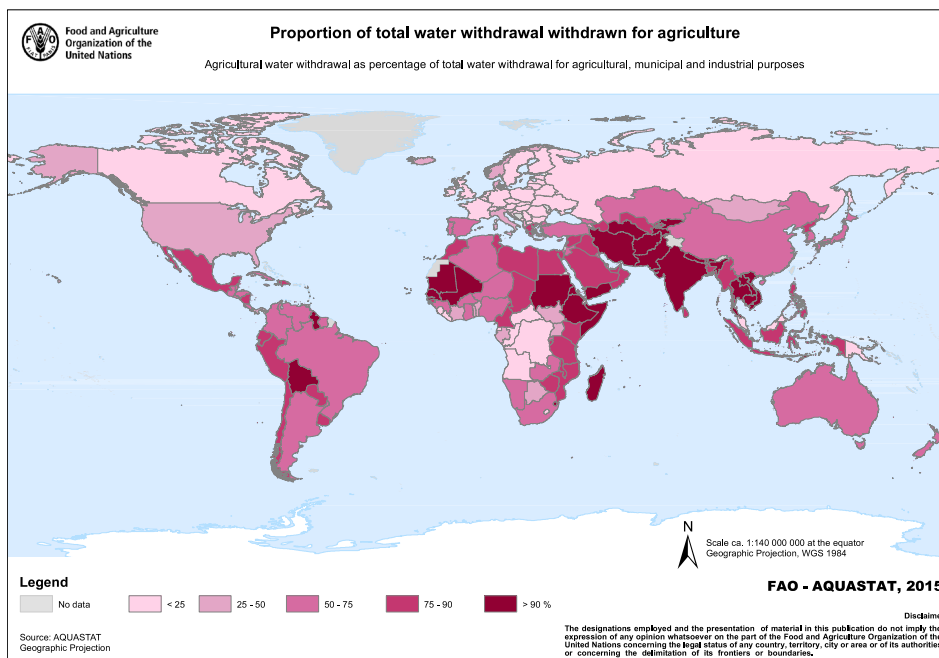


Figure 1: Proportion of total water withdrawal for agriculture. FAO – AQUASTAT 2015.

FUTURE IMPORTANCE OF IRRIGATED AGRICULTURE

To meet the growing needs of the world’s expanding population by 2050, food production must increase significantly, estimated at 70 percent, as highlighted by the United Nations in 2009.

During the 1996 World Food Summit, FAO projected that around 60 percent of this additional food requirement in the future should come from irrigated agriculture.

Despite occupying only 20 percent of the total cultivated land, irrigated agriculture accounts for 40 percent of the total global food output¹. This underscores the vital contribution of irrigation methods in providing sustenance and ensuring food security on a global scale.

PROJECTED IMPACTS OF CLIMATE CHANGE IN AFRICA

Water holds immense significance for the growth and development of developing countries. However, many of these countries grapple with limited investments in water infrastructure, such as irrigation systems, dams, and groundwater management, leading to inadequate water storage capacities to meet their growing demands. In Africa, the most substantial reductions in water discharge are anticipated in its largest basins, including Niger, Chad, and Senegal, potentially reaching 40 to 60 percent reductions. These reductions could have far-reaching implications for agricultural and economic stability in

these regions.

Projections for the year 2050 paint a concerning picture for Sub-Saharan Africa, where the areas facing water shortages are predicted to expand by 29 percent. This could lead to an escalation in the number of African countries experiencing water stress, impacting the lives of approximately 600 million people.

Furthermore, the dynamics of transboundary water basins in many regions exacerbate conflicts over water resources. These conflicts, driven by the shared nature of these basins, are likely to intensify, posing additional challenges to the already vulnerable water situation in developing nations.

CURRENT SITUATION IN CABO DELGADO

The conflict in Cabo Delgado, northern Mozambique, has impacted the region’s agricultural activities and disrupted livelihoods since 2017. As a result of this protracted crisis, food insecurity has reached alarming levels, affecting more than 690 000 people who find themselves in Integrated Phase Classification Phase 3 or above in 2023².

The humanitarian crisis has been exacerbated by a significant increase in the number of IDPs, surging from 110 000 in March 2021 to surpass one million by November 2022. This displacement has left these individuals particularly vulnerable to hunger and poverty.



¹The World Bank, *Water in Agriculture*

²Mozambique IPC Acute Food Insecurity Analysis, November 2022 – March 2023

From November 2022 to March 2023, there was a 19 percent reduction in the number of IDPs, with the current count, as per the recent report from the International Organization for Migration Displacement Tracking Matrix, standing at over 834 000 IDPs, alongside more than 420 000 returnees in northern Mozambique³. [Note: Since the AWG/Cabo Delgado meeting in August IOM has released the Mozambique Mobility Tracking Assessment Report 19]⁴.

Within this context, FAO proposes to work with the Government of Mozambique and partner organizations to invest in agriculture-based livelihoods. This initiative aims to empower vulnerable communities to produce their own food and diversify their income sources to achieve better food and nutrition security and become more resilient to unexpected future shocks. By restoring the productive capacity of these communities, FAO seeks to address both immediate humanitarian needs and contribute to the long-term sustainable development of the region.



©FAO/Fábio De Sousa

³ International Organization for Migration (IOM), May 23 2023, DTM Mozambique — Mobility Tracking Assessment Report 18 (April 2023), IOM, Mozambique

⁴ International Organization for Migration (IOM), Sep 11 2023, DTM Mozambique — Mobility Tracking Assessment Report 19 (August 2023), IOM, Mozambique



© FAO/Cassio Dimande

FAO Field Mission to Assess Opportunities for Current and Future Community Water Resources in Cabo Delgado

From 14 - 29 June 2023, Valere Nzeyimana, Senior Water Development and Management Officer at FAO, RAF, conducted a mission to the districts of Ancuabe, Chiure, Montepuez, Mecufi and Namuno, all in Cabo Delgado (Table 1) to assess:

- The opportunities for the Government of Mozambique, FAO, and agriculture-based livelihoods partners to invest in water infrastructure in Cabo Delgado.
- The potential for irrigation to enable year-round production, not only for food and nutrition security but to also contribute towards easing tensions between the communities around the utilization of natural resources.

Findings and recommendations following the mission would:

- Inform the joint FAO, World Food Programme (WFP) and UN-Habitat joint proposal currently being developed under the facilitation of the Peace Building Support Office for submission for consideration to the Peace Building Fund.
- Provide a basis for FAO's northern Mozambique longer-term agriculture livelihoods resilience strategy being developed under the leadership of the FAO Subregional Emergency Office for Southern Africa.

No	Distict	Village	River	Intervention	Observation
1	Chire	Titimar	Titimar and Naputa	-	-
2		Manangane	Nnatecu, Nhpupia, Namicoco and Megaruma	Rainwater retention	Rainwater harvesting for agricultural purposes
3		Mahipa	Lagua river	To be assessed	A priority for Chiure district
4		-	Mecopote river	To be assessed	Small earth dams and dugout dams for water storage and pumping facilities
5		-	Nopo River	To be assessed	-
6	Ancuabe	-	Nanhassa river	Nanhassa dam	Rehabilitation
7		-	Bonge (Muaguide)	Bonge dam	Rehabilitation
8	Ancuabe	-	Muaguide river	To be assessed	New
9		-	Xituetue river	Xituetue dam	Cobblestone masonry dam
10	Montepuez	-	Nakoi river	Rainwater harvesting	Would availing water lead to agriculture or to more gold-digging?
11		Nicanda	Inani river	Nicanda Dam	Rehabilitation
12		Mondlane small village	Nropa River	Nicanda Dam	Rehabilitation
13	Namuno	Megaruma - Mithale junction	Megaruma river	-	New
14		Melco	Naovelo	Naovelo Dam	Rehabilitation
15	Mecuti	Paranhupo	Paranhupo	Paranhupo 1 Scheme	Aldeia Paranhupo is a large village of 3 360 people.
16			Namitelia	Paranhupo 2 Scheme	The Paranhupo 1 and 2 schemes use shallow groundwater
17	Mecuti	Nambane	Nacaca	Nacaca Dam	Rehabilitation
18		Natuco	Shallow groundwater	Pumping	New
19		Mathote	Megaruma	Floodplain	Not visited due to bushfire
20	Mecuti	Fevereiro	Theka river	-	Salty shallow groundwater

Opportunities to be explored

LAGUA RIVER, MAHIPA COMMUNITY, CHIURE DISTRICT

There are considerable options and opportunities in community water and management towards building a peaceful coexistence between IDPs, host communities and returnees in Cabo Delgado through the rehabilitation of existing water infrastructures – dams or lakes, boreholes, and irrigation schemes. These opportunities include the use of water for agriculture purposes, animal rearing and domestic use, as evidenced in the examples below:

There is currently a flood recession scheme in place, people are practicing irrigation, but cannot maintain good harvests year-round as once the water recedes, they lose access to water for agricultural uses. Lagua river carries the potential for multiple 5 m high dams, each costing no more than USD 600 000, and with over 100 ha of flat area, there is the potential to create a lake for fish farming as well as have downstream gravity-fed irrigation and solar pumping upstream. This initiative would supply water all year round for agricultural, domestic, and livestock at a minimal cost.



Image 1: Lagua River – Areas of irrigation



Image 2: Lagua River – Potential sites for dams

MEGARUMA, MATHOTOE VILLAGE, MECUFI DISTRICT

The proposed dam around Megaruma Bridge and surrounding storage areas (light blue) carry a potential storage capacity that can provide up to 1 200 ha of land with rainfed water using the tributaries indicated (darker blue). This land can then be partitioned into sections and allocated to farmers as farmer-led irrigation.

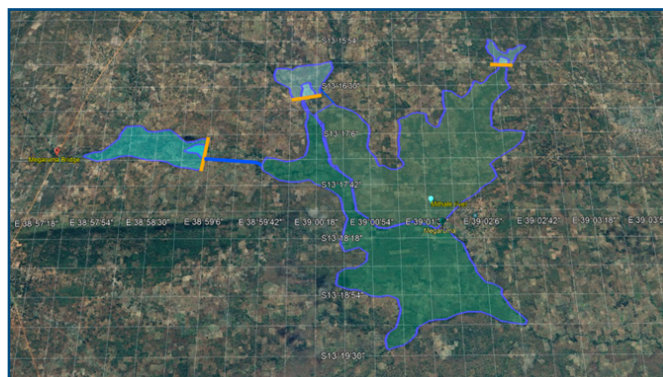


Image 3: Megaruma

NOPO RIVER, CHIURE DISTRICT

A flood recession scheme is recommended for water harvesting, reducing soil depletion, and using the water for agricultural purposes after the flooding.

BONGE DAM, BONGE (MUAGUIDE) COMMUNITY, ANCUABE DISTRICT

This dam can provide 100ha of irrigated land and it can be used by local communities for farming.

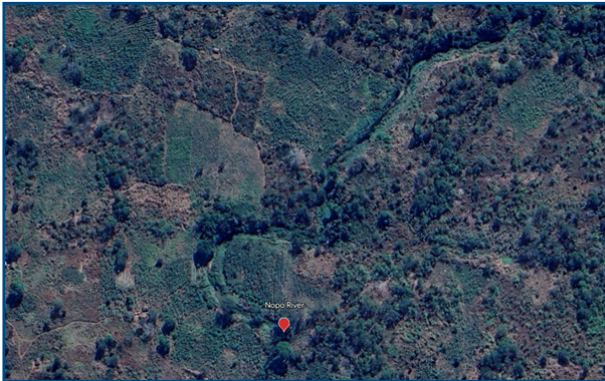


Image 4: Nopo River



Image 5: Bonge Dam

PARANHUPO IRRIGATION SCHEME, NAMUNO DISTRICT

People in the area are currently using watering cans to irrigate crops. This irrigation scheme can be improved with a solar-powered irrigation system to cover a larger area as there is enough groundwater for agricultural purposes. However, deep groundwater is not recommended as it is unusable due to salinity. There is a need for rehabilitation and improved desalinization techniques should be applied to make the water suitable for agricultural purposes, even for domestic use and animal rearing.



Image 6: Paranhupo Irrigation Scheme



Image 7: Nacaca Dam

NACACA DAM, NAMUNO DISTRICT

This dam can provide water to irrigate approximately 100 ha, as well as support several fishponds. Rehabilitation as well as an irrigation scheme would increase the area in which agriculture is possible using the dam, increase its efficiency, and improve the efficacy of water usage. Currently, people are digging around the dam to access water and animal rearing.

OTHER INITIATIVES INCLUDE:

- Improved water control and watershed management in a rain-fed environment through sustainable land management techniques.
- Farmer-led irrigation schemes; there are already small schemes being managed by farmers which have proven to be more sustainable as the farmers have control and autonomy over the implementation of the interventions.
- Small-scale irrigation technologies anchored to solar-powered technology for water pumping.
- Livelihood support activities (e.g. small livestock, beekeeping, food processing using solar drying equipment, handcraft).

Contact:

Valere Nzeyimana,
Senior Water Development and Management Officer,
FAO, RAF
Valere.Nzeyimana@fao.org

For more information on FAO's role in water:
<https://www.fao.org/water/en/>



©FAO/Celso Matavele

AWG/Cabo Delgado Recommendations

- Sustainable use of water resources requires holistic, integrated, and concerted long-term planning.
- Available water technologies should be adapted to the local context and made affordable to users according to their socio-economic situation. Small-scale irrigation technologies anchored to solar-powered technology for water pumping.
- All programs and projects should target multipurpose use of available water resources. It is in that sense that all programs should target the improvement of the efficiency and diversity of water use and the productivity of agricultural systems for food security and nutrition
- All available sources of water should be considered even if it requires long-term sensitization for mindset change and adaptation.
- Sustainable landscape management techniques should be anchored to sustainable water use efficiency so that existing irrigation systems or schemes be explored in a way that maximizes efficiency by watering the right amount, at the right frequency, to the right place and at the right time.
- The study reveals that in every district there are private or public initiatives to use groundwater, rainwater, and others for agricultural purposes. However, these opportunities are not sustainable and not adopted by the communities. There is a need to assess factors that influence farmers not adhering to water use for agriculture and relying only on rain-fed agriculture. The Government of Mozambique, in coordination with partners, should sensitize and train farmers on the importance of exploring the opportunities of irrigation for agriculture.
- FAO is ready to engage in collaborative efforts to foster inter-sectoral partnerships, both on a global and regional scale and extend their influence down to the national level and local representations. This commitment is aimed at mobilizing funding and enhancing the food-water-energy-environment security link.



©FAO/Celso Matavele

AWG/Cabo Delgado Meeting Attendance

The meeting's participants included representatives from the government (DPAP and Provincial Services of Economic Activities), United Nations agencies (FAO and WFP), and international nongovernmental organizations, with a total of 17 participants.

About the AWG/Cabo Delgado

The primary objective of the AWG/Cabo Delgado is to establish mechanisms and create a platform for facilitating coordination and collaboration among various stakeholders in the fields of humanitarian aid, peacebuilding, and development. This collaborative effort is aimed at supporting the Ministry of Agriculture and Rural Development (MADER), the Provincial Services of Economics Activities (SPAЕ), and the Provincial Directorate of Agriculture (DPAP). The focus is on addressing policy and technical challenges to enhance the quality and timeliness of interventions related to emergency and post-emergency agricultural initiatives, with a particular emphasis on benefiting farming communities.

Contact:

FAO/Cabo Delgado Agriculture Working Group

Email: AWG-Mozambique@fao.org

Sign up for the AWG/Cabo Delgado email list [here](#) to receive regular invitations to our monthly meetings, newsletters, and other information.

List of acronyms

AWG	Agriculture Working Group
DPAP	Provincial Directorate of Agriculture and Fisheries
FAO	Food and Agriculture Organization of the United Nations
IDP	Internally Displaced People
MADER	Ministry of Agriculture and Rural Development
RAF	Regional Office for Africa
SDGs	Sustainable Development Goals
SPAЕ	Provincial Services of Economics Activities
WFP	World Food Programme