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Investing in Climate Resilient Livelihoods

Making a Difference in People's Lives



1
Light up &
power Africa



2
Feed Africa



3
Industrialise Africa



4
Integrate Africa



5
Improve
the quality of life
for the people of Africa

Contents

Project Concept

- What is Baixo Limpopo Irrigation and Climate Resilience Project?

- Project Sponsors
- Project Beneficiaries
- Project Components
- Magula Pumping Station
- Umbapi Pumping Station
- Project Outputs

- **Perception of Project**
- **Reflections and Conclusions**

- **Acknowledgements**
- **Project Sponsors and Partners**



**The Baixo Limpopo
Irrigation
and
Climate Resilience
Project**



What is the Baixo Limpopo Irrigation and Climate Resilience Project?



In 2013, Mozambique's Gaza Province was devastated by heavy floods, forcing 50,000 people from their homes in the districts of Chokwé and Guijá. Close to 300,000 people were directly affected, with almost 200,000 people temporarily displaced (70,000 in Guijá and Chokwé alone). Climate shocks struck again in 2016, when Mozambique experienced one of the worst droughts ever recorded. A total of 459,000 farmers were directly affected by the severe drought, with over 400,000 people receiving food assistance in the Maputo and Gaza Provinces.

With the aim of providing long-term solutions to the recurrent climate shocks, the African Development Bank-supported Baixo Limpopo Irrigation and Climate Resilience Project (BLICRP) implemented in Xai-Xai District of Gaza Province was designed to contribute to poverty

reduction through increased value addition to agriculture commodities, mainly rice and horticulture and the provision of climate resilient infrastructure. Over a period of seven years, from 2013, BLICRP provided support for the development of 3,050 hectares (ha) for cash crops and the provision of marketing and agro-processing facilities. It also aimed to the communities' resilience to cope with climate change-related events.

The Implementing Agency is the Regadio do Baixo Limpopo E.P (RBL, EP), a parastatal company created by the Government of Mozambique to manage irrigation development in the Lower Limpopo Basin area on behalf of the Instituto Nacional de Irrigação (INIR), the project's Executing Agency. The Lower Limpopo Basin covers an area of 70,000 ha in the Xai-Xai, Chongoene, Limpopo and Chibuto Districts.

Project Sponsors

Baixo Limpopo Irrigation And Climate Resilience Project (BLICRP)	
Sector	Agriculture and Rural Development
Funding	\$ 44.08 million
Funding Partners	Government of Mozambique \$ 2.31 million (5.2%)
	ADF Loan \$ 25.79 million (58.5%)
	Strategic Climate Fund - Pilot Program for Climate Resilience (SCF-PPCR) Loan – \$ 13.16 million (29.9%)
	Grant – \$ 2.82 million (6.4%)
Time-Frame	2012 - 2019

Project Beneficiaries



8,000 smallholder farm families & 210 emergent farmers



Around 52% of the direct project beneficiaries are women

115,752

People have benefited from jobs created

The communities consist of 8,000 smallholder farm families and 210 emergent farmers and about half of the direct project beneficiaries were women. The project provided employment and improved marketing. It supported value-adding activities to each smallholder family that owned a plot of 0.25 ha to 0.5 ha under smallholder production and 1 ha to 5 ha to emergent farmers, whose production was hampered by poor drainage in the Baixo Limpopo basin, often coupled with recurrent floods. Additionally, the overall

population of more than 115,000 in Xai-Xai district benefited from jobs created during the construction and operation phases, as well as the marketing and agro-processing centers. The project benefited around 9,000 farmers, and during the infrastructure construction phase it employed a total of 254 people, with 82 employees working in the agro-processing center, 31 in the road construction, 108 in the construction of the Magula Pumping Station, 33 in the second outfall construction and CEPHOL currently employs 21 workers.

Project Components

- Infrastructure Development:
 - a) Agro-processing center (Central of Agro-processing)
 - b) Small units of Agro-processing
 - c) Magula Pumping Station (1,050 ha)
 - d) Area Infrastructures rehabilitated and adapted to climate change (2,000 ha)
 - e) Rural Roads Rehabilitated (47.7 Km of Rural Road)
- Capacity Building and Farming;
- Project Management.

Magula Pumping Station

The area serviced by the Magula pumping station (1,050ha) hosts a Private Public Partnership (PPP) with Agroset with the purpose of transferring rice production technology to local farmers. The partnership started in the 2017/2018 agricultural season. RBL allocated an area of 300 ha to Agroset in the Magula block for the production of rice in a consortium scheme, and to provide technology transfer to farmers in the villages of Magula and Chimbonhanine.

Agroset cultivated rice in an area of 260 ha in the 2017/2018 planting season. Under the agreement between RBL and Agroset, 50 local producers in the Magula and Chimbonhanine communities benefited from improved rice production technologies.

Within the technology transfer region, all farmers started with 1 ha in the 2017 season and after participating in capacity building training from Agroset, most obtained an additional 1 ha of land.

Since the project came into force, farmers have been able to access their land even when it rains thanks to road infrastructure and the drainage system that pumps water from the farms. Some have returned to farming after having worked in South Africa, as they now believe that agriculture can bring profits.

The income earned from farming has been used to improve the farmers' lives, including the payment of school fees, securing access to electricity and the installation of better latrines.



Control room of the Magula Pumping Station
(Baixo Limpopo Irrigation Scheme, Gaza)

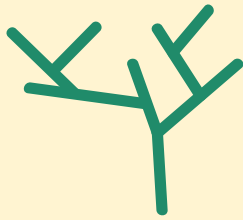
Umbapi Pumping Station

The Umbapi Pumping Station is a drainage and irrigation system. Construction of the Umbapi Pumping Station was funded through the Massingir Dam and Smallholder Agricultural Rehabilitation Project (MDSAR), funded by the African Development Bank. After construction of the Umbapi Pumping Sistem, the Baixo Limpopo Project rehabilitated the drainage system and to provide an irrigation infrastructure in order to operationalize the system. The infrastructure provides ir-

rigation water to the farmers' fields in the scheme during the farming seasons and drain when there is a excessive water that comes from higher areas of the scheme.

One of the areas the irrigation system benefits is Ponela north, where new farmers have rice fields. The farmers in this area are benefitting from input supply system provided by the project and for technology transfer programs sponsored by Wanbao Company.

Project Outputs



Rehabilitation of 52 km of drainage network servicing a total area of 2,000 ha



Completed the Magula block irrigation scheme covering 1,050 ha



Supplied and installed a fully operational standby generator



Finalized the construction of a maternity center



Completed the rehabilitation of 47.7km of rural roads using a climate resilient design

BLICRP achieved a number of milestones: the project completed the rehabilitation of 52 km of drainage network servicing a total area of 2,000 ha; supplied and installed a fully operational standby generator; completed the Magula Block irrigation scheme; The construction of a maternity center; and the rehabilitation of 47.7 km of rural roads using a climate-resilient design. Furthermore, during the 2017/18 planting season, 444 farmers benefited from technology transfer for rice production. Of these, 50 were emergent farmers and 213 were new producers under intensive training, including 35 young people. Lastly, BLICRP completed the construction of an agro-processing center (Limpopo Horticulture Processing Center - CEPHOL) employing 37 workers, 31 of them women.

CEPHOL is located in Xai-Xai city and recently began to purchase farmers' produce, adding value through primary processing (washing, sizing and packaging), storage and conservation.

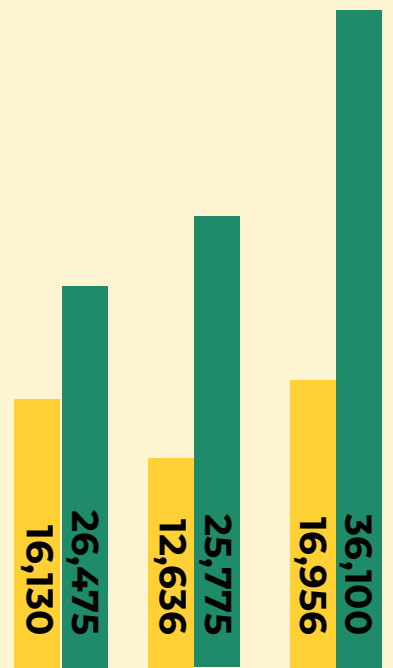
CEPHOL is currently operated by RBL which has a concession agreement with Campo Doce, a distribution company for vegetables in the wholesale and retail market in Maputo, to supply processed produce. In addition, CEPHOL also has a partnership with Agroset to distribute sweet potatoes to the South African market.

Overall, the total area infrastructure in the RBL is 17,000 ha where 3,050 ha was infrastructure by the project. RBL is engaged in the day-to-day management of irrigation schemes.

Production (tons)

2014
2019

45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0



Rice Maize Vegetables

Alima Matusse

Farmer, member of the Nhocuene Agrarian Center
33 years old
Single mother of four boys and a girl



“The project gives an opportunity to the unemployed youth to make a living through farming. This project is our real dream.”

Since the inception of BLICRP, Alima Matusse was able to increase the area of land she farms from 0.25 ha to 0.75 ha. On this bigger plot, she added kale, cabbage and carrots to her staple crop, maize. This allowed her to increase her income to around \$ 50 per month during harvesting.

Most importantly, the money allowed her to construct a house for herself and her children. Alima has invested in education by paying school fees whilst also purchasing second-hand clothes. She bought two goats in 2016, with the ambition of transitioning into cattle farming in the future.

She is thinking about diversifying her income to not only depend on farming.

Her biggest dream is for her children to one day attend university, and to build a house of bricks so that she does not have to re-do her reed house every year. “The project gives an opportunity to the unemployed youth to make a living through farming. This project is our real dream,” she said.

Alima started saving money through an Accumulative Savings and Credit Association (ASCA), her first step towards integration into a form of financial inclusion.

Alfredo Monjane

Farmer, Member of the Poiombo Agrarian Center
60 years old
Father of three children



“There are 1,200 families in these agrarian centers. They produce tomato, kale, cabbage, banana, lettuce and maize.”

Alfredo Monjane is the president of the association of farmers in the Poiombo Agrarian Center. He is 60 years old, married with three children, two of whom are at university.

When asked about the members of the agrarian center, he said: “There are 1,200 families in these agrarian centers. They produce tomato, kale, cabbage, banana, lettuce and maize.” The most profitable product is cabbage as the price varies from \$ 0.08 (during the picking season) to \$ 0.25 when it is scarce.

Farmers have made up to \$ 800 to \$ 1,000 per year since the project started. The profit is usually used to pay school fees and university tuition or to build a house.

Antonio Gaveta

Farmer, member of the “Casa Agraria” of Nhocoene
57 years old
Father of six children



“The BLIRCP project has allowed me to move forward with my project, which is slightly different from that of the members of my community. In fact, I have what I like to call an education project.”

Antonio Gaveta is a farmer with about 10 ha of land, part of which is located in the Baixo Limpopo irrigation scheme. He is a member of the agrarian center of Nhocoene, and a direct beneficiary of the Baixo Limpopo Irrigation and Climate Resilience Project (BLICRP).

A father of six, Antonio has three children enrolled in university. An increase in agricultural productivity has allowed this proud father and farmer to generate enough profit to invest \$ 3,200 per year in university education for three of his children.

His elder daughter, Aurora, is enrolled in her last year of Agricultural Economics; his son Antonio enrolled in Health

Care Management in 2014; and his younger daughter Mira has been studying Public Administration since 2016. Antonio has decided to channel more funds into educating his children, whilst also making some minor improvements to his home.

He explained that “less and less youth are engaging with agriculture”, and that youth who remain in their community often struggle in finding alternative ways to support themselves and their families.

Eugenio Nhahule

Farmer, member of the Nhocuene Agrarian Center
57 years old
Father of 11 children



“I purchased a small Hyundai truck for about \$ 4,920 that helped me to transport my products ... This has reduced my dependence on others to reach the market.”

Thanks to the regular provision of water through the rehabilitated irrigation canals, Eugenio has managed to increase his agricultural land to a total of 7 ha, divided into three plots.

His main focus has been production of cabbage, kale, carrots, potatoes, maize, lettuce, green beans and okra. In the case of okra, he said that it “can sell anything between \$ 4.5 and \$ 8 per bowl, depending on the demand and availability”. He sets aside about 2.5 ha of land solely for growing okra, managing to produce anything between 30-40 bowls of okra per month during its ideal planting/harvesting period, earning between \$ 164 – \$ 328 per month from the crop alone. Once picked, okra has just a small window of opportunity to be sold while still fresh.

Aside from his usual agricultural work, Eugenio has invested in a number of side activities. Once he was keen on sharing is related to his poultry business, which in 2018 involved 250

chickens. His main market is at local community, but chicken consumption has also increased within his household, a source of pride as it shows his family has diversified their diet by accessing different types of food. He plans to invest in ducks to further diversify his income within his poultry activities.

Eugenio said: “I was able to build a bigger house, with a metal roof, a porch and improved bathroom, meaning that now my family and I can access proper sanitation.

Furthermore, he showed a good understanding of what it means to be a farmer based in a large irrigation scheme, with all the associated roles and responsibilities that this may bring. He has become an “active participant and beneficiary” – one that sees the sense of paying for specific services such as provision of water, cleaning of canals, maintenance/repairing of water pumps, and who understands the need for farmers to collaborate with the RBL.

The Chongoene Agrarian Center



“

We still don't have the capacity to regularly supply the whole market, but we keep trying to assist in transforming our clients from simple producers to being fully equipped farmers

”

An Agro-Sumbunuca representative

As part of the infrastructure development component of SLWRMP, the African Development Bank supported the rehabilitation of the Chongoene Agrarian Center and provided resources for the purchase of agro-processing equipment, with added financing from Regadio do Baixo Limpopo (RBL).

To help them safely use the newly installed equipment, training was given by the company that provided the equipment to RBL staff. In addition, a private company that uses storage at the agrarian center, Agro-Sumbunuca Ltd, installed nurseries around the center to grow crops for sale.

Established in 2011, Agro-Sumbunuca is a family-run company based not only in Chonguene, but also in Chidenguele and Manjacaze. Under the Baixo Limpopo Ir-

rigation and Climate Resilience Project (BLICRP), Agro-Sumbunuca has become the first private sector operation within one of these agrarian centers, with a total of approximately 1,000 clients buying seeds, herbicides, equipment, agricultural inputs, animal feed and poultry chicks.

This is the sort of PPP initiative that BLICRP is trying to support through its activities related to the rehabilitation and construction of infrastructures for agro-dealers, agro-processing and, in general, value addition. Mr.Nhatumbo (first on the right in the picture above) explained this:

“We still don't have the capacity to regularly supply the whole market, but we keep trying to assist in transforming our clients from simple producers to being fully equipped farmers,” he concluded.

The company Agro-Sumbunuca is an indirect beneficiary of the Sustainable Land and Water Resources Management Project funded by the Bank. The project contracted a third party for the cashew trees reforestation and this company sub-contracted the Agro-Sumbunuca to fulfil the task.

Siaia Agrarian Center



“Rice production in 2017 generated a surplus which we consumed throughout the entire year of 2018.”

“Agrarian Center” known as “Agrarian Houses” is an aggregation of farmers associations. In addition, the Agrarian houses concentrates a shop for selling inputs, a training in primary production and processing activities. The Agrarian Centers are constituted by a group of farmers (60% are women in average) located in the same vicinity, i.e. Siaia. The region has 7 Agrarian Houses and Siaia is one of them.

For instance, one of the members stated: “Rice production in 2017 generated a surplus which we consumed throughout the entire year of 2018”.

The additional revenues raised were used by farmers mostly to buy school material for their children. Another benefit was that the project allowed the farmers to buy agriculture equipment at a lower price than before.

Members of the agrarian center are farmers who had plots within the RBL area before the beginning of the project. BLICRP has facilitated the provision of additional land to the farmers, with a subsequent increase in production levels.

In this agrarian center, women were represented at top positions of management. For example, a woman was the chief of the group of farmers in a block, and another the secretary of the farmers’ association.

Hortencia Carlos Matchai

Farmer, member of the Nhancutse Agrarian Center
47 years old
Mother of eight children



“My profit comes from selling my produce in the market every 15 days.”

Hortencia Carlos Matchai is a 47-year-old farmer. The provision of water and access to her farm allowed Hortencia to profit more from her banana plantation and horticulture farming. “My profit comes from selling my produce in the market every 15 days,” said Hortencia, who can make up to \$ 100 in just a month. Her children help with farming activities at the weekends during the school term, increasing their contribution during the holidays.

that allowed her to buy electricity for about \$ 3-4 per month. She also purchased an ox, which she now uses for her farming activities. Her children regularly attend school, for which she pays an annual fee of \$ 8-12 per year.

Finally, BLICRP has served as a channel for her to become a teacher. Hortencia teaches adult literacy and obtained a certificate from the Pedagogical University 14 years ago. In BLICRP, she was able to motivate people to attend literacy school, illustrating the project’s reach beyond the agriculture sector, and its impact on the education of both the direct and indirect beneficiaries.

Commercial farming has made Hortencia an investor. She is one of the few in her community to have a hot water shower inside her house. This idea came to her when she started making profits

Nhancutse Agrarian Center



“ I've been able to make quite a large sum of money from agriculture, moving from my previous \$ 234 - \$ 267 per year, to approximately \$ 383 from a variety of produce including carrots, sugar cane and beetroot, with garlic being the most lucrative. In addition, I am exploring the production of bananas for a total of \$ 116. ”

Hilário Mabunda, President of the Nhancutse Agrarian Center

The Agrarian Center (Casa Agraria) of Nhancutse is one of seven of its kind. Before the establishment of the project, in which most of the farmers were producing under the rainfed conditions, they faced a number of difficulties. For example, Farmers mentioned how their livelihoods had been negatively affected by issues such as erratic or low levels of rainfall, access to water and the subsequent low productivity of their fields.

Through the implementation of the BLICRP project, they see great potential for their future agricultural activities thanks to the impact of the regular provision of water. The farmers underlined the need to have an agro-dealer nearby, to reduce transport costs for inputs and other products. BLICRP has also supported the provision of a cold storage container unit and of two machines, one for washing produce and the other for packaging.

For Issaia Siquaque, 42, there are three key improvements for he and his family's everyday life: access to electricity on a regular basis, the provision of water and the ability to provide education to two of his eight children.

Although seemingly basic, these services come at a cost: the monthly fee for electricity is between \$ 3.3 - \$ 5; monthly water costs are between \$ 3.3 - \$ 6.6; and yearly education fees are set at around \$ 167. Echoing the experiences of his fellow farmers, David Manhique, 51, is a former miner who has decided to abandon working in the mines in South Africa, having seen the agricultural potential in Nhancutse. While farming only one hectare of arable land, David has also assisted in labour-intensive work that directly benefits the activities of the Regadio do Baixo Limpopo, such as the cleaning of secondary canals and helping in basic road rehabilitation.

Reflections and Conclusions

The BLICRP project represents one of the biggest investments in agricultural infrastructure in southern Mozambique. Its aim was to boost productivity and provide smallholder farmers with water, and also to attract private sector investments from both domestic and foreign investors. Farmers and groups interviewed have given first-hand testimony of BLICRP's achievements. The farmers' investments, both in physical assets and more importantly in education and improved nutrition, indicate similar opportunities for the farmers in the other 'Casas Agrarias'.

Set amidst 70,000 ha of land with the potential to be developed, the BLICRP works alongside efforts of other private sector entities in the irrigation scheme (Wanbao, Agroset, etc.) to ensure that the largest possible area of land is under cultivation. Farmers have benefitted from significant infrastructural developments, in particular access to primary and secondary canals over a longer period, and this will continue to benefit more farmers.

Following the devastating floods that occurred in February and March 2000 – when insufficient road and drainage systems saw many rural communities cut off entirely, and around 450,000 people displaced, the BLICRP has improved the surface and drainage capacity and rehabilitated 45km of roads to increase its resilience capacity in Gaza province. The upgraded road surface gives

farmers access to larger urban markets, while also improving accessibility in the event of floods or other emergencies. Better drainage, meanwhile, helps to reduce soil erosion previously caused by surface runoff. The construction of a cold-storage and processing facility in Xai-Xai – that became operational in June 2019 – has also provided a ready market for farmers' produce and will help to reduce post-harvest losses significantly.

The major challenge now lies in attracting the private sector to engage with farmers and to guarantee that “top notch” agro-industrial infrastructure, such as the CEPHOL, receive the necessary regular supply of produce that can ensure the value-addition activities are fully operational, fulfilling market linkage objectives and creating a “farm-to-fork” value chain success story.



Primary canal near the Umbapi Pumping Station (Baixo Limpopo
Irrigation Scheme, Gaza) - BLIRCP

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- Ministry of Agriculture and Food Security
- Ministry of Land, Environment and Rural Development - CONDES (Sustainable Development Council)
- National Treasure Directorate - Ministry of Economy and Finance
- Government of Gaza Province
- Government of Xai Xai District
- Government of Chongoene District
- ARA SUL (Regional Water Authority)



Processing Center for Vegetables and Fruits - CEPHOL
(Baixo Limpopo Irrigation Scheme, Gaza) - BLIRCP



Magula Pumping Station (Baixo Limpopo
Irrigation Scheme, Gaza) - BLIRCP

Project Sponsors



Project Implementing Agency



Regadio do Balxo Limpopo, E.P.
GABINETE DO PRESIDENTE DO
CONSELHO DE ADMINISTRAÇÃO



REPÚBLICA DE MOÇAMBIQUE
MINISTÉRIO DA AGRICULTURA E DESENVOLVIMENTO RURAL
Direcção Provincial de Agricultura
e Segurança Alimentar de Gaza

Project Executing Agency



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