



THE AQUACULTURE SUB-SECTOR IN ZAMBIA: CHALLENGES AND OPPORTUNITIES

PREPARED BY:

RESEARCH:

Esther Nchimunya Nyemba (Junior Researcher) with support of **Bernadette Deka** (Executive Director)

TECHNICAL REVIEW:

Salim Kaunda (Head of Research and Analysis)

EDITORIAL TEAM:

Chiti J. Nkunde (Communications Specialist) **Layout and Design**

Melody Simukali (Head of Communications and Grants) **Editorial**

ABBREVIATIONS

| | |
|-------|---|
| 7NDP | Seventh National Development Plan |
| AfDB | African Development Bank |
| CEEC | Citizens Economic Empowerment Commission |
| FISP | Farmer Input Support Program |
| GDP | Gross Domestic Product |
| ZAEDP | Zambia Aquaculture Enterprise Development Project |

This document and trademark(s) contained herein are protected by the laws of The Republic of Zambia. This electronic representation of PMRC intellectual property is provided for non-commercial use only. Unauthorized posting of PMRC electronic documents to a non-PMRC website is prohibited. PMRC electronic documents are protected under copyright law. Permission is required from PMRC to reproduce, or reuse in another form, any of our research documents for commercial use. For information on reprint and linking permissions, please see PMRC Permissions .
(www.pmrzambia.com/copyright).

The PMRC is a nonprofit institution that helps improve policy and decision-making through research and analysis. PMRC's publications do not necessarily reflect the opinions of its research clients and sponsors.

 **PMRC**® is a registered trademark.

TABLE OF CONTENTS

PAGE

| | |
|---|----|
| 1. The Aquaculture Sub-sector in Zambia: Challenges and Opportunities | 4 |
| 2. Overview of Aquaculture Sector in Zambia | 5 |
| 3. Opportunities for Aquaculture Development | 8 |
| 4. Challenges in Aquaculture Development | 8 |
| 5. Best Practice in Aquaculture in Africa | 9 |
| 6. Recommendations | 11 |
| 7. References | 12 |

THE AQUACULTURE SUB-SECTOR IN ZAMBIA: CHALLENGES AND OPPORTUNITIES

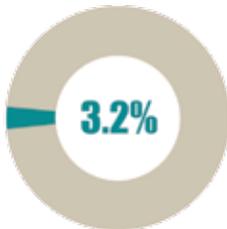




OVERVIEW OF AQUACULTURE SECTOR IN ZAMBIA

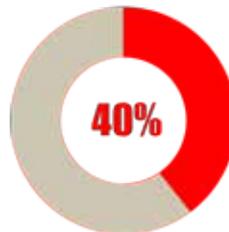
The fisheries sub-sector in Zambia plays a significant role in the economy as it offers an opportunity for improved nutrition, income generation and job creation, resulting in general wealth creation and food security at national and household levels. At national level, the fisheries sub-sector contributes approximately **3.2%** to the national Gross Domestic Product (GDP) (*Second Agricultural Policy, 2016*). Given the abundant water resources that Zambia has, the fisheries sub-sector has been identified as one of the avenues for agriculture and general economic diversification through enhanced and efficient capture fisheries and fish farming. At household level, the fisheries sub-sector is identified as one of the sectors that can provide additional protein. In addition to other sources such as livestock and crops, fish accounts for about **40%** of protein intake in rural areas. This sector is key in efforts towards scaling up nutrition levels, food security and income generation. At household level, the fisheries sector contributes to household income through fishing activities as an income generating activity in some parts of the country.

NATIONAL LEVEL



FISHERIES CONTRIBUTION TO GROSS DOMESTIC PRODUCT IN 2016

HOUSEHOLD LEVEL



PROTEIN INTAKE - RURAL AREAS

In simple terms aquaculture is defined as farming and husbandry of aquatic organisms under controlled or semi-controlled conditions. This term refers to cultivation of both marine and fresh water species which range from land-based cultivation and open water production in cages. In Zambia fish production through aquaculture is carried out in ponds, dams, cages and weirs.

The fisheries sector has the potential to produce **150,000** metric tonnes of fish annually but it currently produces about 100,000 metric tonnes of which **87%** of the production comes from capture fisheries (*Second Agricultural Policy , 2016*)². The current fish production in the country has failed to meet the country's domestic demand for fish, which has led the country to become a net importer of fish. In 2015 Zambia's fish imports volume was **77,199** metric tonnes which increased to **126,345** metric tonnes in 2016. (*Department of Fisheries , 2017*). In terms of net worth of the fish that the country imports, the Seventh National Development plan indicates that in 2011, fish imports were valued at **US\$ 32,118,412** which increased by **253%** to **US\$113,434,446** in 2015 while the value of fish exports decreased from **US\$1,081,964** to **US\$503,649** between 2011 and 2015 (*Ministry of National Development Planning , 2017*). It is against this background that aquaculture has been recognised as an avenue through which the unmet fish demand can be addressed; furthermore aquaculture has been recognised in the country's development agenda as a means to promote employment and a source of livelihood for small scale farmers.



DIFFERENT MARINE AND FRESH WATER SPECIES

| POTENTIAL FISH PRODUCTION 2016 | ACTUAL FISH PRODUCTION 2016 |
|---|---|
| <p>150,000</p> <p>METRIC TONNES / YEAR</p> | <p>100,000</p> <p>METRIC TONNES / YEAR</p> <p><i>87% Production from Capture Fisheries</i></p> |

ZAMBIA FISH IMPORTS

77,199

METRIC TONNES

(2015)

126,345 ↑

METRIC TONNES

(2016)



The aquaculture sub-sector currently contributes about 27% to the total fish production in the country. The sector has experienced some increase in production from 12,988 metric tonnes in 2012 to about 32,888 metric tonnes in 2017; this increase is mainly attributed to the commercialization of the sector which has led to the increase in the number of small holder farmers venturing into fish farming and the increase in private sector investment. However, the increase in the number of small scale fish farmers has not significantly helped reduce the deficit in demand. The sector has received recognition through the Seventh National Development Plan and other cooperating partners who are implementing initiatives to improve productivity through financing by the Citizen Economic Empowerment Commission (CEEC) and African Development Bank(AfDB). The sector has opportunities for growth as well as challenges that are outlined in this brief.

OPPORTUNITIES FOR AQUACULTURE DEVELOPMENT

Aquaculture has the potential of being a major contributor to economic development and is one of the important sectors of the Blue Economy concept in Zambia. The following are some of the opportunities that exist for the development of aquaculture in Zambia:

- ▶ Zambia's abundant water resources especially in high rainfall areas can be used for aquaculture activities. The following have been termed as high-potential zones: Siavonga, Chipepo, Bangweulu and Mungwi.
- ▶ The implementation of the E-voucher system gives an opportunity for farmers to take up aquaculture as their income generating activity because they are able choose from the diverse input provided by the FISP program.
- ▶ The recognition of aquaculture as a contributor to employment creation and economic diversification in the Seventh National Development Plan (7NDP) making its implementation consistent with national development planning.
- ▶ The implementation of the Zambia Aquaculture Enterprise Development Project (ZAEDP), whose aim is to develop the aquaculture sector into a viable and inclusive business through enhanced production and productivity for improved livelihoods, offers an opportunity for increased participation of small scale farmers in the sectors. This has a positive impact on livelihoods and increased production.



HIGH RAINFALL AREAS



E-VOUCHER



7NDP



ZAEDP

CHALLENGES IN AQUACULTURE DEVELOPMENT

Despite Zambia being the sixth largest producer of fish in Africa through aquaculture, the sub-sector's potential still remains under-exploited due to a number of constraining factors and these include:

- ▶ To begin with, the aquaculture sub-sector is guided by inadequate policy framework, although Government has developed an aquaculture strategic plan, this plan has not been fully implemented to facilitate for the management of the sector which could enhance fish production. It is therefore important that Government works with relevant stakeholders to implement best aquaculture management practices which will further develop the sub sector. With the introduction of the Ministry of Fisheries and Livestock there exists an opportunity for improved policy implementation and improved support.
- ▶ Secondly, there has been low levels of investment in the aquaculture sub sector when compared to other sectors in the economy. However, there is need for a deliberate paradigm shift that would change the development of the sector through research and extension services for meaningful aquaculture development to be actualized and spearheaded by the Ministry of Fisheries and Livestock.
- ▶ Lastly, there is fragmented coordination amongst stakeholders leading to delays in the implementation of aquaculture strategies, interventions and policies. It is therefore important for the Ministry of Livestock and Fisheries to work together with different stakeholders to ensure the effective implementation of initiatives that will increase aquaculture production and productivity.

BEST PRACTICE IN AQUACULTURE IN AFRICA

There are a number of countries that Zambia can learn from on best practice for a successful aquaculture sector such as Egypt. The Egyptian aquaculture sub sector is currently number ten in the world in terms of fish production and the largest in Africa. This status has been due to a number of interventions that the Egyptian Government has implemented in the last four decades targeted on reducing fish imports and the realization of the economic opportunities of aquaculture. In 2010 the Egyptian Government designed and implemented a National Aquaculture 2030 Strategy; this strategy focused on the development of fresh water aquaculture with an emphasis on cage fish farming and desert fish farming.

In order to achieve the 2030 strategy, the Egyptian Government implemented a wide range of policy interventions such as;

- ▶ Efficient use of fresh water for fish production through the recirculation aquaculture method of rearing fish, rather than using open ponds. The choice of this type of fish farming was considered the best for increased productivity because it is done all year round, has low water requirements and little space.
- ▶ Financing for aquaculture- the Government has made strides in financing aquaculture, although challenges still exist for small holder farmers to access finance from formal financial institutions when compared to informal credit providers.
- ▶ The Government has created an environment where it has licensed the establishment of fish feed mills within the country for feed production.

From the Egyptian case, Zambia can adopt the policy implementation of an aquaculture strategy to guide the sub sector development and the use of the recirculation aquaculture system which will ensure all year-round fish production, which will cushion the gap in supply caused by annual fish bans.

FISH PRODUCTION



1st in Africa
10th Worldwide

RECOMMENDATIONS

In order for the country to realize potential of the aquaculture sector for job creation and economic diversification, the following measures must be put in place:

1. Affordable financial products and services need to be tailored specifically for aquaculture development in the banking sector to increase investments in productivity and extension services.
2. Provision of a conducive environment for private sector investment into the sector. This can be done through appropriate regulations, research and development, capacity strengthening for farmers and fiscal incentives for investors in the fish value chain.
3. Improvement in awareness programmes among farmers on the importance of aquaculture in Zambia especially for farmers on the FISP programme.
4. Improved extension services in order to foster capacity building for small scale farmers in production and management of their ponds, dams and cages.



REFERENCES

1. Egypt National Aquaculture 2030 Strategy
2. Second Agricultural Policy 2016 - 2020
3. Seventh National Development Plan 2017 - 2021



Photo courtesy of Alistair McGlashan

Unlocking Zambia's Potential

Correspondence on this Briefing Document can be sent to:
info@pmrczambia.net

Policy Monitoring and Research Centre (PMRC)
Plot No. 36c Sable Road, Kabulonga, Lusaka, Zambia
Private Bag KL 11
Tel: +260 211 269 717 | +260 979 015 660

www.pmrczambia.com

