Agriculture Energy and Water Intersection: Progress in the Development of Irrigated Agriculture in Malawi

1. Austin T. Phiri Ph.D., Laureate, Chief Agricultural Research Scientist, Department of Agricultural Research Services, Ministry of Agriculture
2. Mr. Geoffrey Mwepa, Director of Irrigation Services, Ministry of Agriculture
3. Wilson Bil Nagoli, Principal Economist- Agricultural Trade and Marketing, Department of Agricultural Planning Services, Ministry of Agriculture

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Historical overview of Malawi's development trajectory

- Malawi's development path has been split into phases since attaining independence in 1964 including:

➢ Periods of fast economic growth

➢ Economic liberalization and the challenges that ensued

- The notable period of significant economic growth occurred from 1964 and 1980

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Three primary factors made it a unique period for Malawi:

(1) Its seemingly different approach to development when compared to other African countries

(2) Its remarkable economic growth; and

(3) Perhaps the only period in which Dr. Banda, the country's first president, had virtually total control over the country's economic and development policies (Kayuni, 2011)

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- Malawi had focused on exporting agricultural goods and substituting imports
- But had to cope with structural changes and economic challenges
- Later shifted to a multiparty democracy and a more open trading policy
- However, problems like poverty, aid dependency and inequalities persist

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- **By the end of 1979, the economy started to regress due to a "conjuncture of declining terms of trade, transport bottlenecks, rising costs of fuel, and poor weather conditions" Mhone (1992: 27).**

- **In the early 1980s, the government requested the World Bank's help and embraced the Bank's structural adjustment policies (SAPs).**

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Malawi implemented the adopted SAP prescriptions (which were implemented in phases) by:

- De-regulating prices
- Rationalizing statutory bodies
- Devaluing the currency
- Eliminating food and fertilizer subsidies
- Reforming the public sector
- Removing social amenities (Chilowa and Chirwa 1997; Mhone 1992; Banda et al 1998; and Moyo 1992)

Cont...

This signaled the demise of Dr. Banda's total authority over development and economic initiatives

Currently the emphasis is on the Malawi 2063 Vision which seeks to:

- Industrialize
- Urbanize
- Commercialize agriculture

➢ In order to build a prosperous, self-reliant, and developed country

Key structural challenges in Malawi

Malawi has structural challenges such as:

- A predominantly agricultural economy –rain fed agriculture
- Inadequate infrastructure
- Limited economic diversification
- High rates of inequality and poverty
- Macroeconomic instability, debt crisis, and the effects of climate change
- **Effort is underway to alleviate the challenges**

Policy shifts and Promising initiatives

Policy shifts

- In 2021, Malawi 2063 (MW2063) was unveiled, aiming to transform Malawi into an upper-middle-income country that is industrialized, self-sufficient, and inclusive by 2063

- **Has phased implementation plan beginning with the Malawi Implementation Plan-1 (MIP-1 (2021–2030), which seeks to advance the UN Sustainable Development Goals and attain lower-middle-income status by 2030.**

- Primary pillars: Agricultural production and commercialization Industrialization and urbanization

The state of the agriculture sector in Malawi and energy and water intersection

- Agriculture still accounts for 38% of Malawi's GDP, supports 85% of the country's population, and produces over 80% of its export earnings.

- Approximately three-quarters of smallholder farmers' agricultural output comes from rain-fed cropping methods based on maize.

- Rain-fed agriculture is Malawi's primary source of long-term socioeconomic development, income growth, and food security.

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- A heavy reliance on rain-fed agriculture has led to low agricultural productivity and production due to weather shocks and natural disasters

- But has vast water systems and arable land

- With water systems occupying more than 21% of the country's area

Agriculture Water Energy Nexus in Malawi

- ***Malawi's agricultural sector is very vulnerable to climatic unpredictability and water scarcity as it is based on rain-fed farming, which also has an impact on energy supplies***

  - ***These sectors are inextricably linked by the need for irrigation to alleviate drought, which requires energy for water pumping, and the possibility of manufacturing biogas from agricultural waste***

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- In recent years, the Ministry of Agriculture through the Department of Irrigation has placed significant emphasis on capacity building and improving the efficient utilization of irrigation systems.

- The efforts are guided by the Irrigation Act of 2024 and the National Irrigation Policy of 2024 both developed and approved during this period.

State of irrigation development in Malawi

- In 2015, the sector adopted the Irrigation Master Plan and Investment Framework (IMPIF), which provides a strategic development plan and financing approach for developing the irrigation sector

- IMPIF identified about 408,000 hectares of potential irrigable land and set a target to develop 220,000 ha by 2035

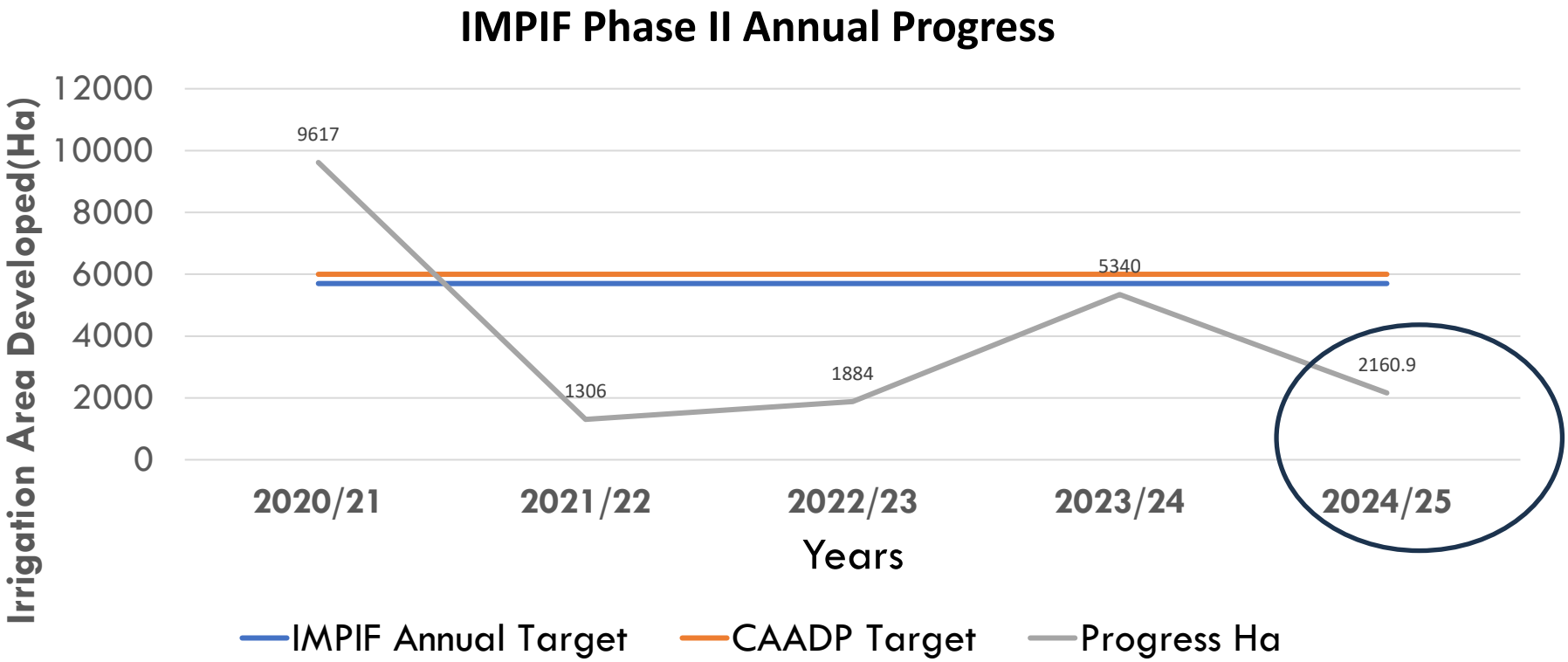
- Also seek to accelerate development of irrigation which has fallen short of the 6% minimum annual growth rate target for the agriculture sector established by the Comprehensive African Agricultural Development Programme (CAADP)

Progress of Developed Irrigation Area against IMPIF targets

- ✓ **2024/25 marks the end of the second phase of implementation of the IMPIF**

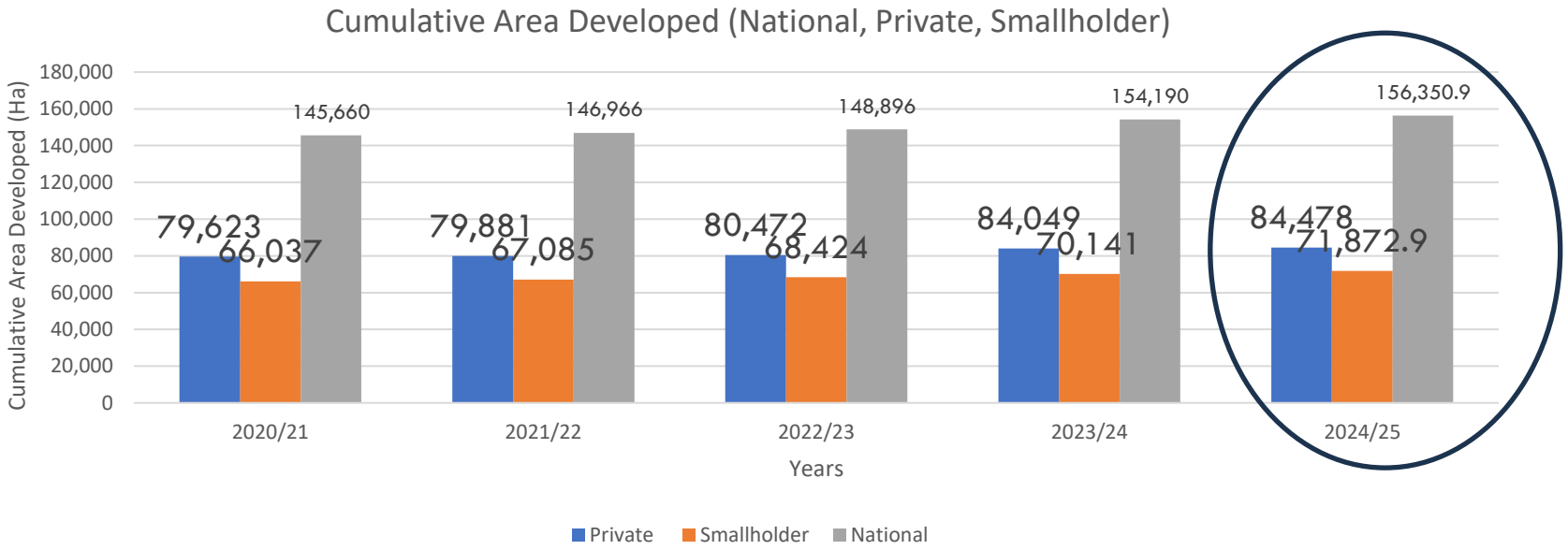
- ✓ **Phase 1 closed at 109% cumulative achievement while Phase 2 is closing at 103% (156,351 ha against a target of 152,500 ha)**

Annual Progress of Developed Irrigation Area against IMPIF for Phase II



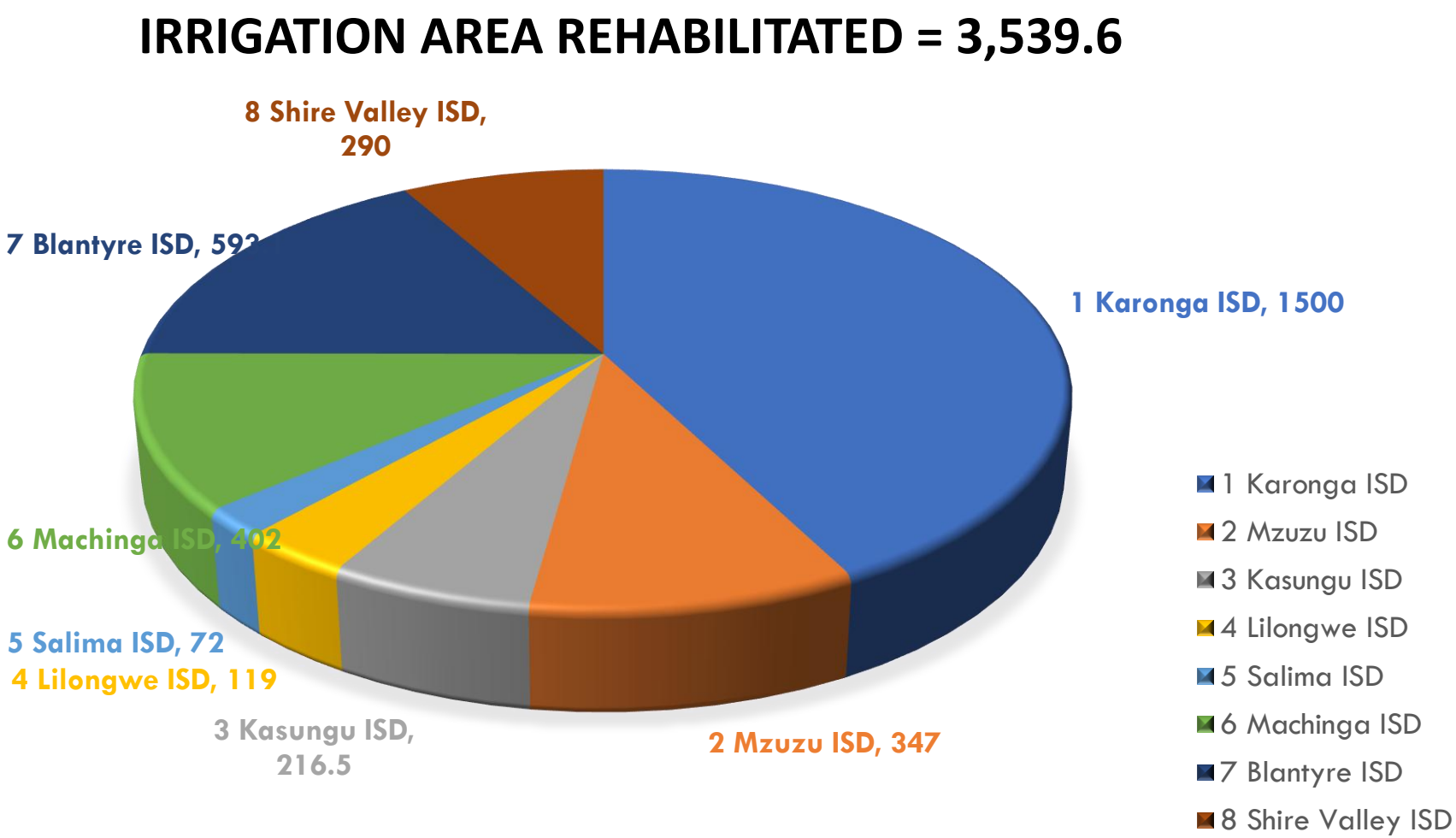
- **The annual average Area Developed under 2024/25 (2160.9 ha) fell short of both IMPIF and CAADP targets**

2024/25 Developed Irrigable Area (Smallholder &Private Estates)

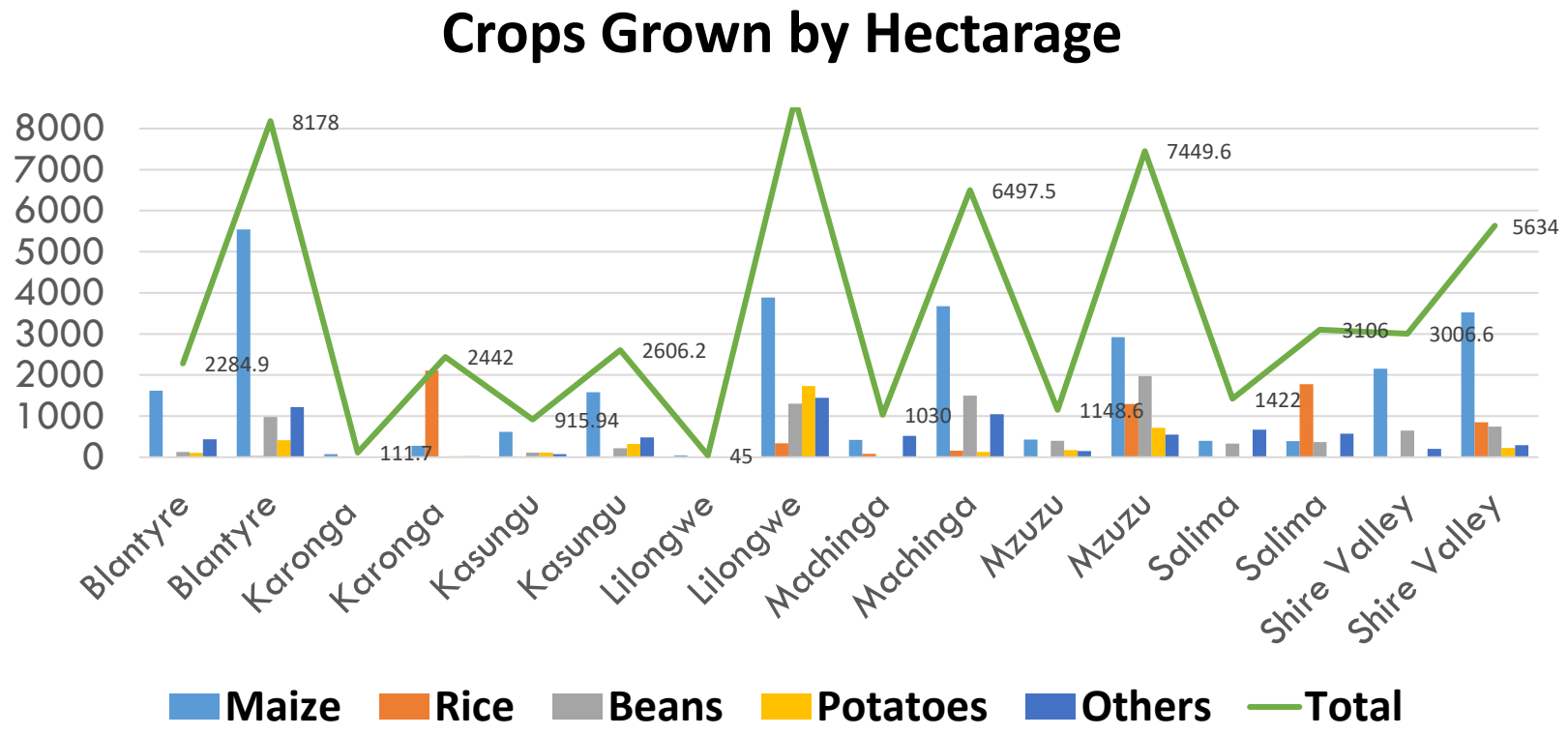


- ✓ **In 2024/25 the newly developed area was 2160.9 comprising 429 ha Private Area and 1731.9 Ha Smallholder Area.**
- ✓ **This represents 37.9% of the Annual Target of 5700 Ha in comparison to 94% achieved in the previous year**
- ✓ **However, considerable investments were made during the year**
- ✓ **This includes irrigation infrastructural investments under SVTP, MWASIP, AYAP, MRDRMP, PRIDE**

Irrigation area rehabilitated



Developed Irrigation Area Utilized



- ✓ **The DoI aims to facilitate the utilisation of 80% of the area developed under all irrigation schemes' technologies**
- ✓ **On average 65% of utilization was achieved during the reporting period**

Confirmed Irrigation Investments for 2024/25

New area-construction	Area (Ha)		FUNDING AGENCY
Dwambazi	645	Nkhotakota	AGCOM II\MFSRMP
Bwanje Valley Extension	1400	Dedza	
Lembani	800	Neno	
Mwenelondo	600	Karonga	
Chipofya	1000	Rumphi	PRIDE
Mzenga	900	Nkhata Bay	
Dowa Dambo	300	Dowa	
Nazombe	200	Chiradzulu	
Nkawinda	200	Blantyre	MWASIP
Shire valley	2170	Chikwawa	MRDRMP
	8125		

List of Running Projects for the Sector

Name of Program/Project	Implementing Sector	Irrigation Interventions
SVTP	Agriculture	development of 43,370 hectares under irrigation in Chikwawa and Nsanje
PRIDE	Agriculture	development of Chipofya, Mzenga, Dowa-Dambo and Wowo irrigation schemes.
AGCOM 2/MFSRP	Agriculture	Construction of Bwanje, Lembani, Mwenilondo, Dwambazi, Kasimba and Lupenga Irrigation schemes, Capacity building of irrigation schemes

Failed intervations? The case of Bwanje Valley Irrigation scheme

- Old traditional irrigation system was upgraded, through Japanese led design, without thorough community consultation.
- In the past, local farmers used flood water to grow rice during the rainy season.
- They produced upland crops using residual moisture throughout the dry season.
- After the upgrade was finished local farmers, who had their own arrangement for managing the Scheme had conflicting opinions.

On 2nd of July 2019, the Government of the Republic of Malawi and the European Union jointly commissioned Bwanje Dam and officially handed over the facility to the community for use.

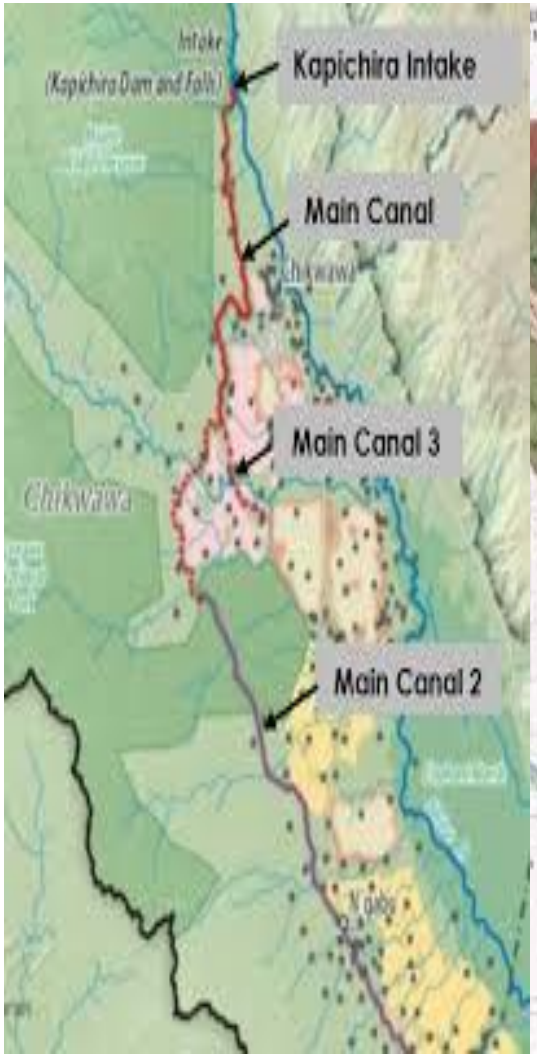
Opportunities for transformation or regional cooperation

Malawi-Shire Valley Transformation Program

Funded by World Bank, African Development Bank, and Global Environment Facility (GEF)

- **Three consecutive but partially overlapping phases will be used to implement the 14-year SVTP program (2018–2031).**

- **Water extracted at Kapichira and transported by gravity via canals to the irrigable areas in the districts of Chikwawa and Nsanje, irrigating 43,370 hectares of land.**



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The SVTP is guided by the following rules:

- **Farmers who wish to participate must organize and combine their land**
- **Present land owners and users will benefit and be included in agricultural modernization**
- **Private involvement in collaboration with landowners and users permited**
- **Allow communities to choose whether or not to participate in the plan**
- **Fees should be charged to cover the cost of maintaining, managing, and operating the irrigation system.**

Mega Farms Support Programme

The Mega Farm Initiative, which was introduced on August 31, 2023, encourages capital-intensive projects that need a lot of equipment, like tractors and irrigation systems, with the goal of reducing poverty and hunger in Malawi by increasing agricultural output and exports.

Programme Objectives

- Promoting irrigation
- Providing investors with access to unutilized or underutilized estate land
- Strengthening agricultural financing and increasing agricultural exports

Mega farms programme incentives

Financing facility

- **The mega farm unit collaborates with financial institutions such as government projects funding agricultural value chains, microfinance organizations, and commercial banks.**

Off-takers facility–market

- **Facilitating legally binding agreements or contracts between investors in anchor farms and produce off-takers, including providing the farmers with production inputs in advance**

Farm management

- **In order to maximize farm business revenues, the institution helps anchor farmers with agricultural technical consultancy services and farm business management.**

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Farm machinery

- **Encourage and assist any farmer who owns a tractor or set of tractors to run agricultural machinery by renting services.**

- **Encouraging tractor ownership by farmers for hire**

- **Encourage the Mahindra tractors owned by Delta Automobiles Malawi Ltd., which has launched a statewide tractor rental program to serve all Agricultural Development Divisions (ADDs).**

- **MoA has redesigned and reorganized its ADD-based agricultural machinery rental program.**

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Supplimentary Irrigation facility

- Every farmer will be urged and assisted to have some kind of backup irrigation system to mitigate dry spells or droughts.

Some of the technologies include:

- Rainwater harvesting into concrete water reservoirs on farms

- Drilling boreholes with solar pumping technology and standing water tanks

- Allocating 75 motorized water pumps for long-term credit terms to farmers who will have installed rainwater harvesting reservoirs

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Anchor/Mega farmers one stop centre

- **Dedicated technical officers from the Ministry's technical departments work in the Ministry of Agriculture's newly created "Mega Farm Support Unit," which is headquartered at the Kanengo Office.**

Green Belt Authority

Mandate

- **The Greenbelt Initiative's Greenbelt Authority Act No. 23 of 2017 created the Greenbelt Authority (GBA), a government corporation. The organization's goal is to promote extensive commercial irrigation by making effective use of land and water resources in order to hasten the nation's socioeconomic development.**

Mission

- ***To increase sustainable irrigated agricultural production and productivity through well developed and managed infrastructure for comprehensive utilization of land and water resources as well as effective service delivery.***

Strategic Objectives

- **To increase area under sustainable irrigation.**
- **To increase production and productivity of crops, livestock and fisheries technologies.**
- **To improve market access and linkages.**
- **To increase volumes and quality of value added products.**
- **To improve access to socio-economic infrastructure in the context of rural growth centers.**

Thematic Areas

- **Agricultural Production and Productivity**
- **Irrigation Infrastructure Development**
- **Agro-processing and Marketing**
- **Corporate Services**

Project Implementation Arrangements

GBA makes it easier for one or two of the following partners to form a special purpose company (SPV) as a joint venture:

- ❑ GBI Holdings (the investment vehicle of GBA)
- ❑ Local farmers or land owners through an Association/Cooperative
- ❑ Reputable private investor(s)

- ➢ A corporation limited by shares may be used as the SPV, enabling a number of respectable investors to participate in ownership, decision-making, and benefit sharing.
- ➢ Equity contributions determine how shares are distributed.

Project Management Structure

- **GBI Holdings, a body corporate tasked with investing on behalf of GBA, makes investments in major commercial irrigation projects.**

- **A number of projects are conceptualized on rice, wheat, industrial hemp and Aquaponics and bamboo plantation projects to operate as joint venture companies with prospective investor(s).**

Conclusion

- **Malawi's susceptibility to unpredictable rainfall patterns may be reduced with irrigation development.**

- **Malawi must invest more in irrigation, but only through an open process approach to irrigation development based on a thorough socio-technical understanding of irrigation realities, rather than the mindset of an irrigation factory.**

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- Some irrigation projects in Malawi have encountered difficulties or even completely failed, frequently as a result of a confluence of issues such as poor water management, improper maintenance, and insufficient community consultation.

- Nevertheless, there exists opportunity to learn from such incidences but also opportunity for regional cooperation exists on macro government led progrommes like the Shire Valley Irrigation Transformation Programme, the Greenbelt Initiative and the recent Mega Farms Program.

THANK YOU FOR YOUR ATTENTION