The Interventions being promoted to improve Soil Health and conservation

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OUTLINE

- Introduction
- Interventions in Soil health and conservation
- Current work

Introduction

- **Importance of the Agriculture Sector in Malawi**
  - Key sector of the Malawian economy.
  - Employs over 80% of the workforce.
  - Contributes over 80% to foreign exchange earnings.
  - The sector generated 22.4 % of the country's Gross Domestic Product (GDP) in the 2021/2022
  - Supplies >65% of the manufacturing sector's raw materials
  - Provides 64% of total income of the rural people.
  - The major livelihood source for rural Malawians.
  - Significantly contributes to national & household food security.

Introduction

- **Challenges in agriculture**
- Agriculture sector in Malawi is faced with so many challenges that hinder its growth
  - next slides

Waterlogging Conditions
Mchinji - 18 February 2017

Prolonged dry spells and droughts

Prolonged dry spells in Balaka

Conventional farming

Opening up a new agricultural fields in Utale Balaka-Agriculture has contributed to the loss of vegetation cover through expansion into new areas of cultivation.

Deliberate burning of crop residues

Kandeu in Ntcheu

Conventional Ridge Tillage with Hand-Hoes

Splitting ridges is not only labour intensive, it often delays the proper time of planting with severe impacts on crop yields. (source: TLC)

Gully formation in T/A Ganya NU

Conventional agricultural practices

land clearing and gully formation in Machinga

soil and water loss through erosion

Run Off.MPG

Malawi has a total land area of 94,300 km^2, of which about 4.7 million ha (or 50% of the total dry landmass) is arable, with about 80% of it available to smallholder farmers as customary land

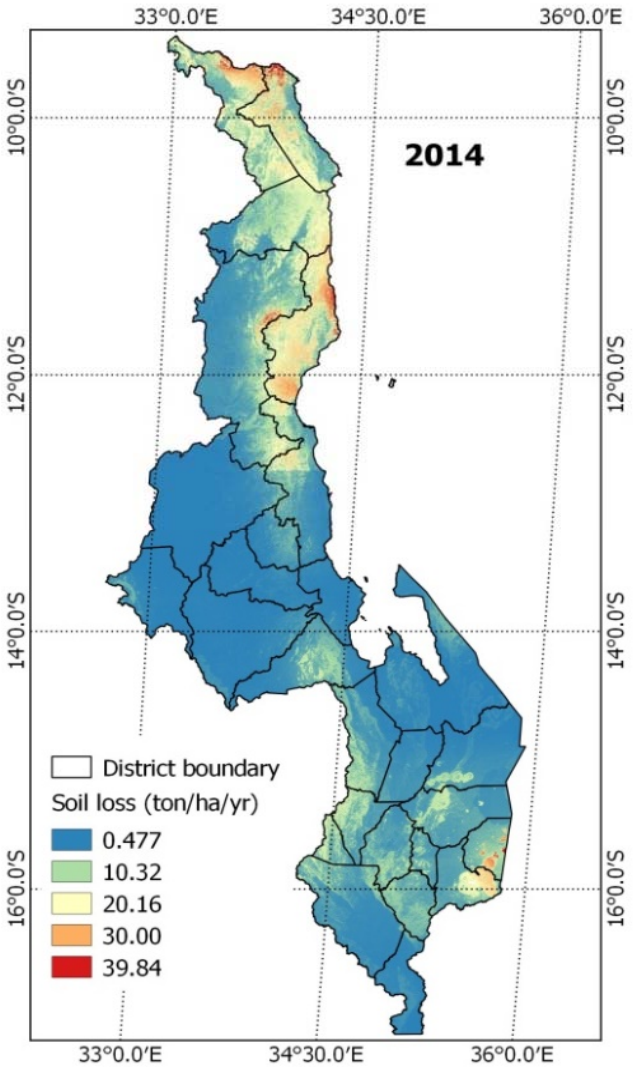
Studies suggest that land degradation hotspots cover about half (41 percent) of the land area in the country.

Soil erosion and nutrient depletion are severe forms of land degradation that affect more than 60 percent of the entire land area.

Soil Loss Rates

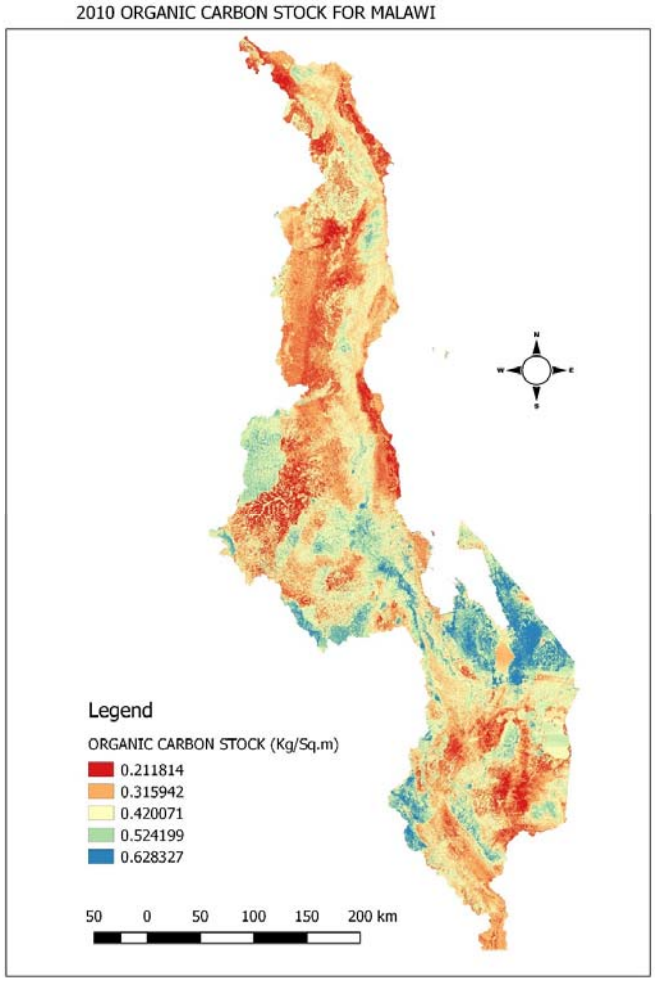
- Overall, in 2014, the national average soil loss rate was **29ton/ha/yr.**
- The areas with high extremes of soil loss rates were found to have had steep slopes, shallow soil, and with low vegetation cover

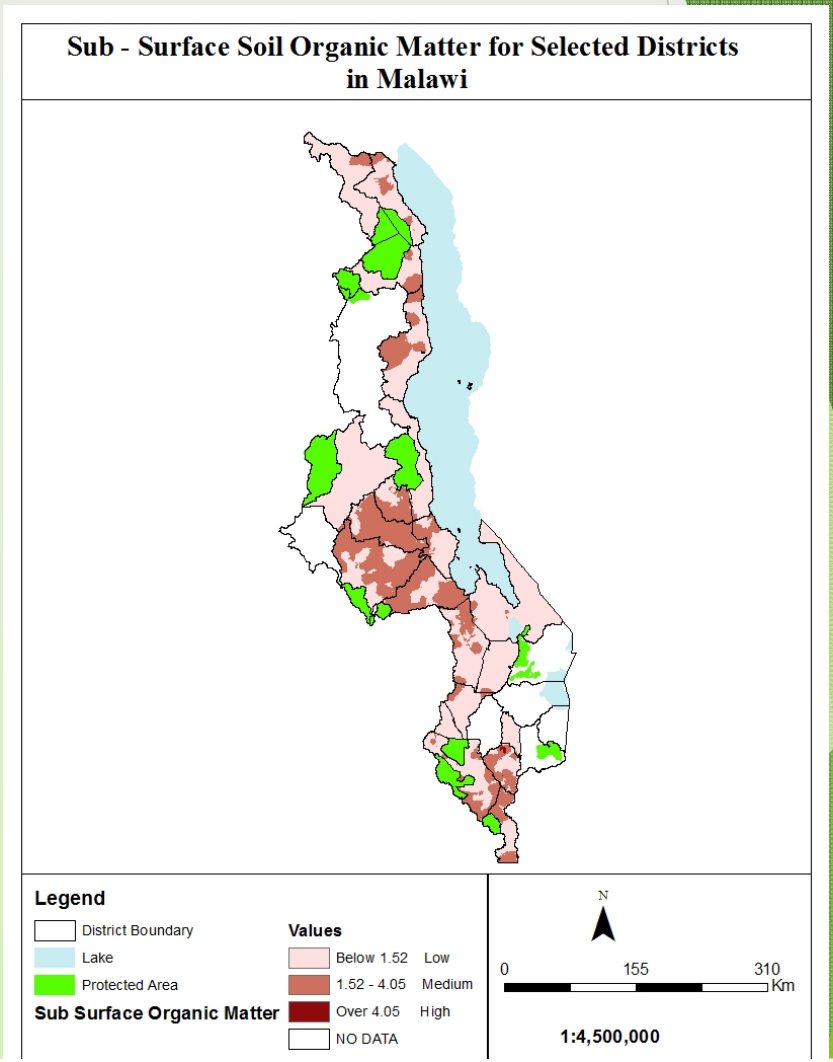
direct costs are significant and range between 0.6-2.1% of the GDP of Malawi.



REGION	DISTRICT	MEAN	STDEV	MINIMUM	MAXIMUM
North	Chitipa	15.22	7.8	0.4	39.08
North	Karonga	15.81	8.59	0.69	39.74
North	Nkhata Bay	19.83	7.35	2.28	38.01
North	Rumphi	11.24	6.4	0.78	30.84
North	Mzimba	6.42	5.75	0.43	33.94
Central	Kasungu	0.89	1.19	0.13	14.55
Central	Nkhotakota	6.43	6.11	0.56	30.6
Central	Ntchisi	2.76	1.82	0.34	8.93
Central	Dowa	0.9	0.46	0.24	3.43
Central	Salima	1.11	0.59	0.31	7.23
Central	Lilongwe	1.05	0.74	0.24	8.17
Central	Mchinji	1.07	1.23	0.22	9.81
Central	Dedza	4.17	3.4	0.39	19.88
Central	Ntcheu	4.53	3.5	0.38	19.48
South	Mangochi	1.44	1.35	0.11	9.97
South	Machinga	2.44	2.76	0.2	16.55
South	Zomba	4.92	3.29	0.98	20.49
South	Chiradzulu	5.37	2.85	1.22	18.41
South	Blantyre	5.49	2.9	1.07	16.16
South	Thyolo	6.19	2.13	0.91	15.37
South	Mulanje	9.64	7.76	1.57	33.4
South	Phalombe	10.22	8.15	2.54	35.17
South	Chikwawa	3.35	2.81	0.54	21.33
South	Nsanje	1.46	1.03	0.26	7.97
South	Balaka	2.1	1.05	0.38	12.64
South	Mwanza	9.03	4.51	1.27	23.32
South	Neno	7.44	4.26	1.44	21.07

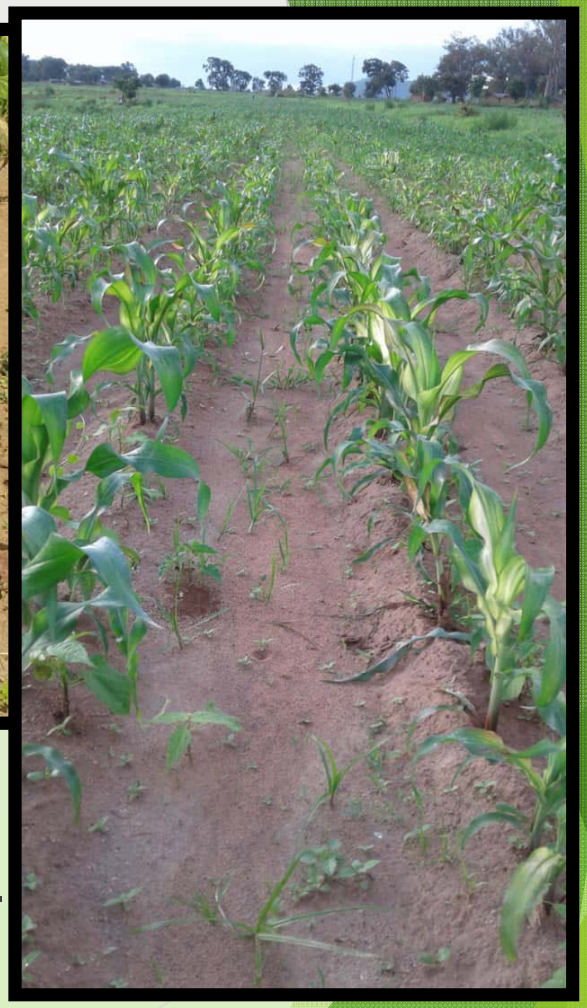
Low levels of soil organic carbon and Matter





cultivation in fragile areas

- River bed cultivation (dimba cultivation) in Lifune River in Machinga



lack of area specific fertilizer blends - Micro-nutrient deficiencies in Maize – Linthipe, Dedza

Department of Land Resources Conservation (LRCD)

- LRCD is mandated to provide policy guidance, land resource information and training in order to achieve sustainable land resources management and prevention of land degradation that will increase and sustain its productivity for agricultural growth and development.
- Vision -‘a nation with reduced land degradation’.

- Goal “To promote efficient and diversified and sustainable use of land based resources for both agriculture and other uses in order to avoid sectoral land use conflicts and ensure sustainable socio-economic growth and development”

Functions of the Department of Land Resources Conservation

- The major functions of the department are:
  - development of policy standards and strategies relating to land resources management;
  - planning and coordination of programmes on land resource management;
  - providing land resources information services;
  - monitoring and evaluating land use/cover changes;
  - providing training in land resources management, and
  - providing technical support in land resource management.

Interventions to improving soil health and conservation

- wide range water and soil management practices which include mulching, inter-cropping, crop rotation, ISFM, CA, SWC, AF, use of organic inputs and balanced use of fertilizers.

agroforestry

Agroforestry Nurseries in Lilongwe and outplanting in Dedza

Conservation Agriculture

CA field integrated with Fardherbia albida in Matenje EPA, Salima

Mr Mwalughali -CA farmer on his field in Zombwe EAP in Mzimba

Manure making and use

- check dams to control gullies and running water

Soil and water conservation

Swale in Dedza and infiltration pits in Lupembe in Karonga

integrated catchment

A CA field integrated with vetiver and maker ridges in Ulongwe EPA in Balaka

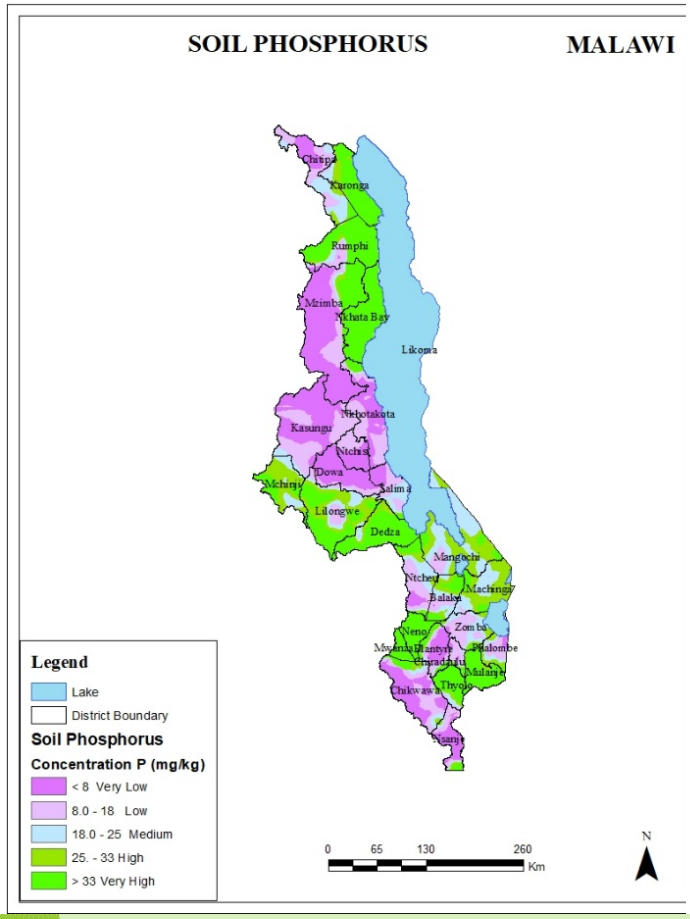
capacity building for both staff and farmers

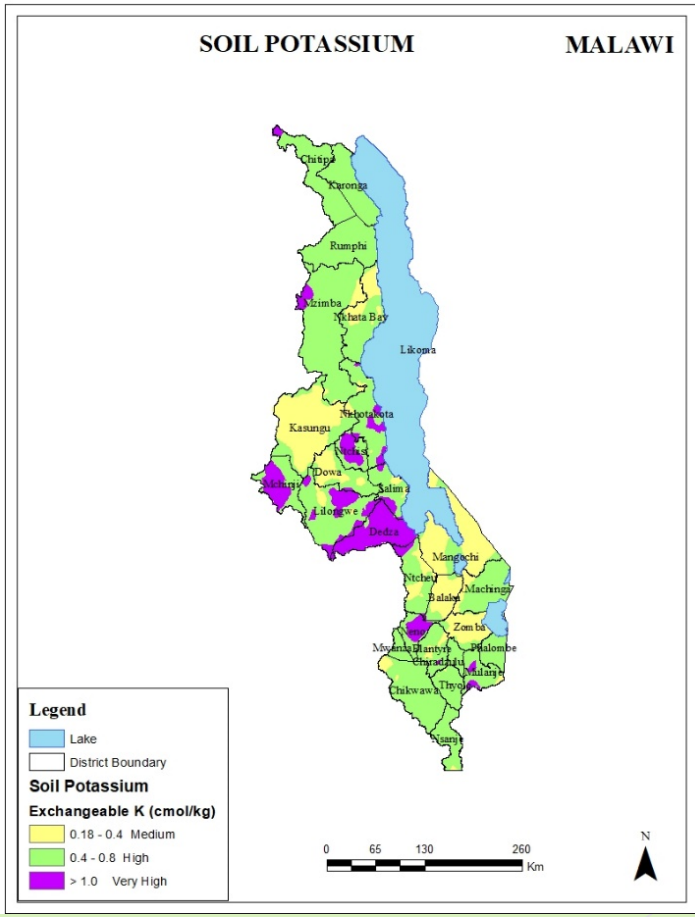
Achievements registered in the last season

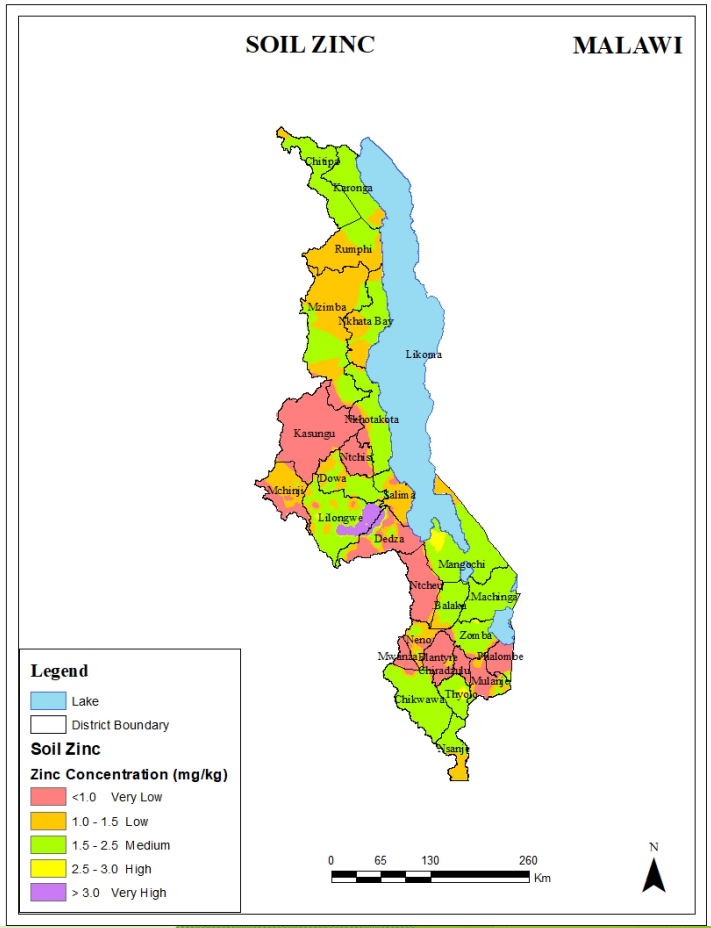
- The total area achieved under SFI is 348,637 hectares, a 32 percent increase from the 2020/21 growing season
- *Annual Achievements of selected SWC technologies in 2021-22 season*

Technology	National Target	Annual Achieve	% Achieve
Marker Ridges (Ha)	47,354	27,085	57.00
Ridge Realignment (Ha)	36,853	21,499	58.30
Box Ridging (Ha)	45,538	22,555	49.53
Gully Reclamation (Number)	8,667	10,239	118.14
Vertiver Hedgerows	1,736	1,197	68.95

Updated the soil nutrient status

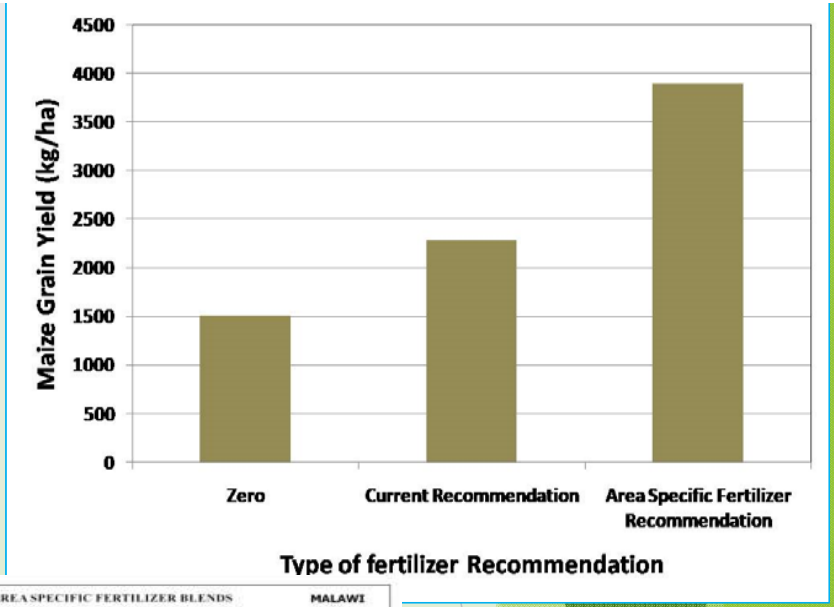


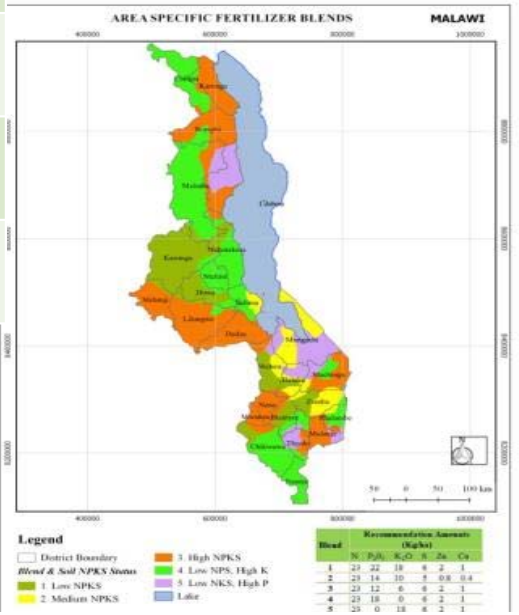




Developed ASF Blends for the country

Soil nutrient status					Recommendation blends					
No	N	P	K	S	N	P_2O_5	K_2O	S	Zn	Cu
1	Low	Low	Low	Low	23	22	18	6	2	1
2	Med	Med	Med	Med	23	14	10	5	0.8	0.4
3	High	High	High	High	23	12	6	6	2	1
4	Low	Low	High	Low	23	18	0	6	2	1
5	Low	high	low	Low	23	0	18	6	2	1

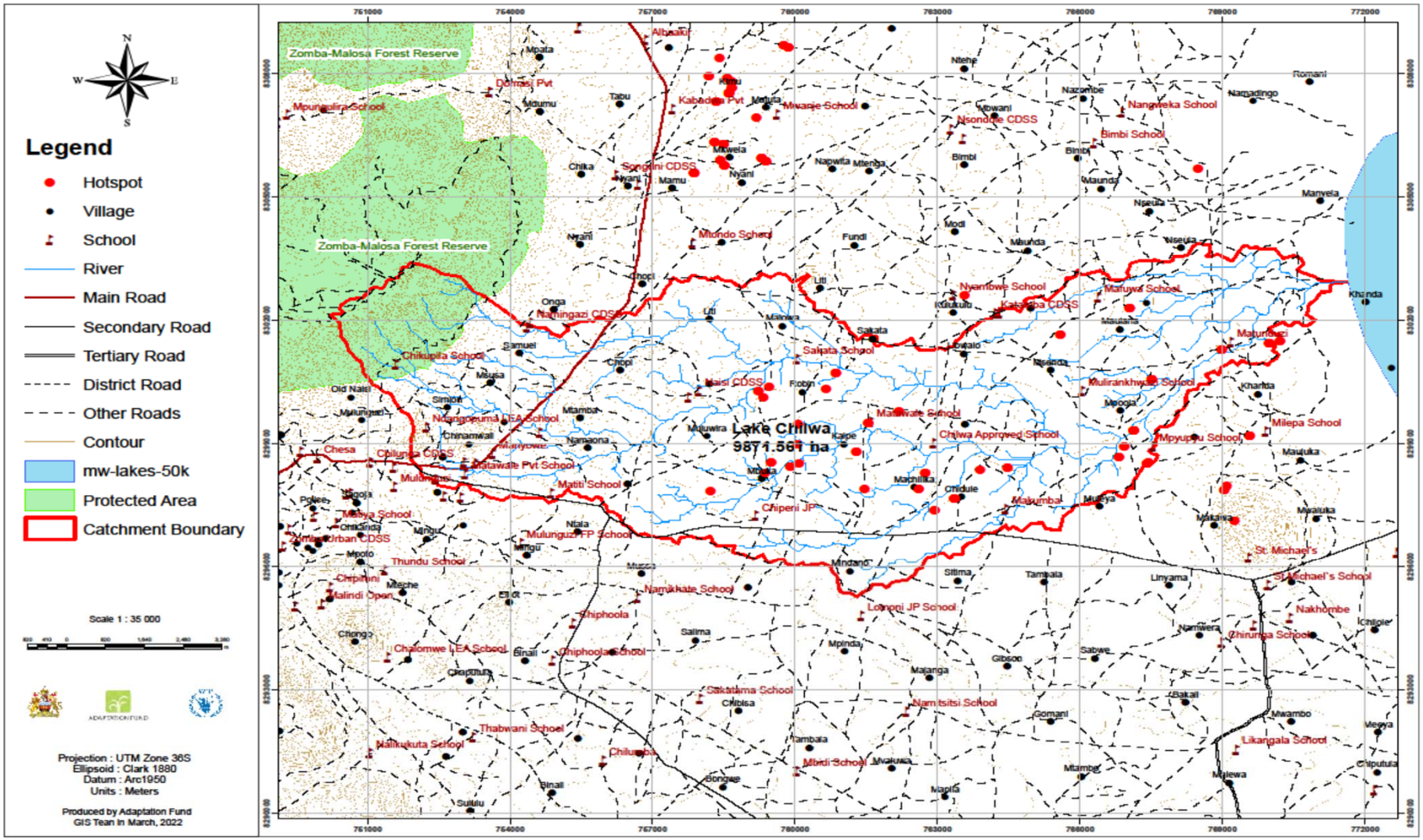




Innovations

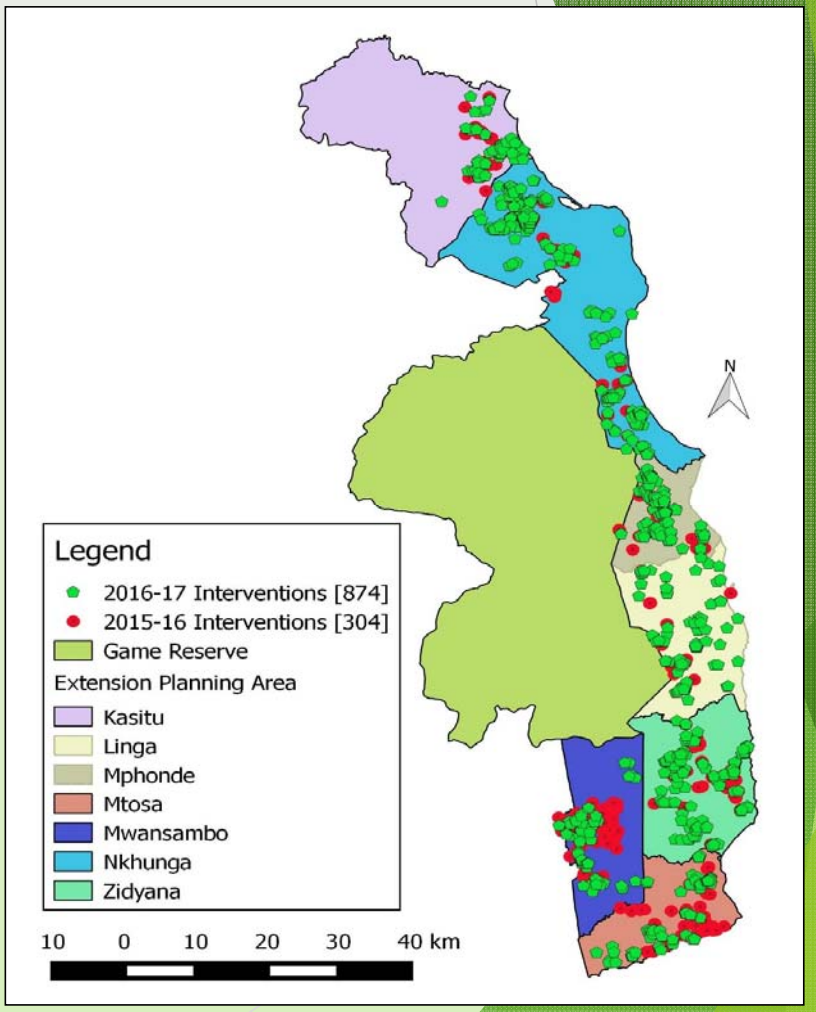
- Use integrated catchment management Model

LAKE CHILWA CATCHMENT



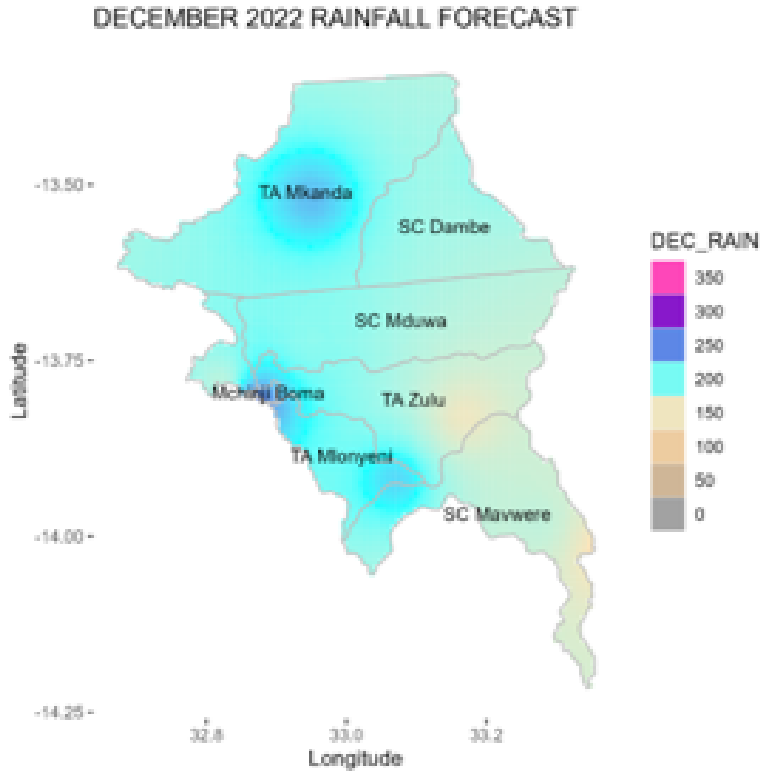
Use of Geospatial technologies to capture and monitor interventions

- There was 196% increase in the implementation of intervention in the second season i.e. from 304 in 2015/16 to 874 beneficiaries in 2016/2017 season as shown in Figure
- 47% of farmers renting fields dropped the interventions in 2016/17 season leading to decreased rates of adoption among farmers as it can be seen in Mwansambo and Mtosa agricultural planning areas in Figure



Linking with other Departments like DCCMS to make use of downscaled climate information

December 2022



The month of December is expected to be drier than normal in areas around SC Mduwa, TA Zulu and SC Mavwere. Rainfall amounts ranging from 100mm to 250mm are expected over most areas.

Normal rainfall amounts are expected over areas west around Mchinji Boma, TA Mlonyeni TA, Mkanda and SC Dambe, which are also expected to be wetter than the rest of the district.

Current work

- Updating the National Land Resources Management Policy
- To promote Mbeya organic fertilizers-campaigns and also to undergo approval process
- Promotion of new fertilizers through awareness demonstrations
- Conduct agroforestry month campaigns


END OF PRESENTATION
THANK YOU FOR LISTENING