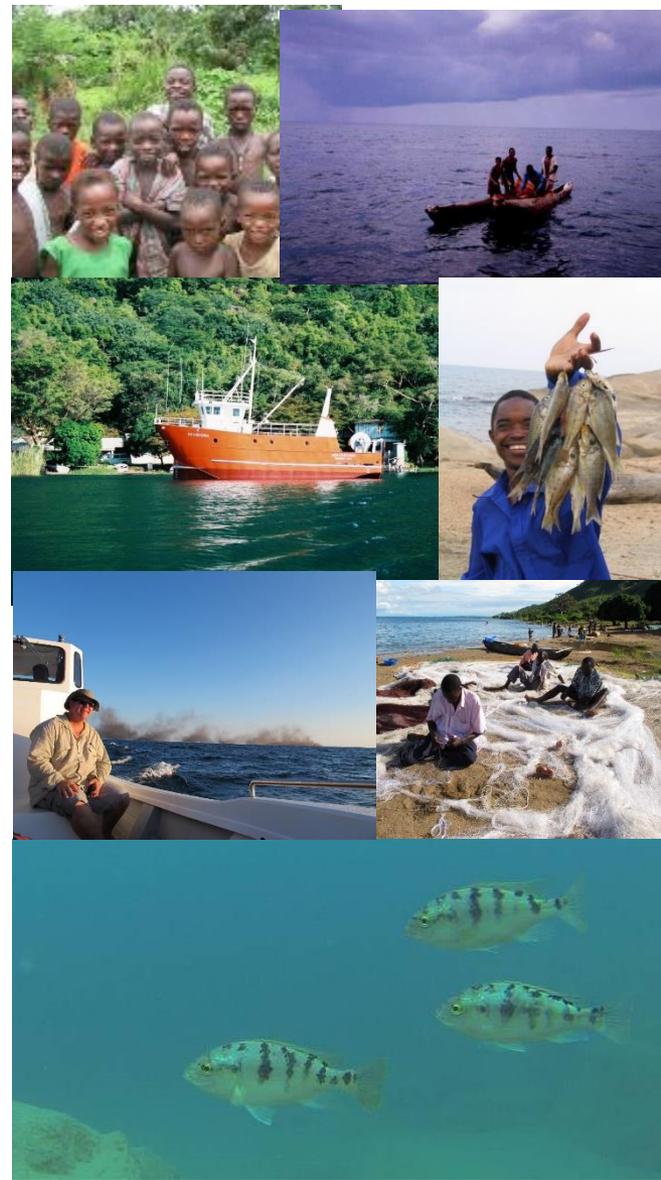


# Fish and fisheries in Lake Malawi: an assessment of four decades of management interventions



**Olaf LF Weyl<sup>1</sup>**, Steve Donda<sup>2</sup>, Mafaniso Hara<sup>3</sup>, Friday Njaya<sup>2</sup> and Denis Tweddle<sup>1</sup>

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**African Great Lakes Conference**  
**2–5 May 2017**  
**Entebbe, Uganda**



**PLAAS**  
Institute for Poverty, Land and Agrarian Studies







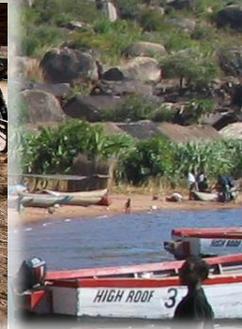
>200 species harvested



# Multi gear fisheries

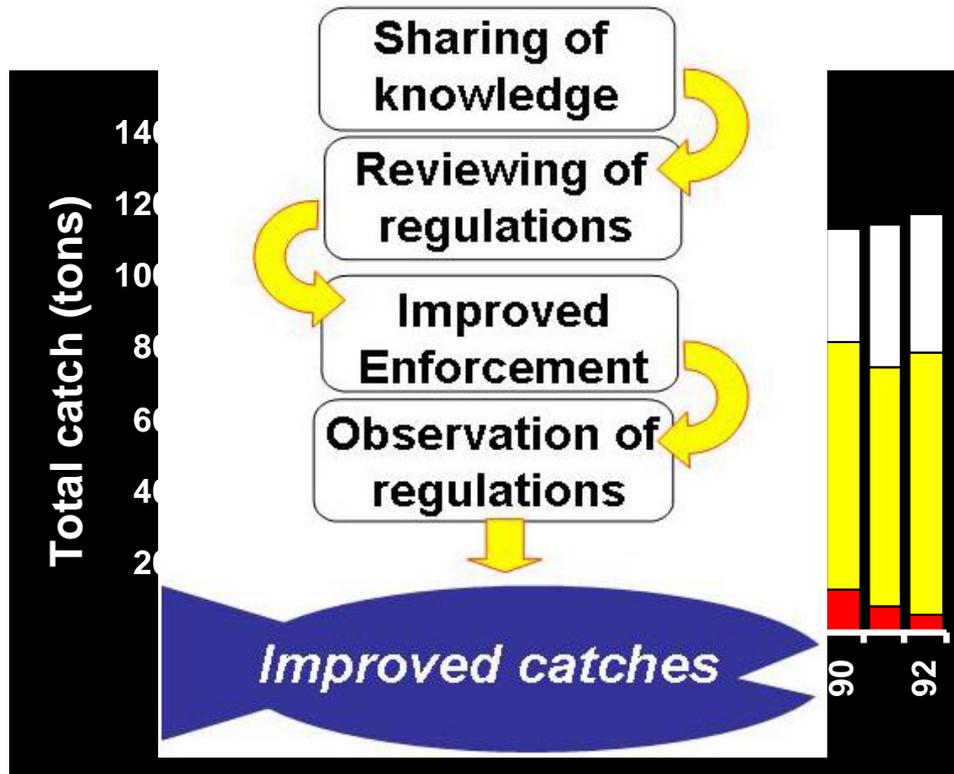
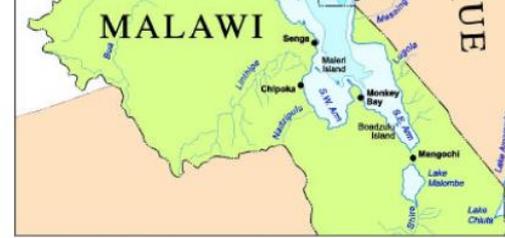


# Fisheries value chains



# 1993 the co-management era begins

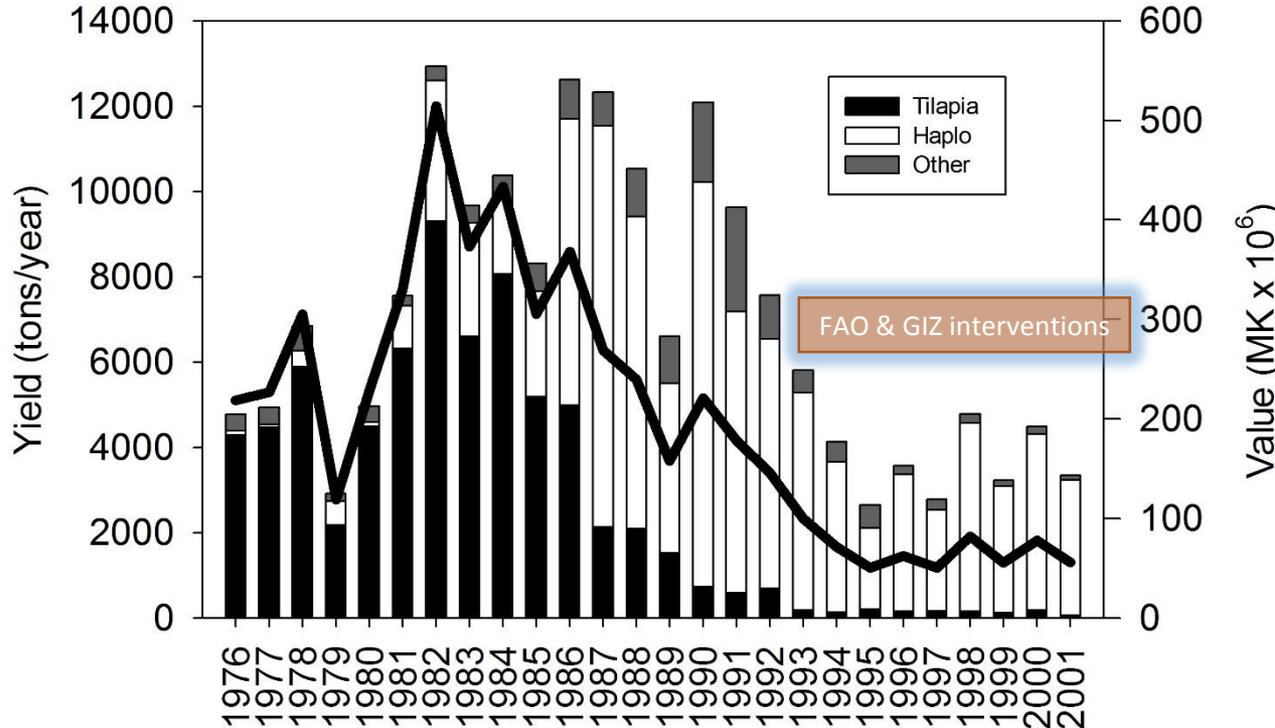
- 1980s crash of the Chambo fishery in Lake Malombe demonstrated that “top-down management had failed completely”.
- 1993 co-management was initiated with FAO, UNDP and GTZ (now GIZ) support on Lake Malombe and then on Lake Malawi.





Government of Malawi  
 MINISTRY OF NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS  
 Department of Fisheries  
 NATIONAL FISHERIES AND AQUACULTURE POLICY

“...participatory fisheries management has proven to be the most appropriate method to manage the fish resources in the lakes of Malawi.”  
 (Fisheries Policy 1999)



# Lake Malawi Status 2002

- Decreasing CPUE
  - Stable yields maintained by increasing effort.
- Depletion of high value fish
  - Chambo fishery decreased from 5000 t/y to 2000 t/y.
- Effort reduction recommended.



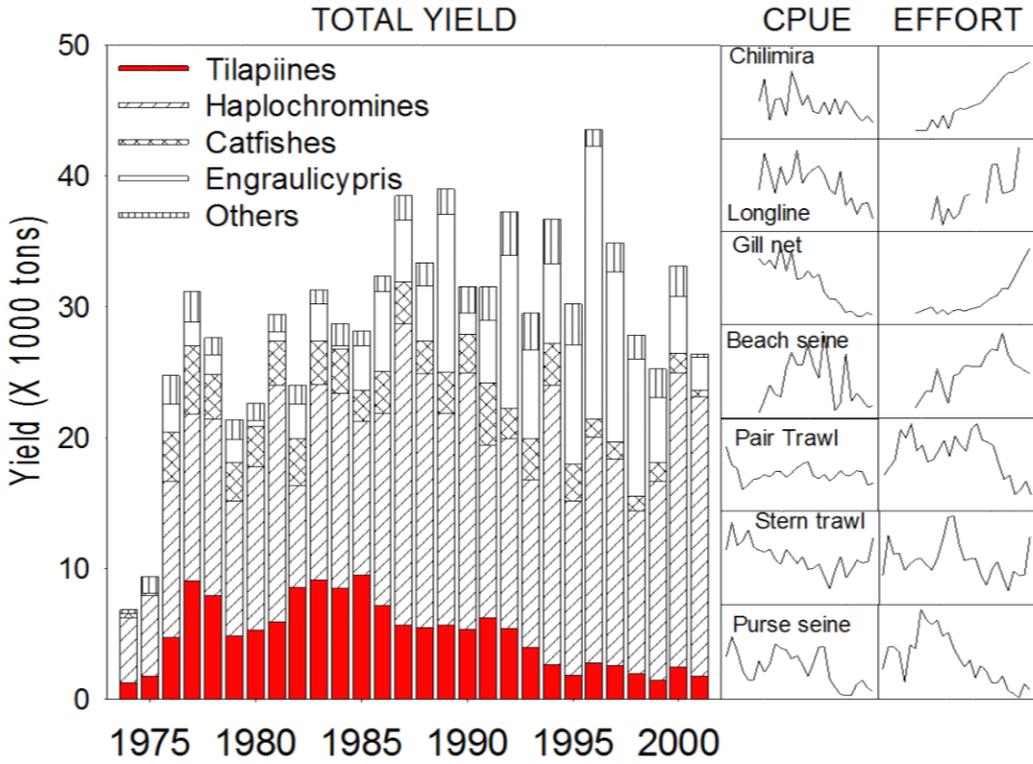
## Lake Malawi: fishes, fisheries, biodiversity, health and habitat

Olaf L. F. Weyl,<sup>1\*</sup> Anthony J. Ribbink,<sup>2</sup> and Denis Tweddle<sup>1</sup>

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# Chambo restoration plan (2005) targets redirection of fishing effort to “under-exploited” offshore stocks.

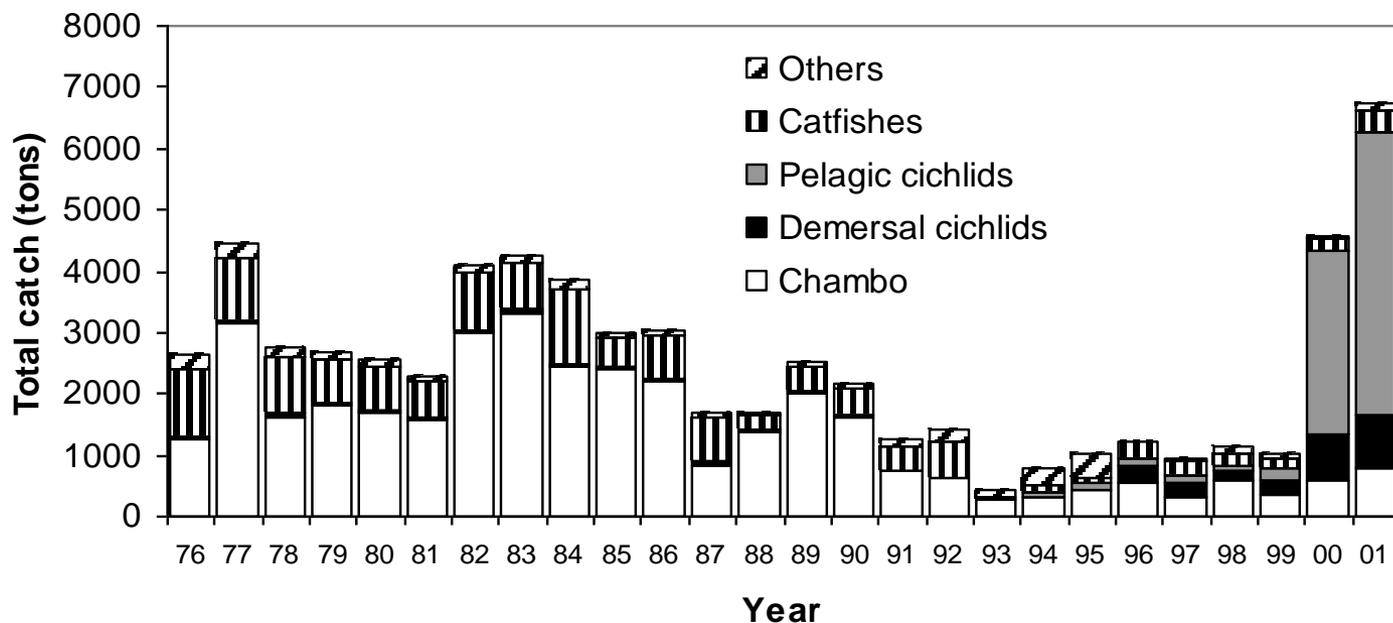
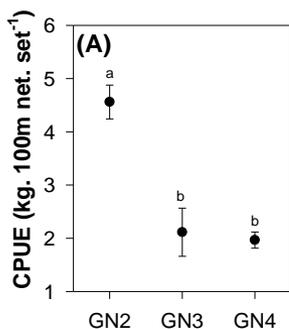
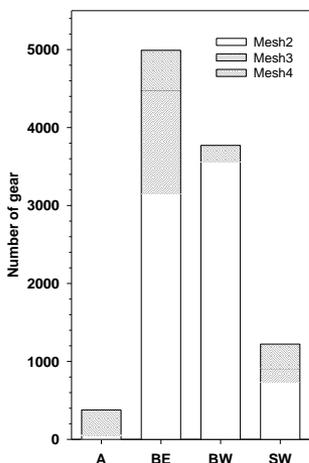
Stock	Area	Author	Biomass	Yield (% B)	Sustainable yield
Demersal stocks					
Deep demersal (>50m)	South East Arm (C) 1994-96	Banda & Tómasson 1997	6,040	30	1,812
	South West Arm 1994-96	Tómasson 1997	7,220	30	2,166
	Domira Bay 1994-95	Banda & Tómasson 1996	6,865	30	2,060
	Chia to Nkhotakota 1994		850	30	255
	Nkhotakota to Dwangwa 1994		1,050	30	315
	Dwangwa to Sanga 1994		3,570	30	1,071
	Ngara to Lufira 1981	Tweddle 1981	1,588	45	715
	Total		27,183		<b>8,394</b>
Offshore pelagic stocks					
Diplotaxodon	Lake Malawi	Menz & Thompson 1995	119,700	19	22,700
Rhamphochromis			16,800	17	2,800
Copadichromis			8,700	16	1,400
Other cichlids			3,400	18	600
Engraulicypris			5,100	63	3,200
Opsaridium			1,300	23	300
Synodontis			13,400	17	2,300
Total				168,400	
				<b>Total</b>	<b>41,694</b>

(after Seymour 2001)



# Indications that artisanal fishery was already there

- In southern Lake Malawi, pelagic and deep water cichlids from deep set (>50m) small meshed gill nets began to dominate gill net catches in 2000.



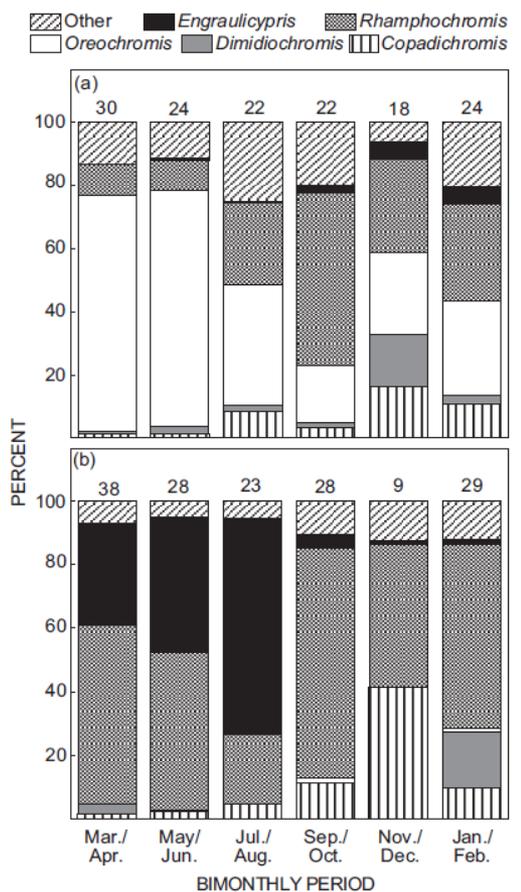
# Offshore Chilimira fishery had also adapted

## An assessment of a light-attraction fishery in southern Lake Malawi

OLF Weyl<sup>1\*</sup>, J Kazembe<sup>2</sup>, AJ Booth<sup>1</sup> and DS Mandere<sup>2</sup>

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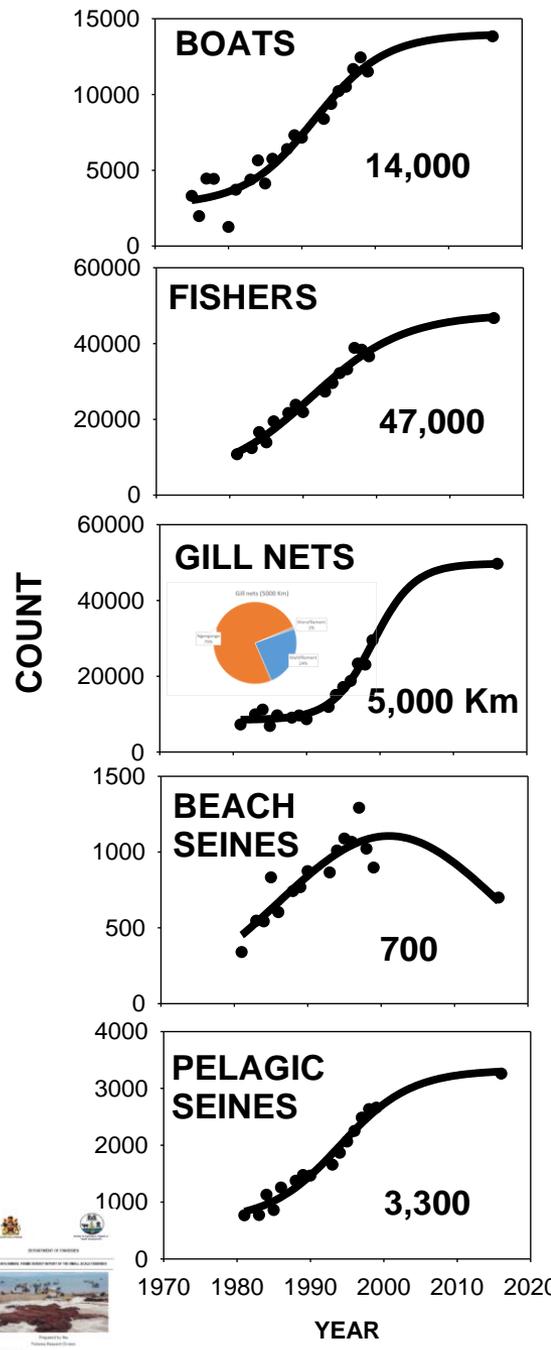
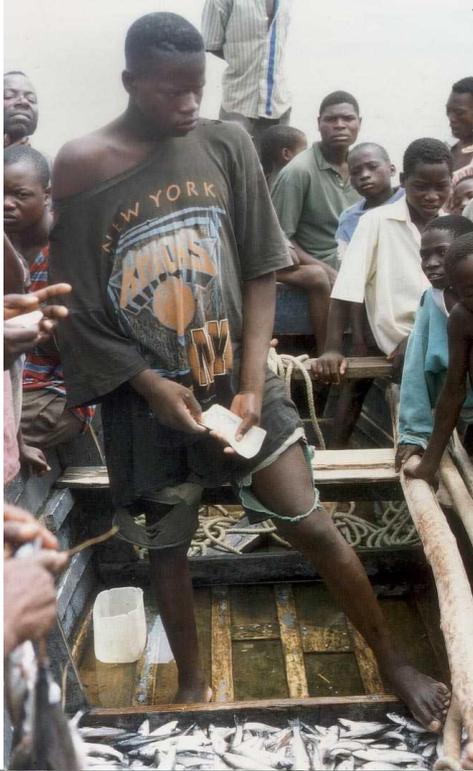


- Target species of the “offshore” chilimira net fishery increasingly contained pelagic cichlids.
- In shallower areas this “off-shore” fishery actively targeted inshore species e.g. chambo.
- We cautioned that expansion in these fisheries might not lead to the desired objectives.

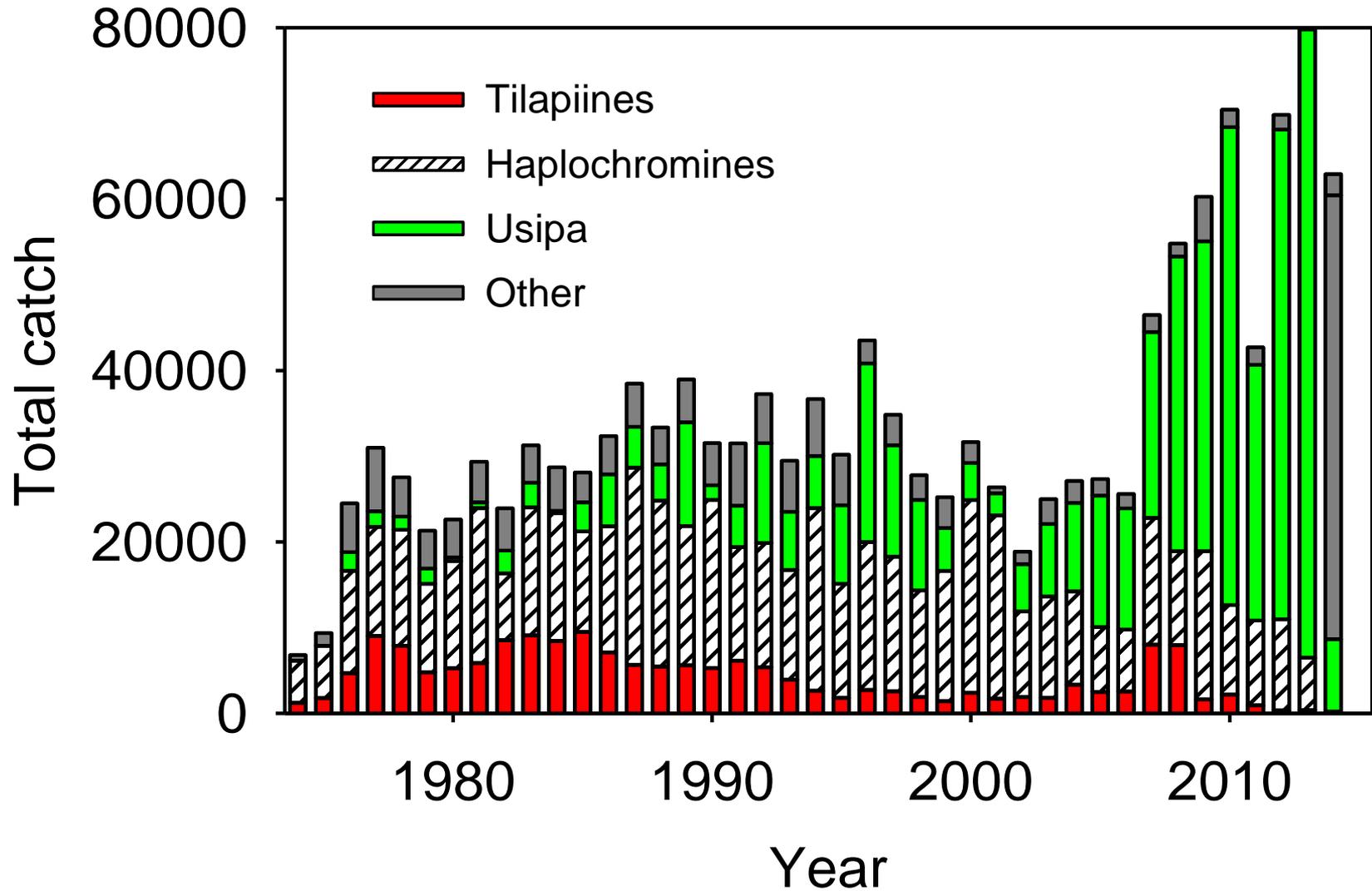


# 2006: Lake Malawi Artisanal Fisheries Development Project

- Facilitate harvest of “unexploited” stocks and move the inshore fishery.
- New plank boats, new fishing equipment, landing sites and marketing.
- Effort increased in all fisheries except the beach seine fishery.

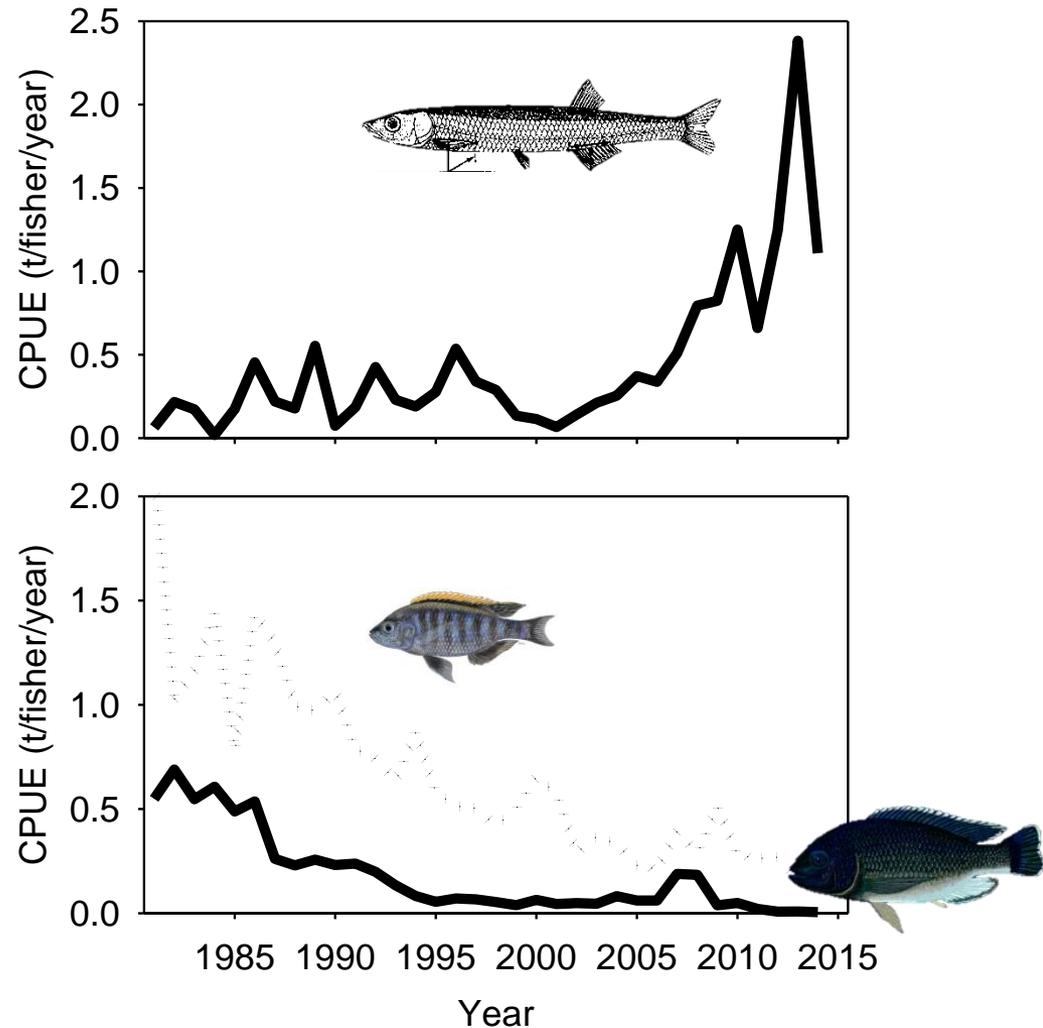


# Total catch increased to >50,000 t



# Increasing reliance on small pelagic usipa

- Usipa is driving fishery
- Cichlid CPUE is declining.
- Not surprising (K-strategists).
- Usipa stock dynamics are environment driven.
- Bad years can follow good years and the fishing fleet is likely to switch target species.



# Current interventions avoid effort reduction

- 2014-2019: USAID “Fisheries Integration of Society and Habitats FISH Project (USAID)”
  - **Knowledge Shared:** Systems & processes established, peer reviewed and shared, utilizing science for “evidence based decision making” and informed management solutions.
  - **Capacity Enabled:** Institutions in “nested governance structures” from Beach Village Committees (BVC), District to National level empowered, able to influence and participate in the co-management of fishery ecosystems.
- 2015: Recent management suggestions (Various projects)
  - Sanctuaries, aquaculture production and stocking.

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Between a rock and a hard place: The need for and challenges to implementation of Rights Based Fisheries Management in small-scale fisheries of southern Lake Malawi



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<sup>a</sup> Institute for Poverty, Land and Agrarian Studies (PLAAS), University of the Western Cape, P/Bag X17, Bellville 5735, South Africa

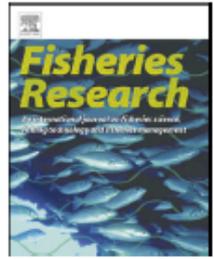
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# Thank you

