FAO SWIOFC/IOTC Weight of Evidence for Fisheries Management Methodology Workshop

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Prawn and Pelagic Fisheries in Tanzania

NEPTUNE BEACH HOTEL, MOMBASA, KENYA, 24th -28th March 2014

B. Kuguru and I. Lilian

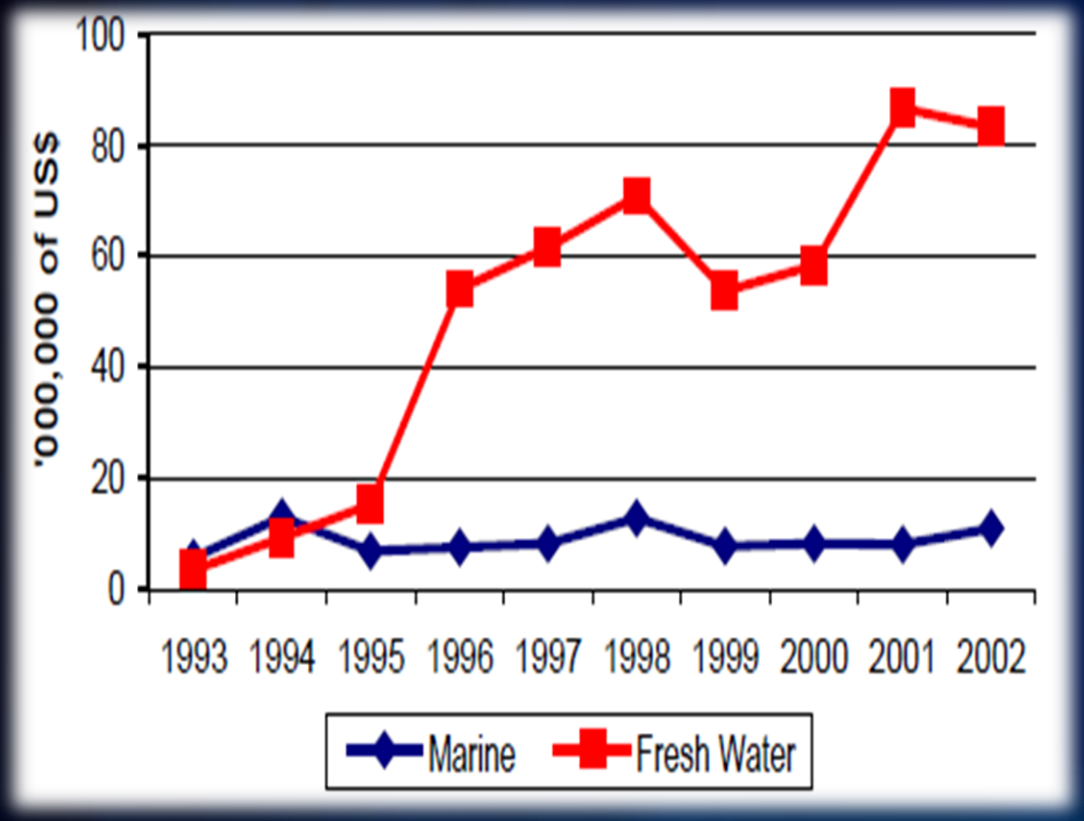
INTRODUCTION

Fisheries is an important economic sector of Tanzania, provides employment, food, and accounts for about 10% of the national exports and also provides for foreign earnings through export of fish and fishery products.

From 1998, the sector grew at 4.3% and contributed an estimated 1.8% of NGDP. In 2011, contributes 1.6% (Planning Commission, 2011).

The drop might be caused by decrease in Nile perch and prawn industrial catches), environmental degradation and increase in population.

Fish Export 2003 trend in TZ



Industrial fishery **Nile perch and prawn** contributed much on export values

a specialist export development agency of the UN supported by UNCTAD and the WTO). 2003

INTRODUCTION

Short term and long term fisheries development strategies

Table 1: Export Development Potential - US$ million per year

Potential	Industrial scale operation			Artisanal scale operation							Total
	Fresh water	Marine		Fresh water		Marine					
	Nile perch	Industrial Shrimp	Oceanic Fish	Dagaa	Aquarium fish	Oth. Marine shellfish	Artisanal Shrimp	Seaweed	Marine Fin-fish	Aqua-culture	
Total export value											
Now	84	6	1	3	1	5	4	4	0	0	108
5 yrs potential	92	6	1	5	1	8	7	5	5	3	133
10 yrs potential	109	7	3	8	1	10	8	7	10	5	168
Increase over current											
5 yr potential increase	8	0	0	3	0	3	3	2	5	3	27
10 yr potential increase	25	1	2	5	0	5	4	4	10	5	61

INTRODUCTION

Shallow water prawns

Prawn fishery industry is the most important marine fishery in terms of social income and export value .
Prawn resources in Tanzania is categorized into two parts:

Shallow prawn resource below 20m

There is limited scientific information to facilitate planning, management and rational exploitation of the resources

INTRODUCTION

Shallow water prawns

Shallow water prawns	
Penaeus indicus	
Penaeus monodon	
P. semisulcatus	
P. japonicus	
P. latisulcatus	
P. canaliculatus	
Metapenaeus monoceros	
M. stebbingi	

FISHING AREA

3 major Prawn fishing areas:

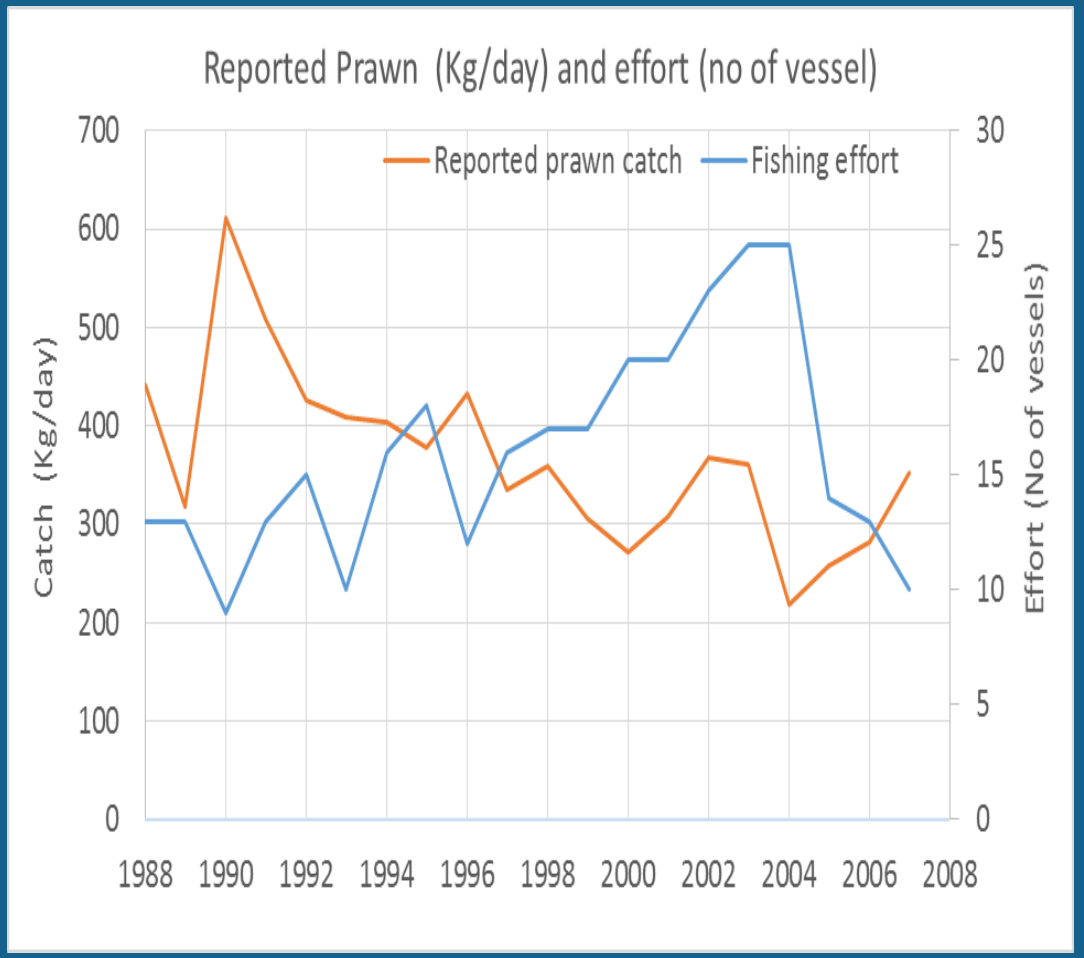
Bagamoyo (Zone I) area extending from 05°30'S to 06°30'S;

Kisiju (Zone II) area from 07°05' to 07 ° 45‘S

Rufiji (Zone III) area from 08°00' to 08°40‘S

MATERIAL AND METHODS

Dynamic of prawns fisheries in TZ



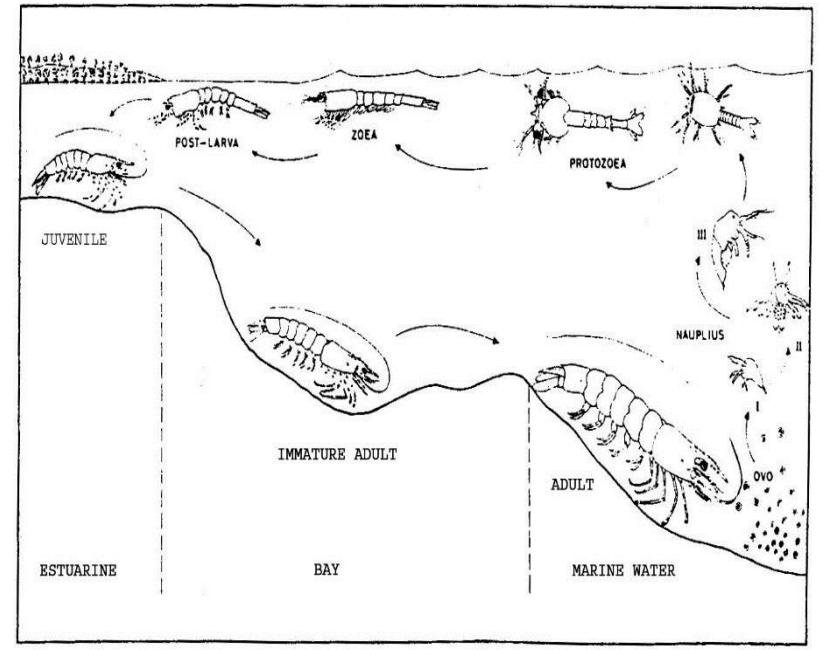
- Catch data
- Stock assessment

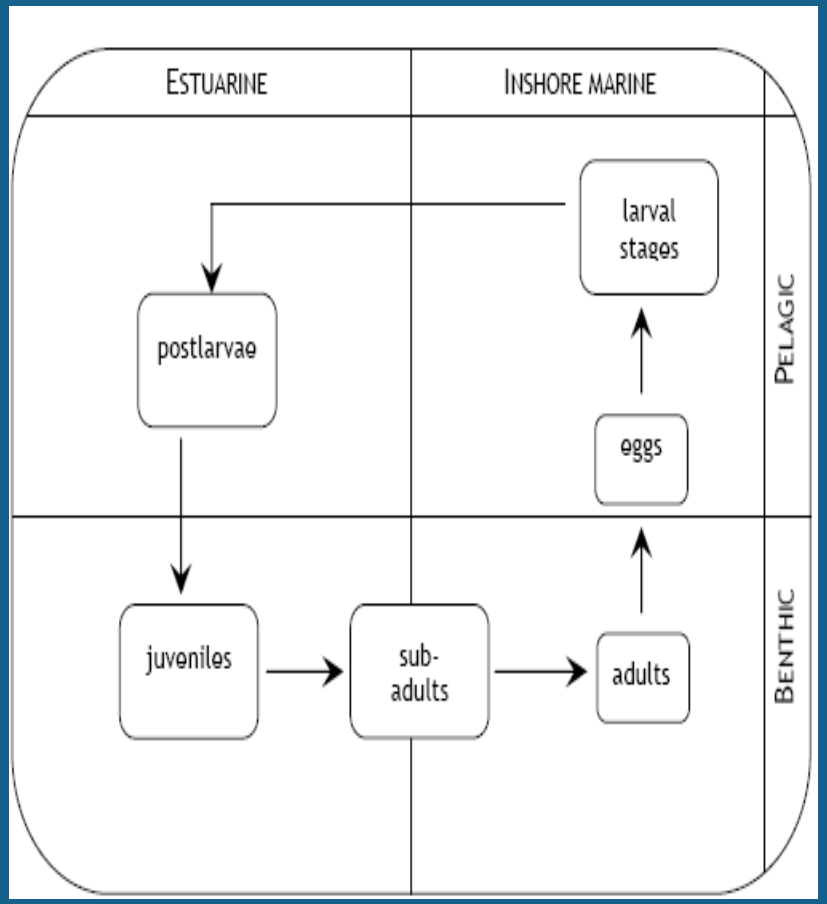
Indicated downward trend in the prawn landings

:*Sanders, 1989, Nhwani et al, 1993, Bwathondi et al 2002, Mwakosya 2004, Mwakosya et al, 2009, MLFD 2012.*

INTRODUCTION

Prawns life cycle



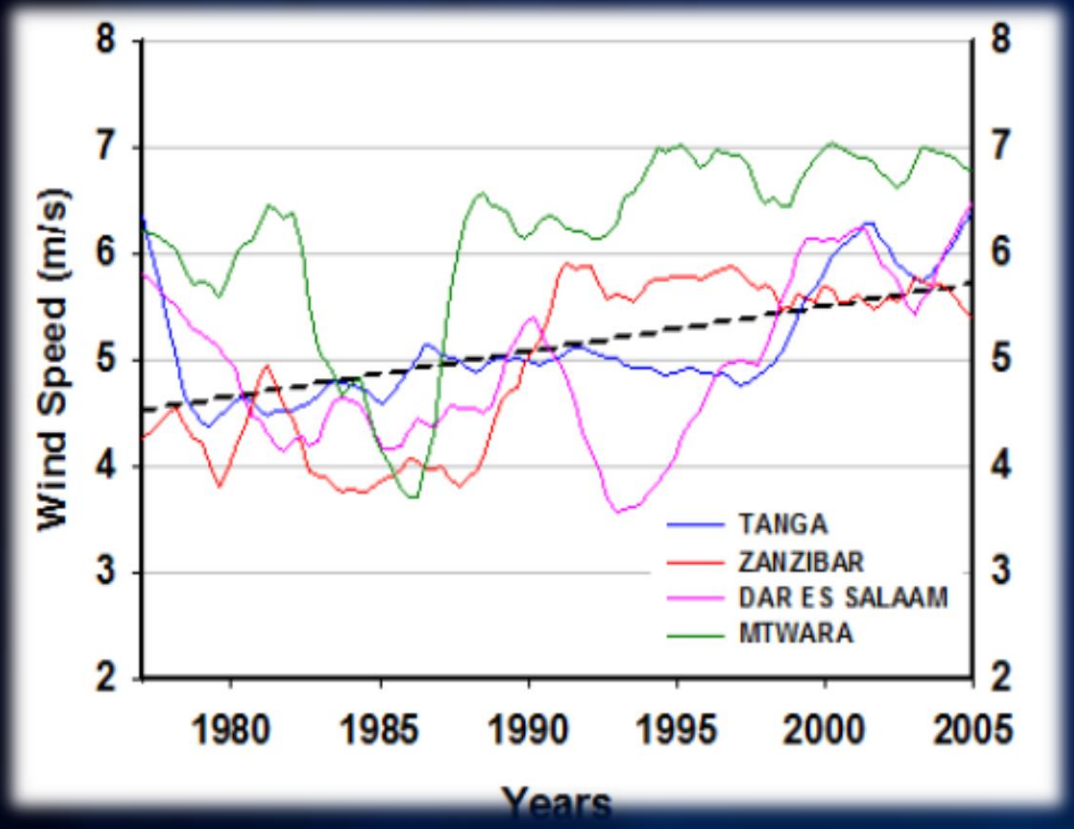


Prawn are caught when they move from their nursery ground to oceanic waters

Taikwa and Mgaya 2004

Prawns spawning

Climate change

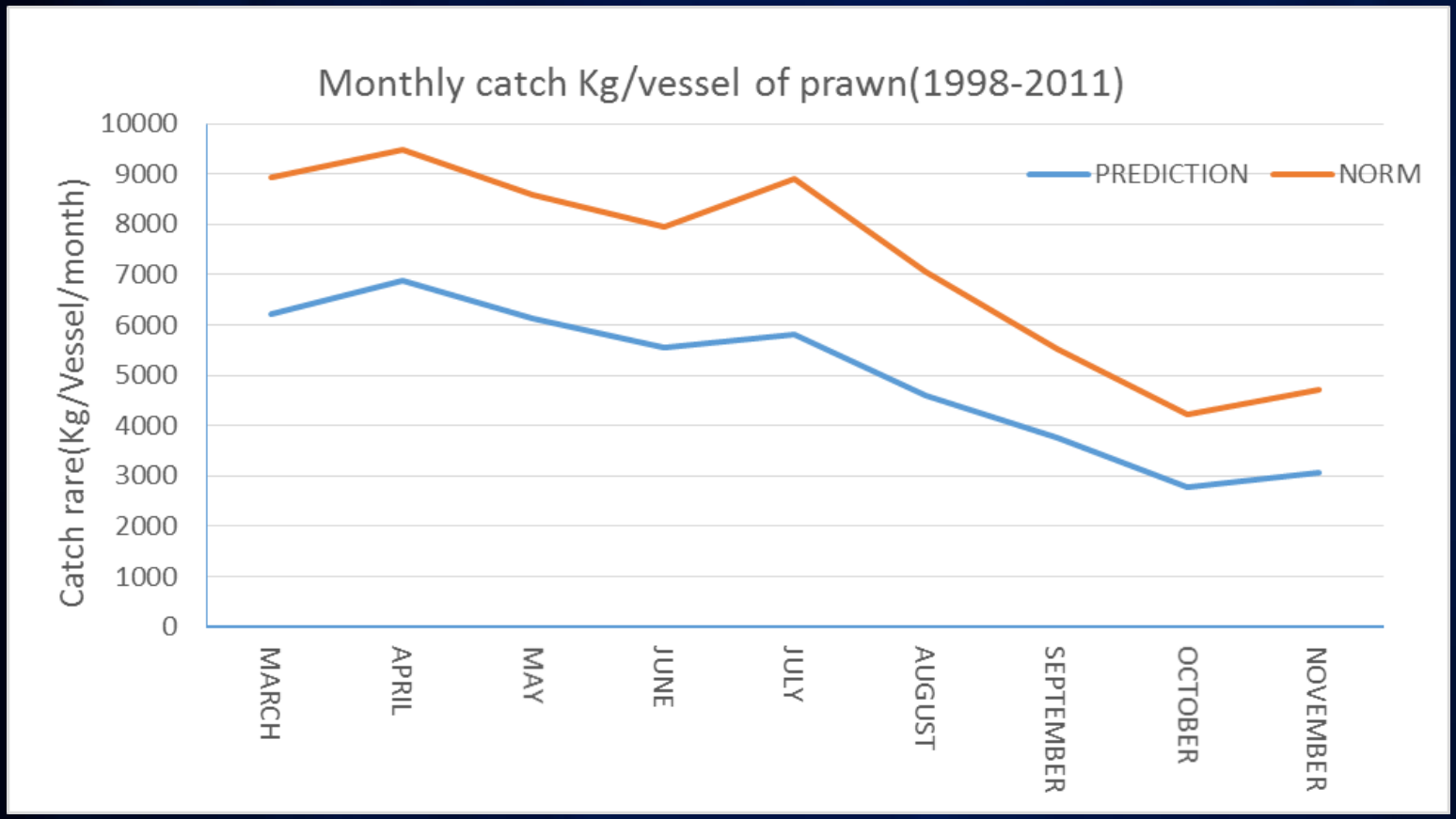


1985-2004 trends in Sea level influenced by SST, NE and SE

Mahongo and Francis 2012

INTRODUCTION

Recruitment



Standardised monthly CPUE higher recruitment peak seaon for is between April and July,

Prawns spawning

Management measures (1998-2007)

The fisheries authorities developed several regulations, such as

- zoning and rotation of fishing vessel on fishing grounds;
- Vessel observers;
- Restricting fishing time;
- Closed fishing season and area;
- Mesh size regulation
- Restriction on vessel capacity;
- Fishing licence and registration fees;
- Log book fishing information;
- Stock assessment;
- Prawn management plan

Experience from WIO regoion

Kenya, Tanzania, Madagascar, Mozambique and South Africa (FAO 2013) revealed that their prawn stock is either collapsed or are in a severely distressed state.

Due to a combination of negative environmental effects on recruitment, and high levels of industrial and artisanal fishing effort.

INTODUCTION

Experience with other similar

collapsed shrimp fisheries,

India, China, USA
Arabian Gulf, Australia

once the shrimp stock level is reduced to a low level,

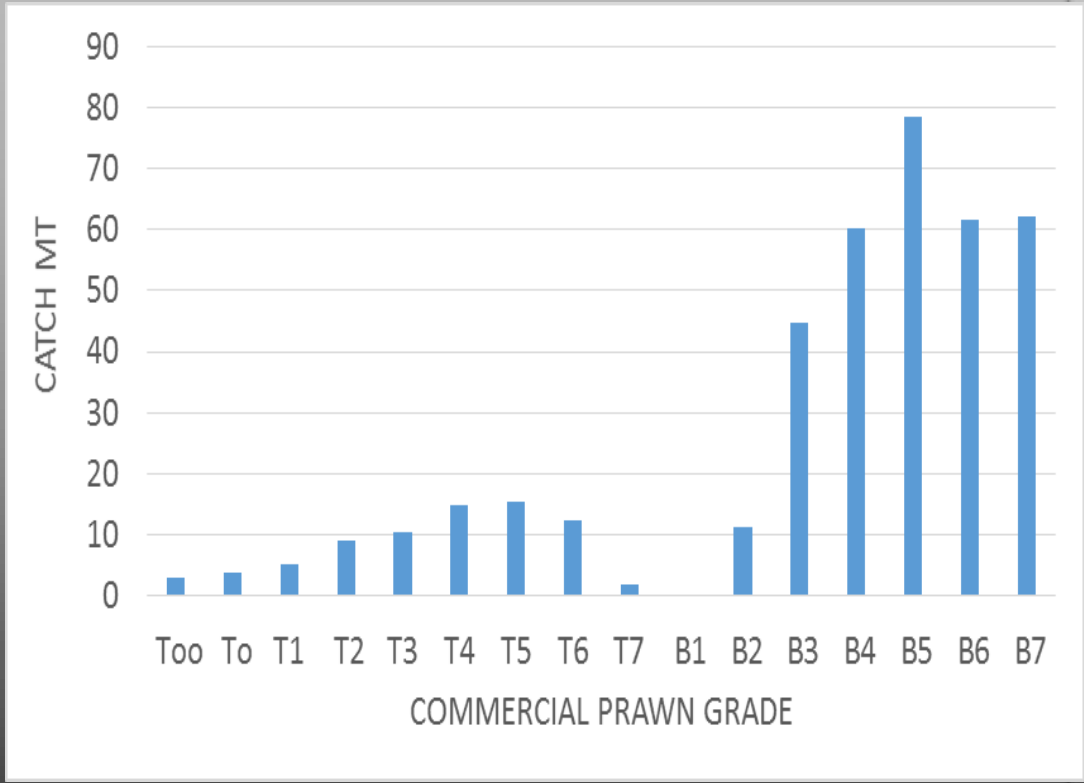
very little fishing is required to keep the stock at that new low level.

Reassessment of commercial prawn data

A desk top study to assessment of the dynamics of the shallow water prawn fishery in Tanzania is based on commercial logbook information data base (1988-2011; 1070 trawls) from Fisheries division.

MATERIAL AND METHODS

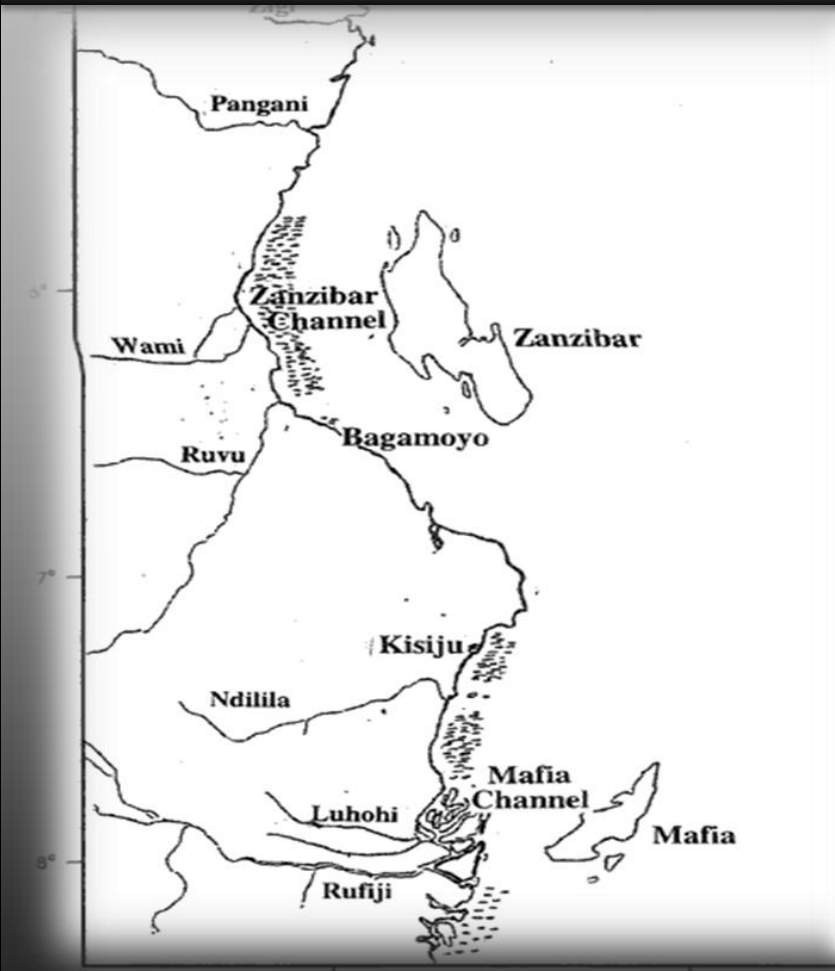
Data collection

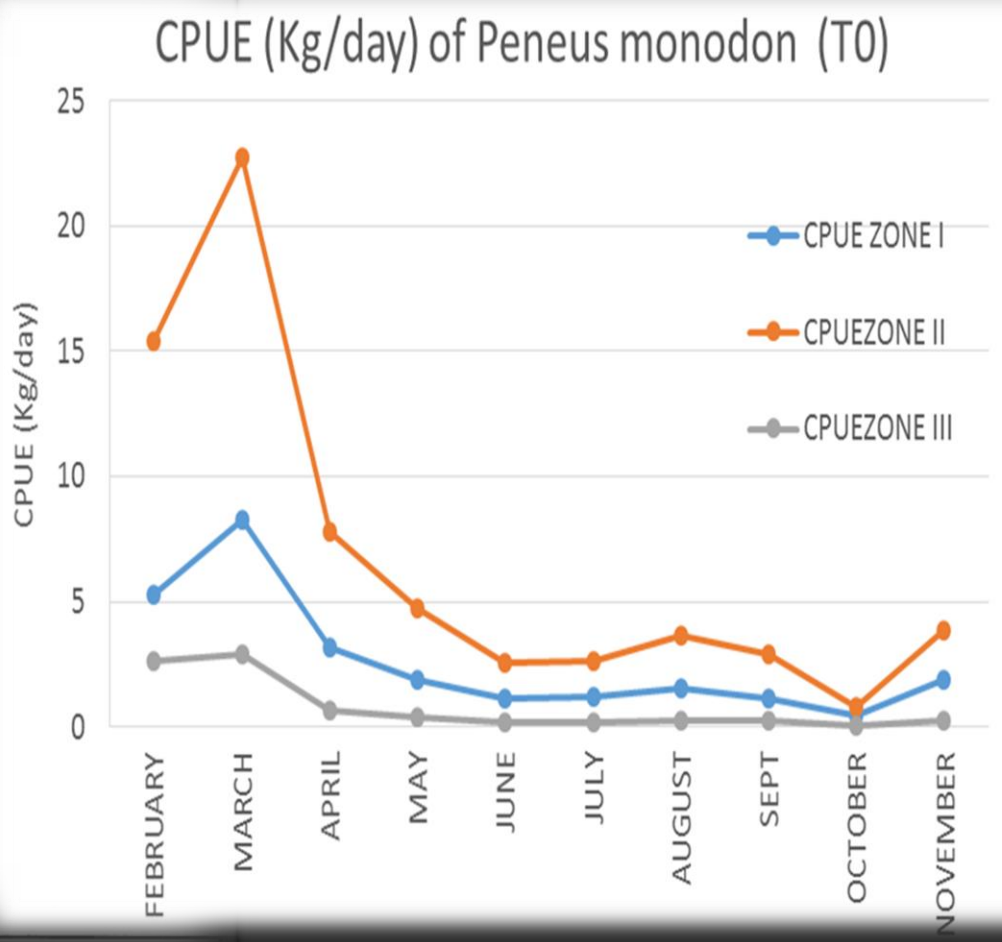


Commercial grade (i.e., size/number of peace per kilogram) for giant black prawns (Too…T7) white prawns (B1…B7)

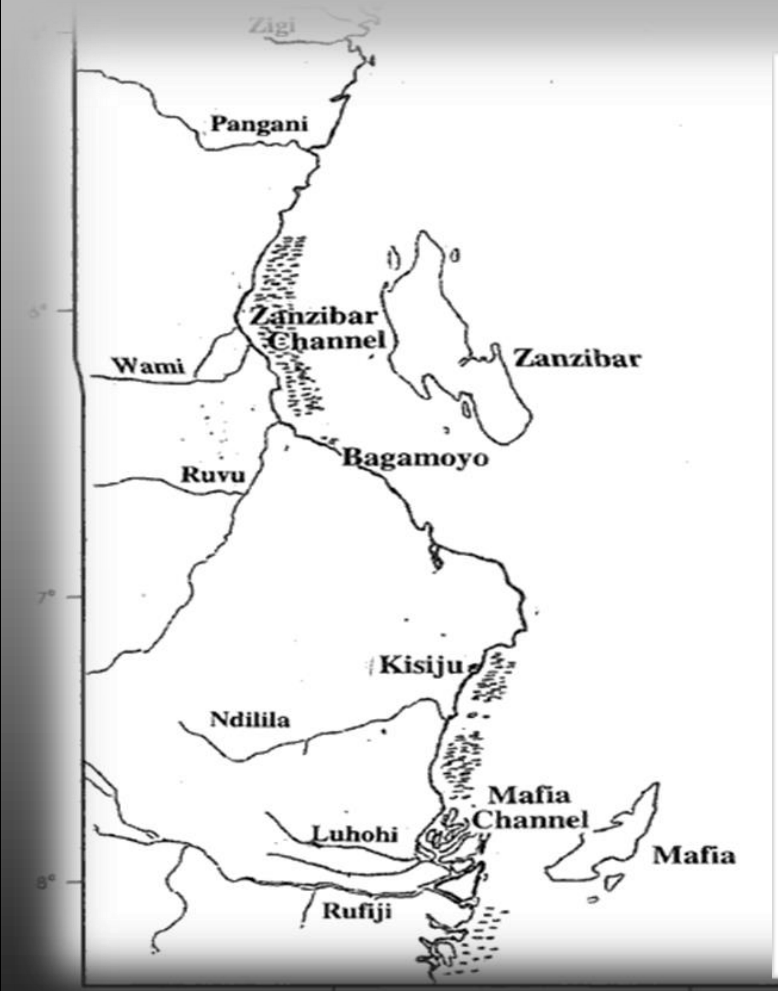
RESULTS

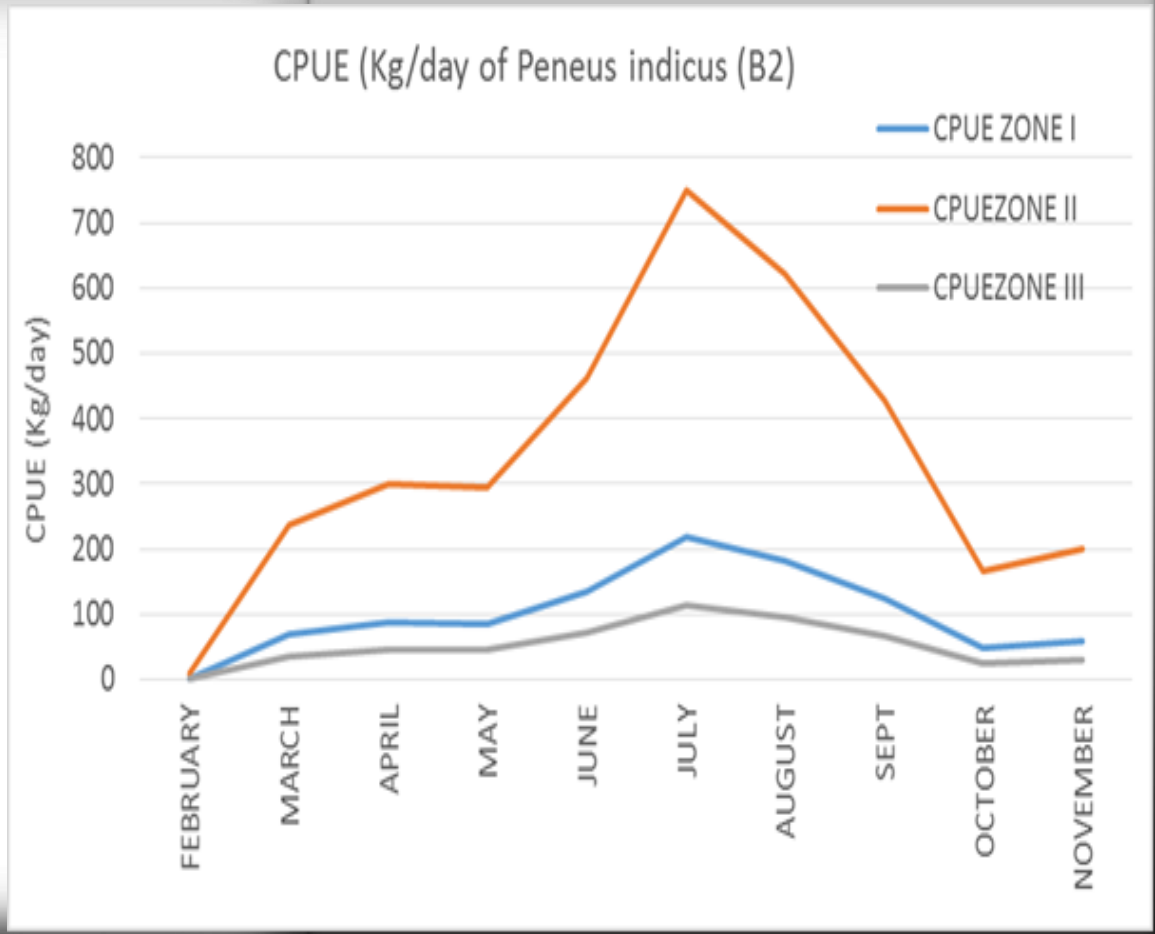
Results & discussion





Results & discussion





Pelagic fishery

ARTISANAL FISHERIES

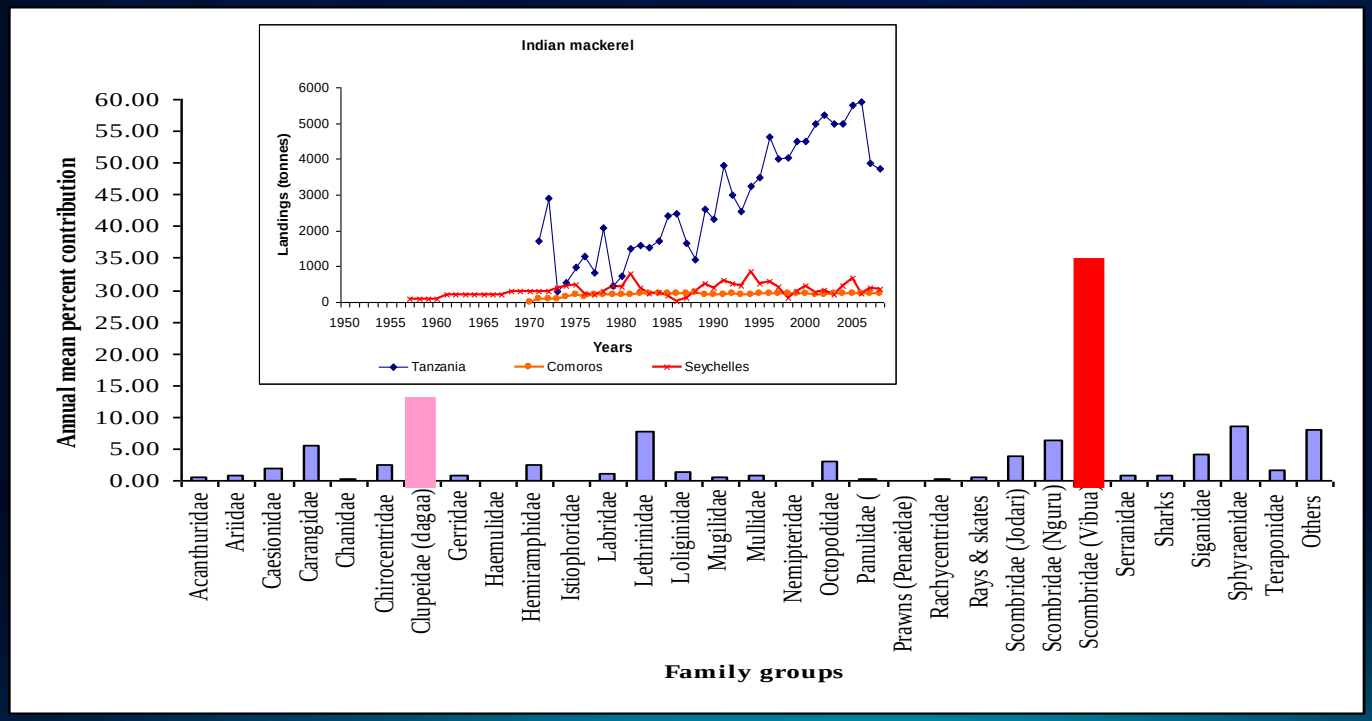
- Contribute about 90% of the total catch.
- Catch: mainly composed of demersal species and small pelagics

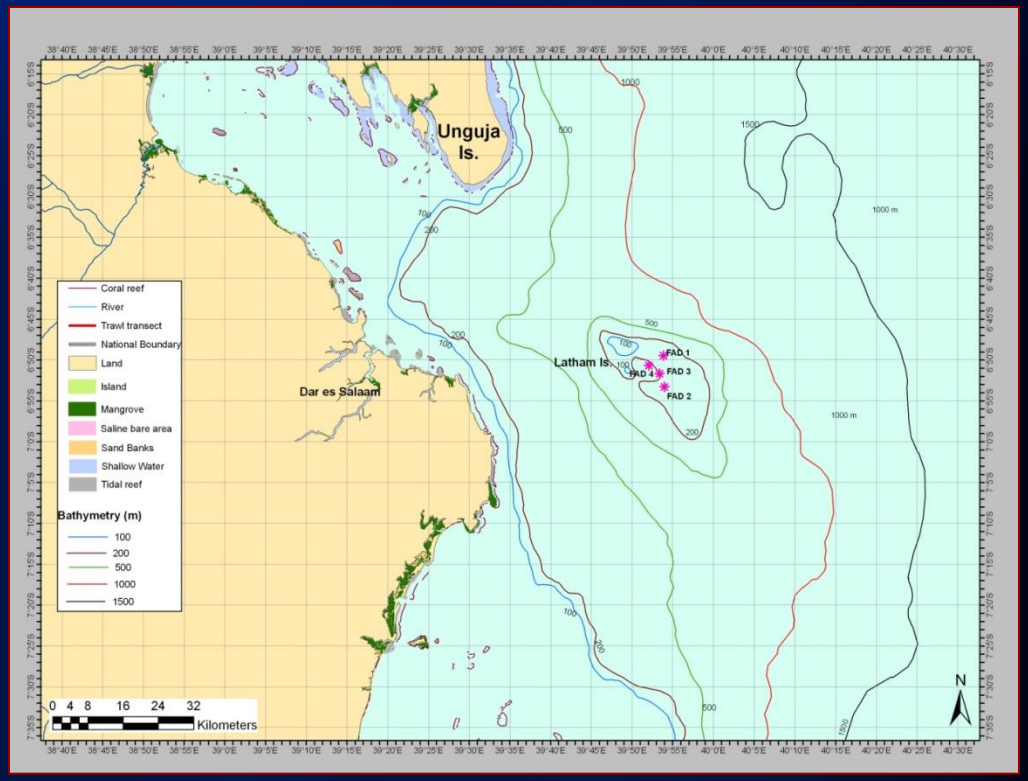
Introduction

ARTISANAL FISHERIES

India Markerel

- Pelagic fish represent 56% of the total catch.

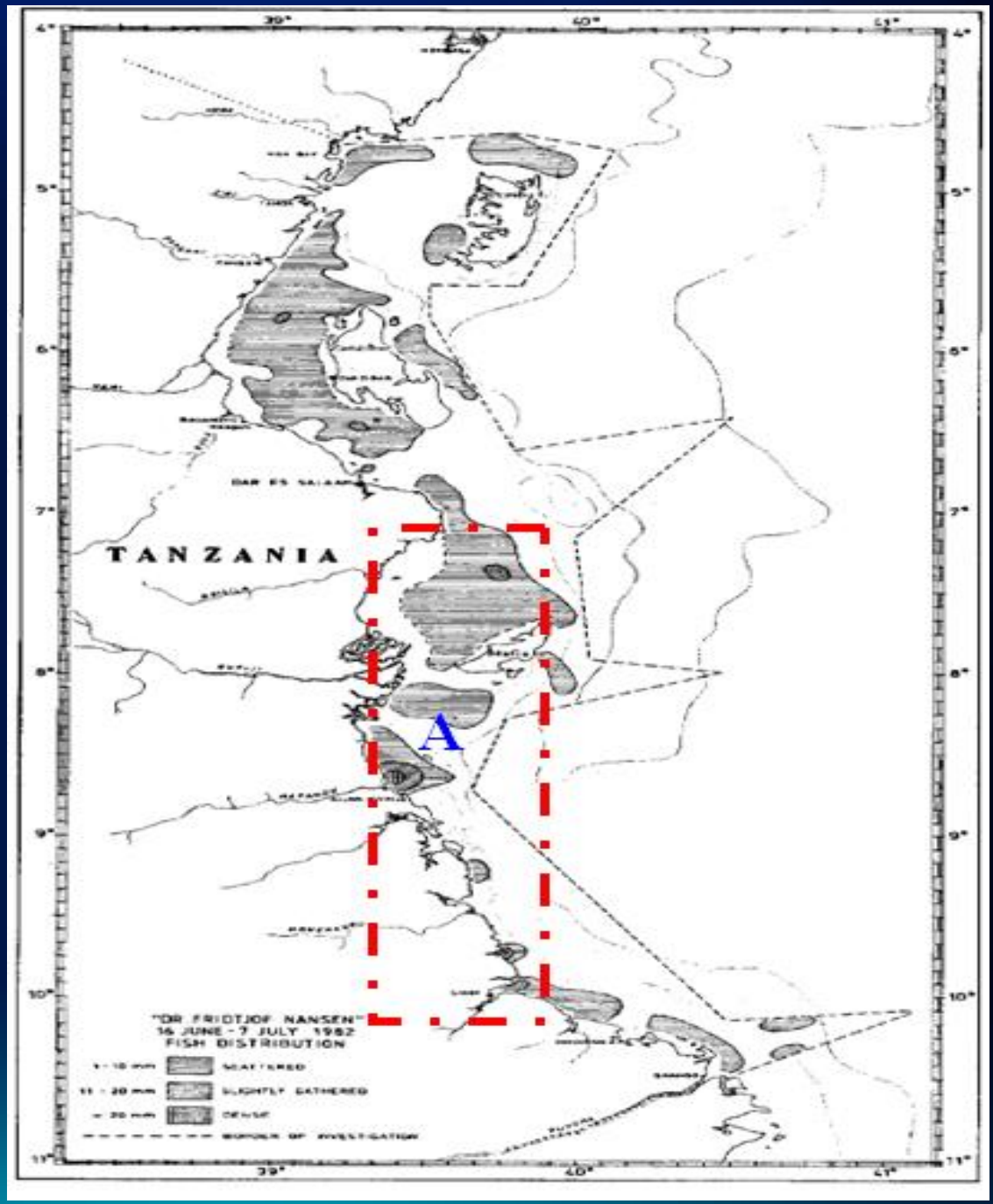



Unguja Is.
Latham Is.
Dar es Salaam
FAD 1
FAD 2
FAD 3
FAD 4
Coral reef
River
Trawl transect
National Boundary
Land
Island
Mangrove
Saline bare area
Sand Banks
Shallow Water
Tidal reef
Bathymetry (m)
100
200
500
1000
1500
0 4 8 16 24 32
Kilometers
N

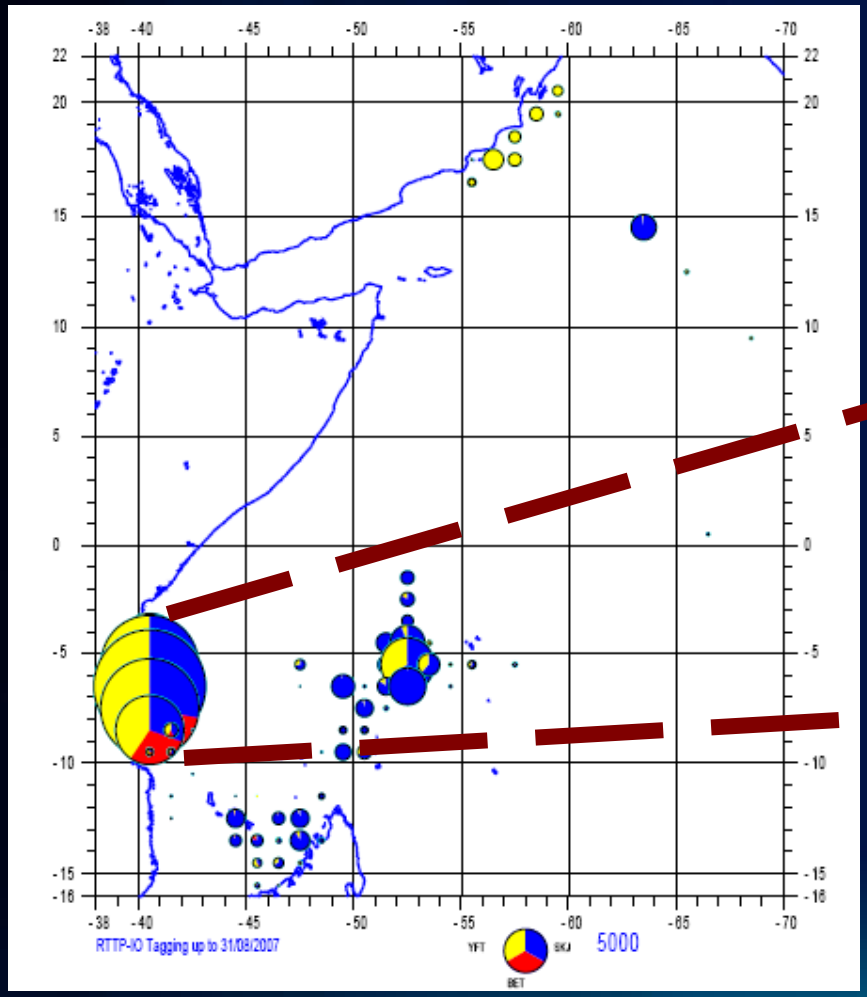

MAFUNZO
MBEGANI

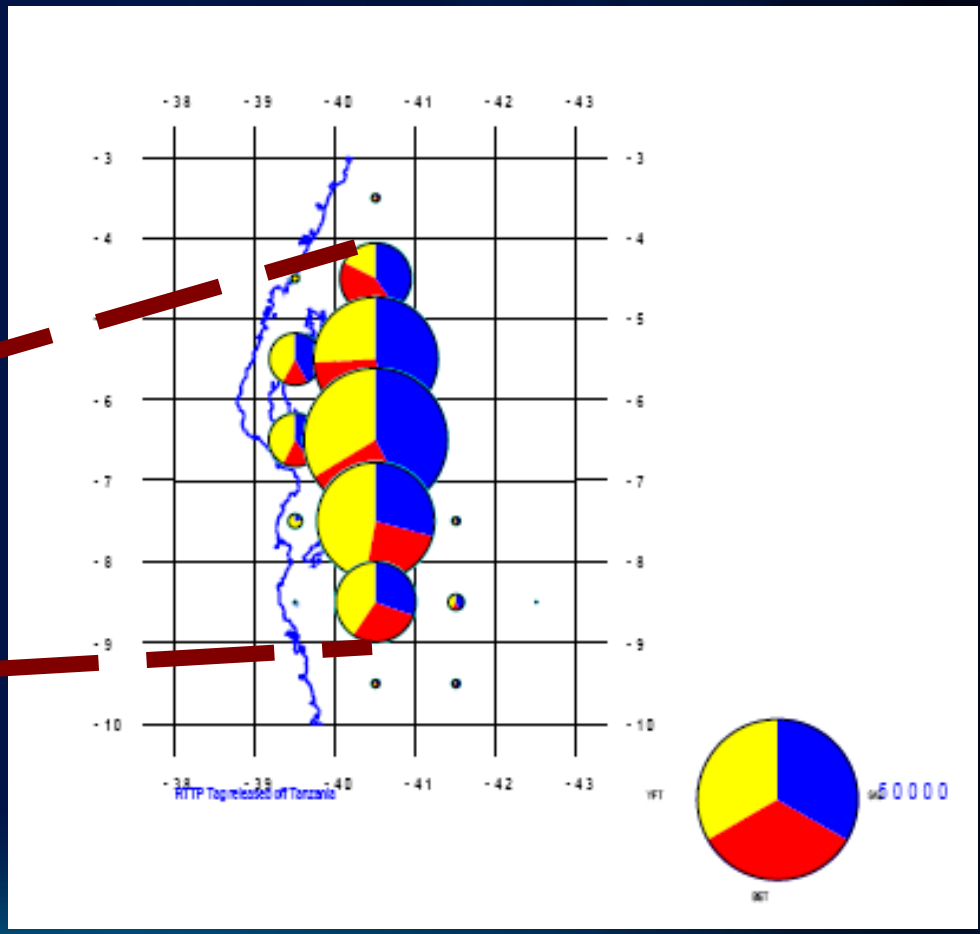
Fishing Area

Historical data on abundance and distribution from (**Fridtjof Nansen**) and **CAS** records (2002 – 2010).



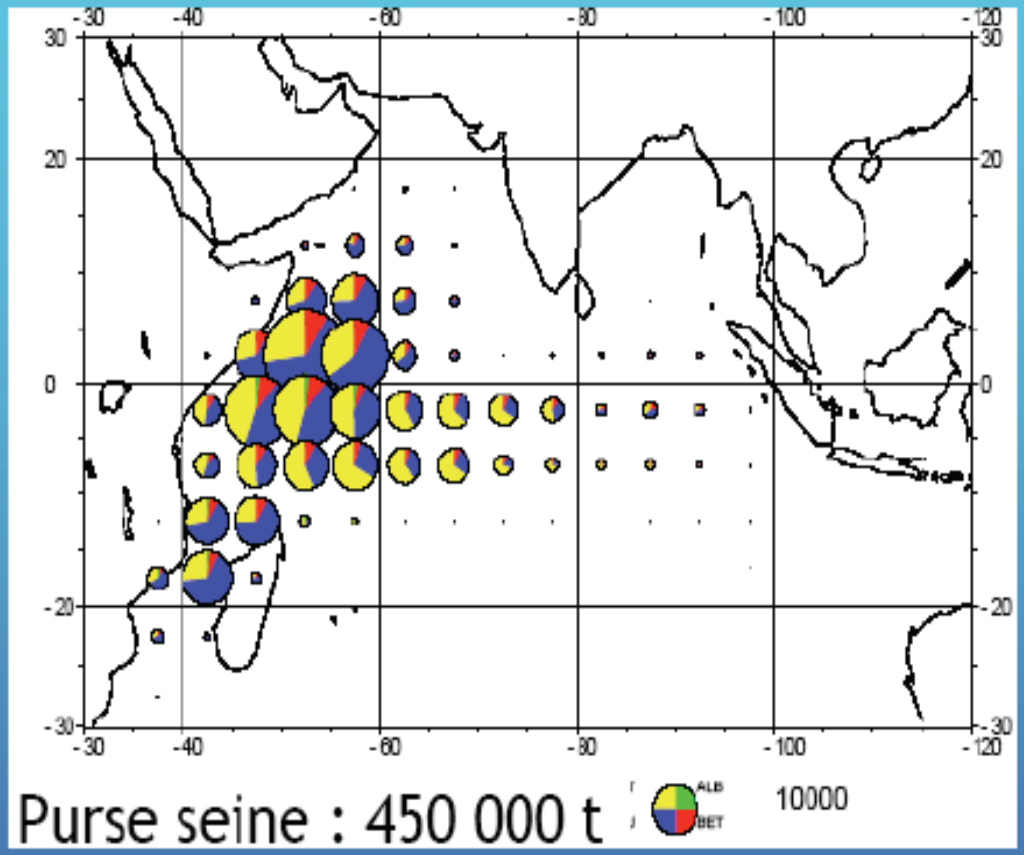
Off shore Tagging

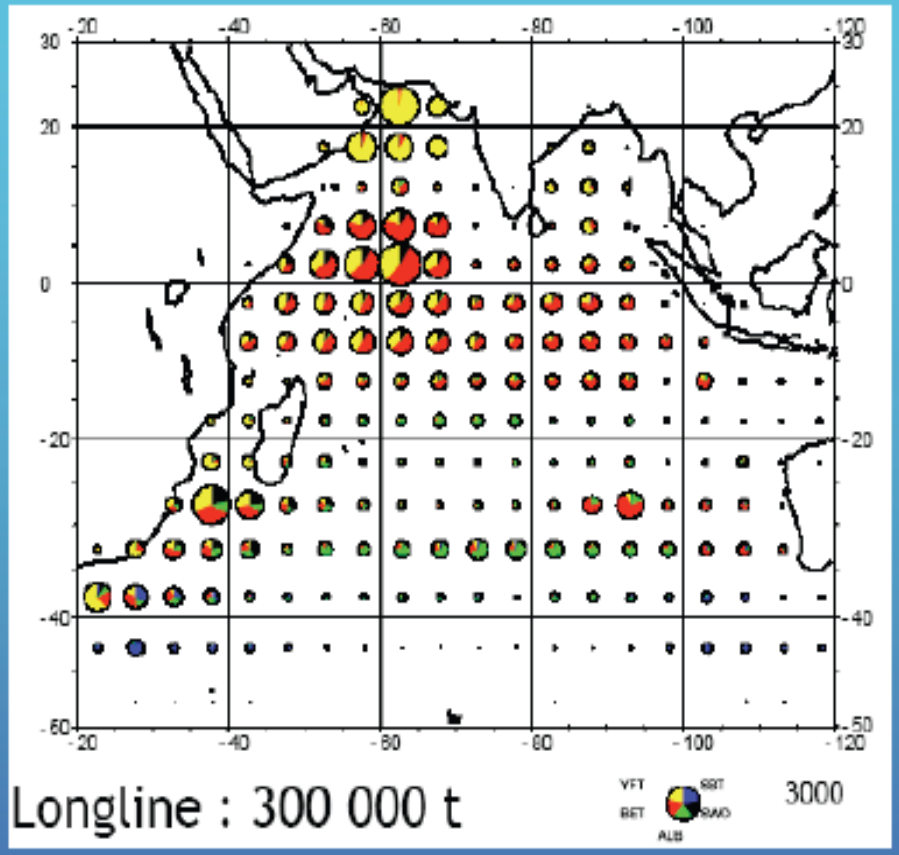




EEZ

Main fishing activity in the WIO





Annual catches of tuna by purse seiners and longliners in the Indian Ocean (from IOTC)

Conclusion

What would we like to achieve in terms of management advice.

- Rebuilding prawn stocks with a view to contributing to socio-economic stability of coastal communities in the long term in the WIO region through reassessment of the retrospective data

- Sustainable exploitation of pelagic species in territorial and EEZ with a view to contributing to socio-economic of coastal communities and National economy

Thank you for listening