

IOC-UNESCO Regional Training Centre for the OceanTeacher Global Academy

International Workshop on Sustainable Use of Coastal
and Marine Resources in Kenya: From Research to
Societal Benefits, 27-29 Oct 2014, Mombasa, Kenya

By: Harrison Ong'anda
Senior Research Officer, KMFRI

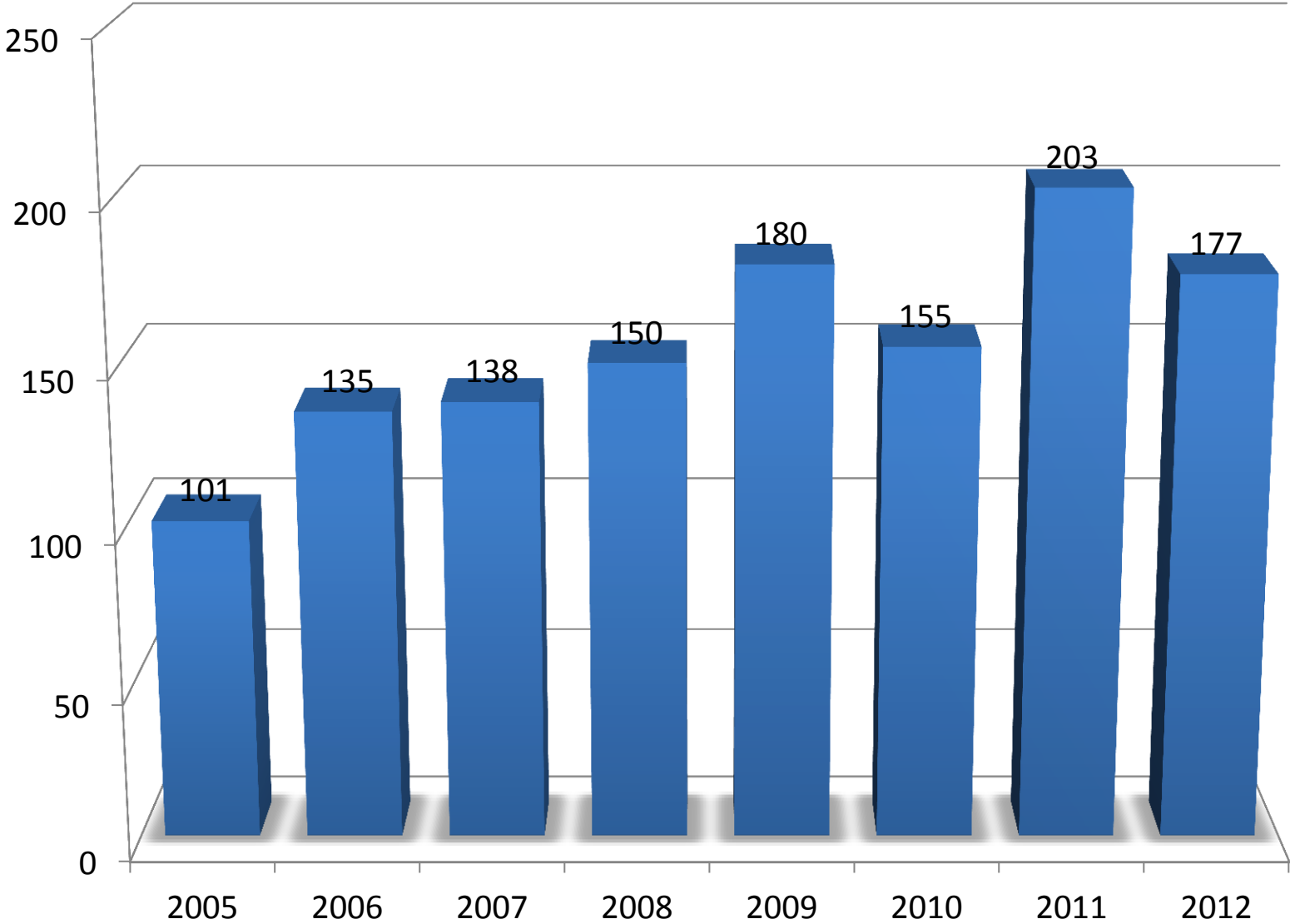
PERSPECTIVE

- KMFRI is the pioneer marine research institution in the WIO on information exchange:
 - Kenya Belgium Project (KBP) – KMFRI hosted RECOSCIX – WIO – the Regional Cooperation in Scientific Information Exchange – 1989 - 1996
 - IOC-UNESCO – Ocean Data & Information Exchange (ODINEA) – 1997-1999
- Demonstrates that we promote the ideals of information exchange within the marine science community
- Kenya now has full status National Oceanographic Data Center – KeNODC within the framework of IOC-UNESCO International Oceanographic and Data Information Exchange (IODE) program

INTRODUCTION

- IOC Project Office for IODE was established in in April 2005 in Oostende (Belgium)
- This made it possible for IODE, for the first time, to organize a sustained training programme for both data and information management
- IODE training courses used to be organized on a purely *ad hoc* basis
- Contributions from Government of Belgium
 - 200K€/year direct support through VLIZ
 - Same amount through the FUST project “OceanTeacher Academy”,

IODE trainees



- Through the “OceanTeacher Academy”, the project Office has been able to organize about 8 courses/year
 - basic courses aimed at start-up data centres and marine libraries,
 - advanced courses for established centres
 - specialized courses (eg on Atlas development)
 - This has resulted in increased capacity in most developing regions.

CLIMATOLOGY OF THE WESTERN INDIAN OCEAN (WIO) REGION- ARE THERE DISTINCTIVE FEATURES?

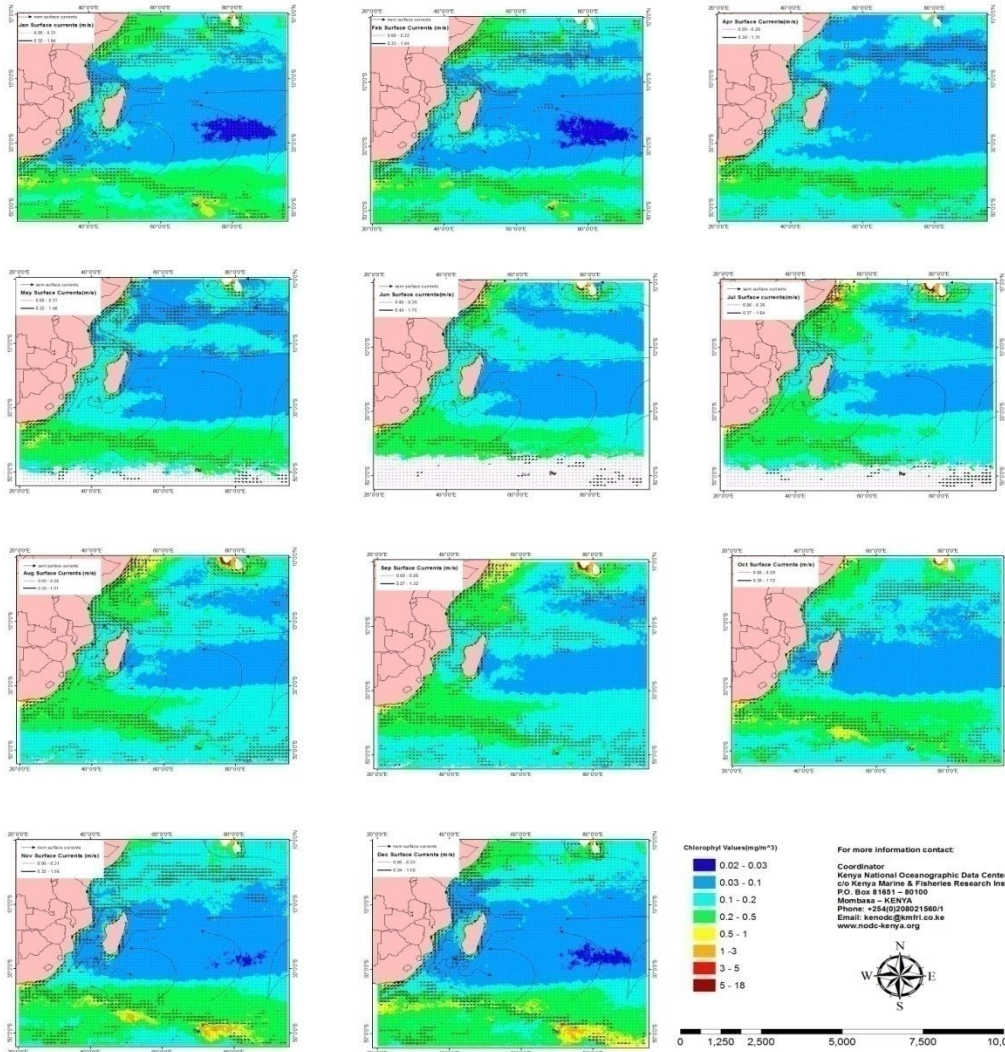


SURFACE CURRENTS AND CHLOROPHYL-A CONCENTRATION



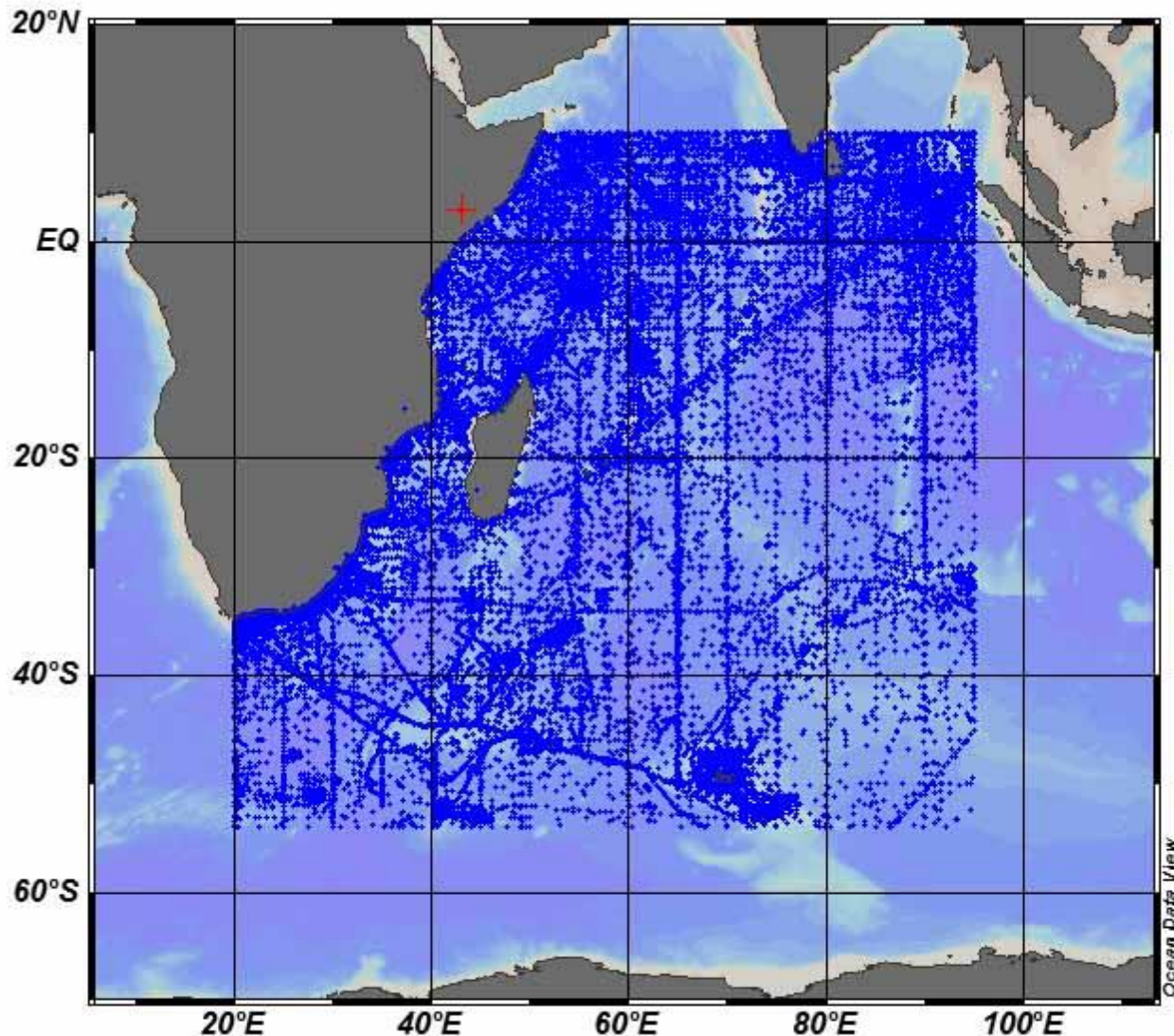
The charts below present an overview of two oceanic parameters - Chlorophyll-a concentration and surface currents. The values are monthly averages over a number of years. This differs from the climatology of mean surface currents, but has been derived from satellite tracked IOP (Pilot Ocean Surface Velocity) Program drifting buoys to provide observations of mean surface circulation up to 15 meters deep. This is a one degree spatial resolution satellite observation. Chlorophyll concentration is derived from the imagery from MODIS (Moderate Resolution Imaging Spectroradiometer) instruments on the global ocean color data (WOC) project. The WOC is a satellite chlorophyll observation which gives insight into the health of phytoplankton in the ocean to help determine the cause of phytoplankton bloom collapse and help to make more robust estimates of primary production. The data products shown are for chlorophyll-a levels of the western equatorial current, around the South East Monsoon (Jan - Aug) and South East Monsoon (Sep - Dec) and South East Monsoon (Jan - Aug) and other oceanic water circulations. The data has been processed by IODF conversion to a 0.5 degree grid and is arranged by SAGA GIS software - map layout implemented in ArcGIS.

Ashraf Edigaranzi, Harshini Ong'anda, Megan Khumri, Faith Ombati, Mwanza Ogutu, Faith Ruvira & Azeemah Nyakira



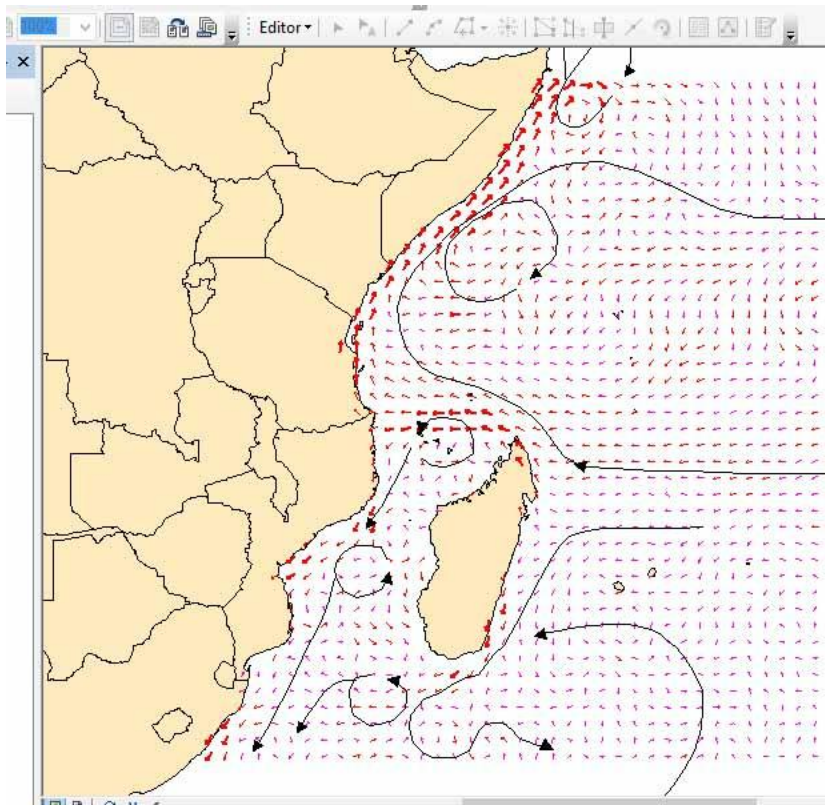
Product of Africa Coastal and Marine Atlas. For more

<http://www.africanmarineatlas.org/>

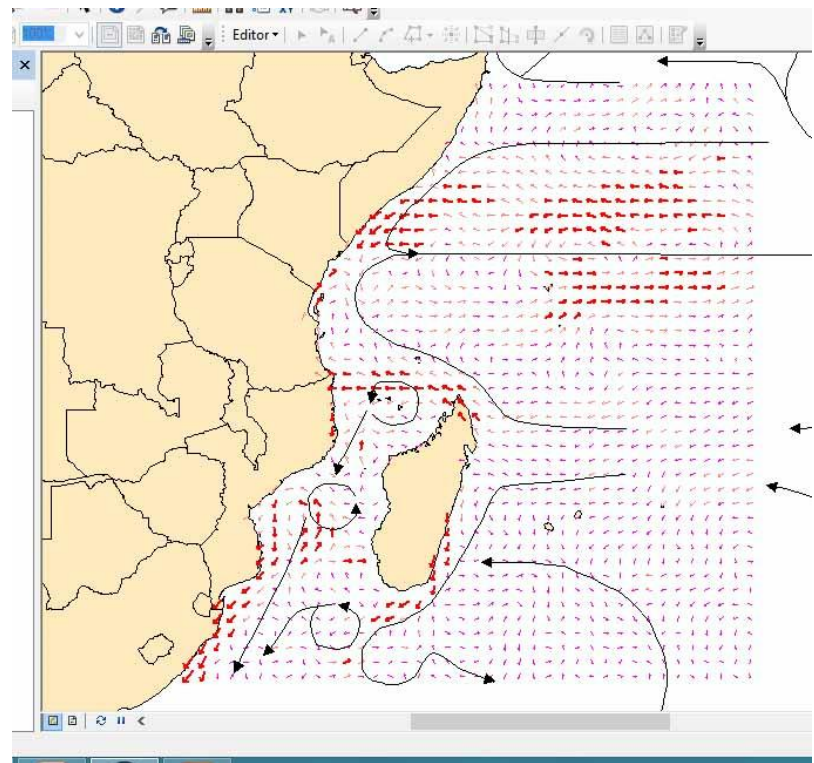


Argo stations in the IO Basin

Argo is an international collaborative ocean-observing program of over [3,500 drifting floats](#) that gather approximately 120,000 temperature, salinity and depth profiles throughout the world's oceans every year.



SE Monsoon



NE Monsoon

Data Source: The GDP Drifter Data Assembly Center (DAC) of the US-NOAA

Part of [NOAA's Global Ocean Observing System \(GOOS\)](#) and a scientific project of the [Data Buoy Cooperation Panel \(DBCP\)](#)

KMFRI Digital Library: Bro x

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Title	Type	Issue Date
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The body composition of low value fish and their preparation into a higher value snack food <i>Kazungu, J.M.; Odote, P.M.O.</i>	Journal Contribution	2008
Buy Ship for Research, Urge Experts <i>Kazungu, J.M.; Daily Nation, Wenesday, September, 2012</i>	Other	2012
Carbon outwelling from a mangrove forest with adjacent seagrass beds and coral reefs (Gazi Bay, Kenya) <i>Slim, F.J.; Hemminga, M.A.; Kazungu, J.M.; Ganssen, G.M.</i>	Journal Contribution	1994

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Agri-Oceans Dspace portal – available through www.kmfri.co.ke

- However, due to the limited budget, only 1-2 students per country can be invited to attend each course, which does not ensure the desired long-term impact
- The need for continued and updated training still holds
 - namely in order to cope with the pace of new science and technological developments
 - the multidisciplinary character of ocean sciences brings the demand for continuous training to a higher level

OceanTeacher Global Classroom

- To address challenges of the OTA
 - Due to the limited budget, only 1-2 students per country per course
 - Travel time is excessive for some regions
- To be addressed through a combination of
 - regional training centres and
 - video streaming technology (distance/remote training).

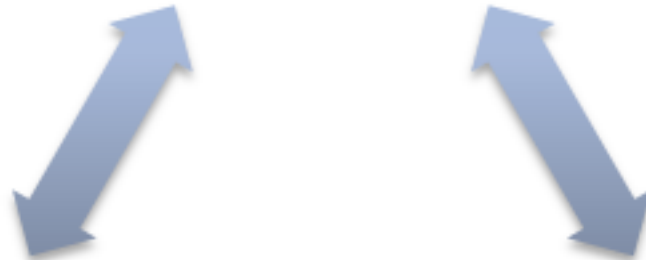
Regional Training Center

- Regional training centre in Kenya
 - Represent the ODINAFRICA region
 - Mainly target – but not exclusively – the students, professionals and decision makers from the region
 - Make use of the established OceanTeacher learning system platform for content management and joint organisation of training events, exchange of lectures, etc.
 - (<http://marinedataliteracy.org/>)

RTC –Mode of Operation

- Classes can be held using direct teacher-to-student communications within reasonable time-zone bands
 - attention must be paid to the several different time zones involved
- Combine direct teaching with partially recorded sessions
- Completely recorded training workshops may be considered

Training Centre A
[Lecturer +
Classroom]



Training Centre B
[Training Assistant +
Classroom]



Training Centre C
[Training Assistant +
Classroom]

Distance/Remote training

- In recent years video conferencing technology has developed remarkably
- Top Universities have also joined the trend and provide online courses
- Limiting factors are slowly being solved with web-based videoconference applications (e.g. Webex)
- Manage lectures and content for live or on-demand viewing and for different audiences

Format for courses

- Online teaching complemented by training sessions in the classroom and
- Distance Learning, consisting of exclusively remote contacts amongst teacher(s) and students.

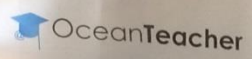
Course contents

- Courses offered will span a wide range of ocean-related topics
- Courses will include lectures and demos (live or pre-recorded and made available online)
- Courses may span one week to several weeks (e.g. up to 4 to 8 weeks long).

Test course

- One 'test' course was organised in Mombasa
 - OceanTeacher Academy Training Course in Digital Asset Management 30 September – 4 October 2013
 - In this training, KMFRI succeeded in leveraging the course through video-conferencing with lecturers in Malta and South Carolina (USA)
 - Competency of KMFRI staff was up-to-date

COURSE - 'DIGITAL ASSET MANAGEMENT' 30TH SEP - 4TH OCT 2013
ON 'MARINE INFORMATION MANAGEMENT AND WEBSITE DEVELOPMENT'
7TH OCT - 11TH OCT 2013 - MOMBASA, KENYA





Requirements

- To avoid major technical problems the following basic requirements must be met
 - Good and reliable high speed Internet connection
 - Classroom with PCs for training***;
 - Video screens and sound system;
 - Video conferencing system ;
 - Firewall with open ports;
 - A video point-to-point call;
 - An audio point-to-point call
 - Personnel (Lecturer, Assistant Lecturer, Technical Assistants, IT)



Way forward

- review of courses planned by the training centre
- to review and agree on the project work plan for 2015
- training of Principal Lecturers, Teaching Assistants and Technical support assistants
- expand training platform to any other ocean/coast related discipline within the scope of IOC-UNESCO





**HAJI SAMAKI KWA
UUVU ZA JUA**

MFUMO WA UKAUSHAJI SAMAKI KWA KUTUMIA KUNI

By
Peter Michael Odour Ombia
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pombia@kshn.net



Samaki wakulima
chombo cha au...

Ukashaji...

**IMPROVED TRADITIONALLY
FISHED PRODUCTS**

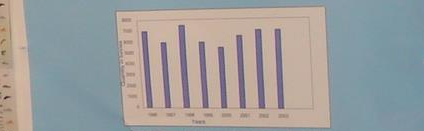


- Traditional fish smoking methods**
 - 1. Fish is cleaned and gutted
 - 2. Fish is washed with clean water
 - 3. Fish is salted
 - 4. Fish is sun-dried
 - 5. Fish is packed in airtight containers
 - 6. Fish is stored in a cool, dry place
- Improved fish smoking methods**
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MARINE FISH PRODUCTION



Marine artisanal fishers: Over 10,150.
Vessels: Dhows, outrigger canoes, plankton boats
Gears: Gill-nets, hand-lines, beach seines and traditional traps

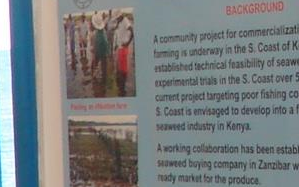


Marine fisheries contribute over 7,000 tonnes (projected to 16,000 tonnes p.a)
95% catch is artisanal



Ex-vessel value Ksh 0.84 billion.
Market value per year approximately Ksh 2.8 billion.

**SEAWEED FARMING: A COMMUNITY
ALIEVATION AND NATION**



A community project for commercialization...
A working collaboration has been established...

APPROACH
3 communities (Kibuyuni, Mkwiro and...)
employing 3 methods: off-bottom, net...
has been established in Kibuyuni with...
involvement of the community. Seaweed...
are part-time, carried out only during...
18 days in a month.



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THANK YOU FOR LISTENING