Nigeria

Progress Report to the Project Coordinator

EP/GLO/201/GEF

2005

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

EP/210/GLO/GEF – Nigeria.

REDUCTION OF ENVIRONMENTAL IMPACT FROM TROPICAL SHRIMP TRAWLING THROUGH THE INTRODUCTION OF BYE-CATCH REDUCTION TECHNOLOGIES AND CHANGE OF MANAGEMENT.

PROGRESS REPORT

FUNDING: GLOBAL ENVIRONMENTAL FACILITY (GEF)

IMPLEMENTING: UNITED NATIONS ENVIRONMENTAL PROGRAMME (UNEP)

EXECUTING: FOOD& AGRICULTURE ORGANISATION (FAO); FEDERAL DEPARTMENT OF FISHERIES (FDF); NIGERIAN INSTITUTE OF OCEANOGRAPHY & MARINE RESEARCH (NIOMR); RELEVANT AGENCY IN CAMEROON.

National Institutions   -   FDF & NIOMR

National Steering Committee -   G.N.Shimang (Director FDF - Chairman)

National Coordinator   -   Mr. J.C. Ogbonna

Consultant (Nigeria)   -   A.A. Aderounmu (FFS)

MCS   -   Mr. A.V. Amire (FDF)

Technology   -   Dr. B.B. Solarin (NIOMR)

Socioeconomics   -   Mr. P. Aboheyere (NIOMR)

Statistics   -   Mr. B.C. Udeh (FDF)
                                  -          Mrs. T.O. Esan (FDF)

EP/201/GLO/GEF – Nigeria: Reducing Environmental Impact from TROPICAL Shrimp Fisheries through the use of By-Catch Reduction Technologies and change in management.

The Nigerian Marine Industrial Fisheries operate about 240 registered fishing/shrimping vessels which exploit the living marine resources of the Nigerian Inshore waters and the EEZ. Some of these vessels are also licensed to fish in the marine waters of other neighbouring countries like Cameroon, Gabon, Equitorial Guinea and Benin Republic – all in the Gulf of Guinea region. All the vessels carry on dermersal trawling for shrimps and fish including crustaceans but a few do paired trawling to harvest the pelagic and midwater species.

The shrimp resources are fairly rich and made up of:-

Panaeus notialis	-	White Shrimp
Panaeus Keraturus	-	Tiger Shrimp
Parapenaropsis Atlantic	-	Brown Shrimp - (carry carry)
Panaeus monodon	-	Giant Tiger Shrimp

The annual harvest of these shrimps yield about 12.500 mt of which about 7,000 mt is exported and yielding $50 million. It is pertinent to note that only 15% of registered fleet are licensed for fishing operations even on that the fishing vessels land significant amount of shrimps are mainly to the use of unregulated nets.

While trawling for shrimps, there are a lot of incidental catches ranging from mature food fish to juveniles of the same variety. Because Nigerian fisheries is multispecies, small sized fish (but adults) of certain species are also caught along with the juveniles of target species of food fish.

The landing of these juveniles has negative effect on recruitment and species diversity and therefore makes shrimp trawling in its current form unsustainable.

In Nigeria, the quantum of discards of immature, undersized fishes is minimal; this so-called trash is bought and processed (smoked) by canoe fishermen with the result that very efficient fish trash markets have developed along the coasts even into the

hinterland. The level of landing of By Catch occasioned by shrimping operations has always remained more of educated guess work in Nigeria. What is very clear is that during trawling canoes surround the fishing trawlers to buy off the unsortable catch, which could be anything from debris, juveniles of large food fish and mature small sized fish.

The purpose of the project is therefore to investigate the level of trash in the overall catch and take appropriate management/regulatory decision that would make shrimp trawling sustainable by using environmentally mitigating technologies.
The project in Nigeria was hinged on three broad components;

1. Data Collection
2. Socioeconomic.
3. Technology

The Federal Department of Fisheries implemented the data collection while NIOMR is carrying on with the other two components.

FDF

The National Co-coordinator of the project is domiciled in the FDF.
The activities under FDF were as follows:

1. Improved routine shore-based collection of fisheries statistics (over an annual cycle).
2. Collection of on-board fisheries statistics over an annual cycle.
3. Conduct at least three Steering Committee Meetings.
4. Initiation of a campaign for wide-spread introduction of use of appropriate BRD.
5. Compilation of existing fisheries regulation plus measures for ongoing MCS of shrimp trawl fisheries.

Workshops/Meetings attended/Organized during the period.

Members of the Project Steering Committee

Fig. 1 Location of estuaries and major coastal settlements with good fishing prospects

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There has been several consultation and workshops;

    a. Scheduled to attend International Project Steering Committee in Guaymas, Mexico September 2002.

    b. Consultation in Rome in December 2002 with Mr. Mann and others

    c. Attended Shrimp Bye-Catch workshop in Mombassa –Kenya – 13th – 15th April 2003.

    d. Steering Committee Meetings: 1st Inauguration and first meeting July, 2003

2nd Meeting 11th – 12th March, 2004

3rd Meeting 11th – 12th August, 2004

Attendance in the meetings was always complete. Fishing Companies and staff of FDF & NIOMR always joined to make the meeting very vibrant. NIOMR provided the facilities for the meeting in terms of meeting hall and public address system.

    e. Workshop in Thailand on JTEDs was attended by two Nigerian candidates i.e. B.B. Solarin and E.E. Ambrose.

    f. Two missions were received during the period

      i. Mr. Broadhurst   - 27th May – 3rd June, 2004

      ii. Thomas Moth-Poulsen   - 4th – 12th Nov. 2004

2. *Collection of shore-based Fisheries Statistics.*

A format for the collection of fish landing data was designed and administered to collect data from fishing/shrimping trawlers.

Information was gathered on 224 vessels.

Result: The result of the activities carried out between August 2003 to July 2004 is as follows;

    a. Size of vessels   -   (24 – 26.6)m LOA

    b. GRT   -   130 - 150

c. Number of fishing days   -   43,621

d. Quantity of fish landed   -   5,700,901.3 kg (5,701 mt.)

e. Quantity of Shrimp landed   -   5,703,032 kg (5,703 mt.)

f. Quantity of Mix   -   11,065,612.5 kg (11,066 mt.)

g. Total Landings   -   22,469,546.25kg (22,470 mt.)

h. Percentage composition of Bye-Catch -   74%

i. Fishing Hours   -   761,192.6 Hrs

j. Catch per fishing day   -   515.11 Kg/Day

k. Catch Per Unit Effort (CPUE)   -   29.52 Kg/Hr.

Fish Landing Data for Shrimp and Bye- Catch for August 2003 to July 2004 (kg)

MONTH	PRAWNS	CROAKER	SOLE	SHARK	RAY	CATFISH	GROUPER
Aug-03	478988	219552	151124	8326	3671	5120	249
Sep-03	459159.2	271925.5	212943	28722	3348	10260	510
Oct-03	385312.4	304324	205086	24496	11246	6544	1413
Nov-03	390855.4	246648	112248	16017	3673	6016	1007
Dec-03	349992	239882.4	157326	16629	2860	10321	875
Jan-04	310929.6	215044.7	106346	5790.5	4439	4140	112
Feb-04	370260.4	196975.5	121582.5	2619	4267	8001	241.5
Mar-04	510019.3	199251.8	117741.5	1986	4516	4980	257.5
Apr-04	512794.4	64113.8	108034.5	6578	26073	22425	557
May-04	545816.5	110756.5	128379	7450.5	1402	3860	1051
Jun-04	525093	170078	132779.5	10832	7195	2489	2364
Jul-04	863812.3	283360.5	236907	3402	9096	4289	5482

TUNA	CRAB	LOBSTER	CUTTLE	MIX I	MIX II	MIX III	MIX IV
1995	48112.4	305	58816	164940	120890	244470	254800
1935	77827.5	514	52734	227688	152672	311379	416164
1740	75142.5	175	38295.6	264427.5	164060	350464	450431
2489	82431	153	28640	167053	86760	218717	303665
142	38852	44	12556.8	182612	72740	229270	271536
160	24093	294	11357	219063	114698	272769	354763
123	52147.5	227	14068.8	162058	72946	235031	324021
178	57130	288	15396.8	184077	67589	261369	404523
730	67480.5	628.5	11017.2	158319	90260	267677.5	394876
3660	41020	153	18099.4	154216	78510	275106	354794
3549	52818	373	21109.9	191703.5	111498	273403.5	360820
4681.5	84304.5	8662	54644.2	223259	116300	318406.5	368818

Shrimp/Fish Landings For Aug. 2003 - Jul. 2004
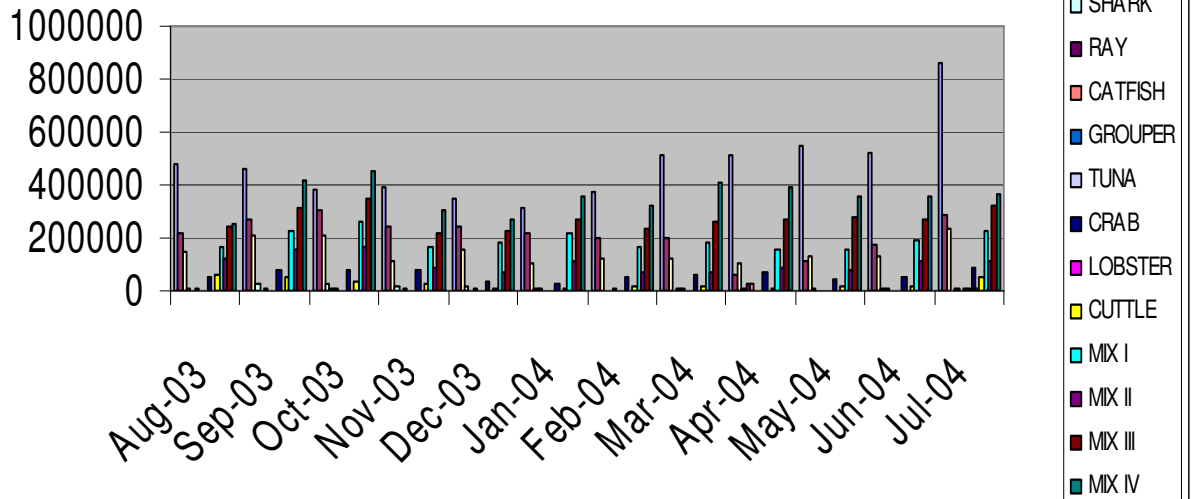
SHRIMP/FISH DATA CHART AUG.2003 - JUL. 2004
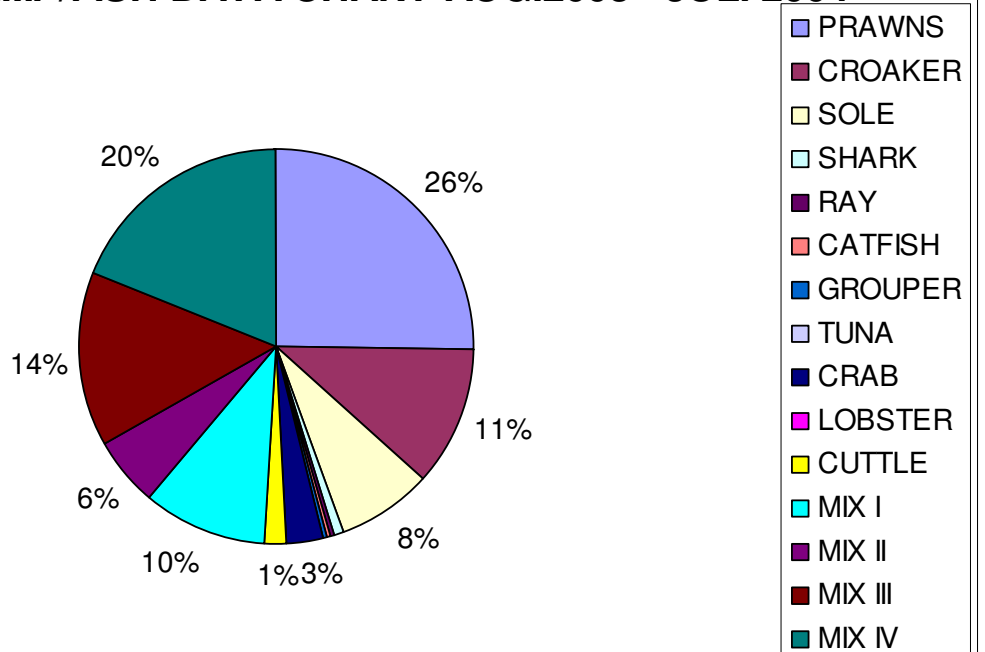
Monthly Total Bye-Catch/Prawn Landings (kg.)

BY-Catch	PRAWNS	MONTH
1,282,370.4	478,988	Aug-03
1,768,622	459,159.2	Sep-03
1,897,844.6	385,312.4	Oct-03
1,275,517	390,855.4	Nov-03
1,235,646.2	349,992	Dec-03
1,333,069.2	310,929.6	Jan-04
1,194,308.8	370,260.4	Feb-04
1,319,283.6	510,019.3	Mar-04
1,218,770	512,794.4	Apr-04
1,178,457.4	545,816.5	May-04
1,341,012.4	525,092.95	Jun-04
1,721,612.2	863,812.3	Jul-04

A very clear pattern of percentage landing showed that lowest catch of shrimp was in December – January – February and catches started to appreciate in March and peaked in July before coming down from September through November. It is yet to be established whether shrimping during the lean months brings the desired economic returns. However when the monthly shrimping landing was plotted, a slightly different pattern was desired i.e. the peak production was in July.

Monthly Catch of Prawns and Bye-Catch for Aug. 2003 - Jul. 2004

Landing Data for Shrimp and Bye-Catch for Aug. 2003 - July 2004.
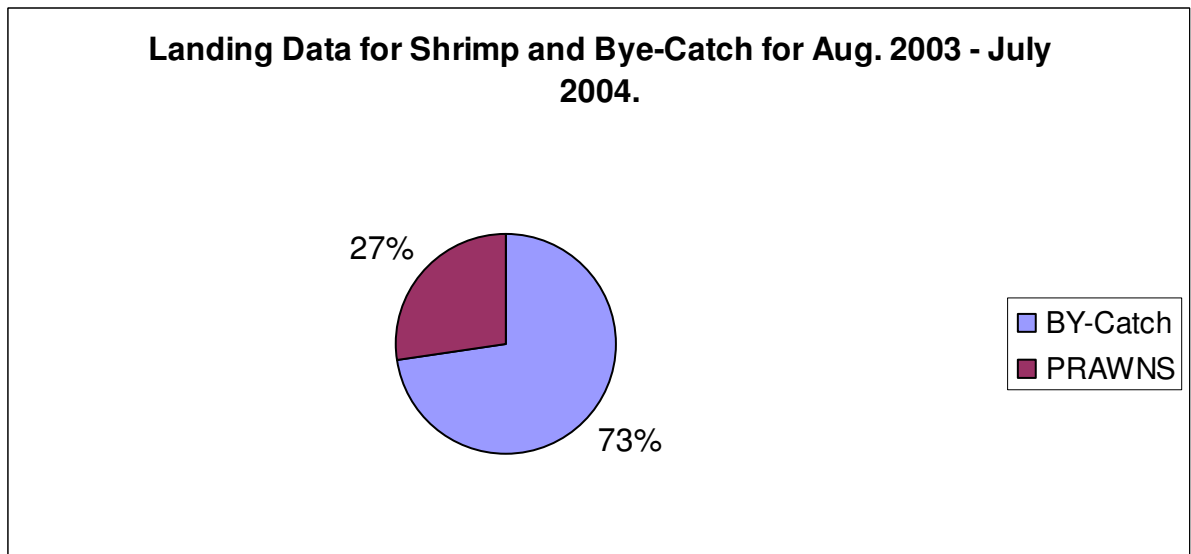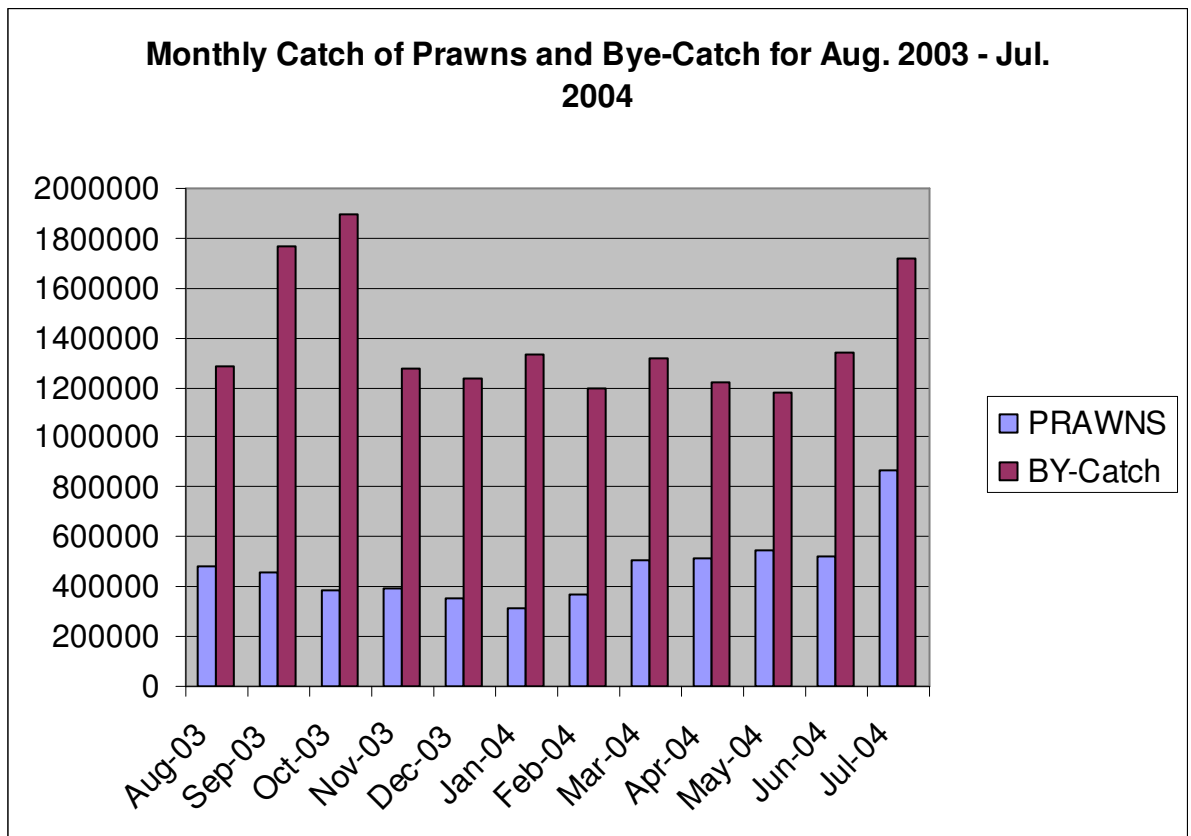
If this data is taken as it is 27% to 73% by volume, the fishers would have fish in line with government fish/shrimp ratio 25/75% provided for as in the regulation. However the issue lies in the composition of the bye-catch which is dominated by juveniles of commercially important species.

3. **ONBOARD DATA COLLECTION**:

Participants in the Data Collection Training.

Training of Data Collectors.

As a prelude to the collection of data on board shrimping vessels, a 5 day training workshop was organized for Data Collectors in order to equip them for on-board data collection. Twenty-two Fisheries Assistants were expected to be trained but forty-nine candidates were issued certificates as follows:-

NIOMR	-	5
FCFMT	-	12
FDF	-	25
Industry	-	7

This was understandable because many of these personnel have not had this type of training for a long time. The training itself emphasized practicals on fish identification, sampling methods, sorting/measurement/recording of fish catch data by Data Collectors on board fishing vessels and general guidelines on board fishing vessels. It is necessary to state right away that the industry had reservations in putting observers on board. This delayed the take-off of the observer programme until January 2004. However from that month on the industry had been a willing partner.

4. **On-Board Data Collection.**

After the training, 22 Data Collectors were deployed to 11 major fishing companies. However, 4 of the candidates declined to participate leaving only 18 Collectors. Furthermore, two other student observers left for school at various times.

The result of the On-Board data collection is as listed below:

a.	Size of vessels	-	(24 – 26.6) m LOA
b.	GRT	-	130 - 150
c.	Number of fishing days	-	2479
d.	Quantity of fish landed	-	1,497,863.51 kg (1,498 mt)
e.	Quantity of Shrimp landed	-	385,883.8 kg (386 mt)
f.	Quantity of Mix	-	702,317 kg (702 mt)
g.	Mix III & IV	-	510,758 kg (510 mt)

h. Total Landings   -   1,883,747.31 kg (1,884 mt)

i. Percentage composition of Bye-Catch   -   80%

j. Fishing Hours   -   40,609 Hrs

k. Catch per fishing day   -   759.88 Kg/day

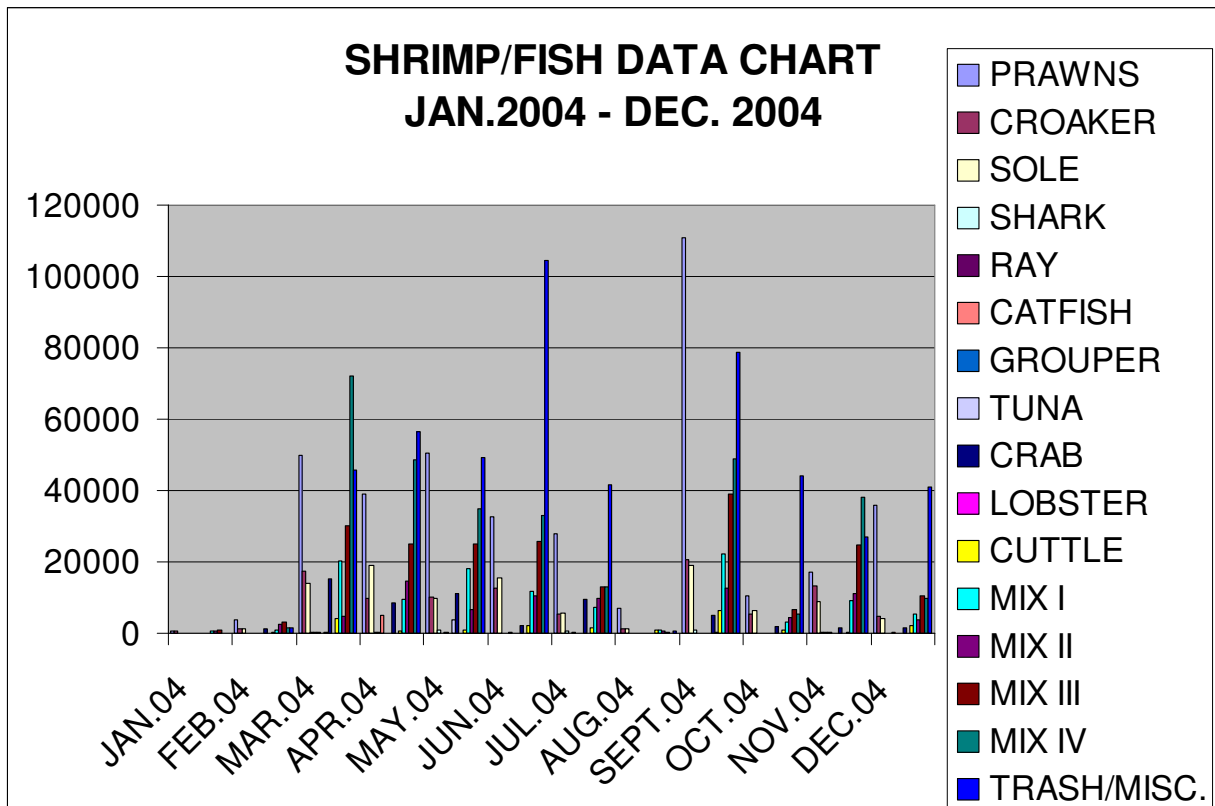l. Catch Per Unit Effort (CPUE)   -   46.39 Kg/Hr.

The sorting/grading of fish into sizes especially the commercially important species has over the years followed a very interesting pattern. Twenty years ago when trips are made between 28 – 35 days, sorting used to be in the form of;

-      Large
-      Medium
-      Small
-      Mixed/or Miscellaneous fish

Later as fishing trips started lasting up to 40 – 45 days, the mix became disaggregated into Mix I & II but Mix III was rare. With fishing trips getting as long as 55 – 60 days Mix III Mix IV became prominent. By this period CPUE /day have become relatively small; there was enough time to sort/grade the smallest fish in the haul. The bottom line of this is that the so-called Mix III and IV are virtually not different from the completely ungraded trash/miscellaneous.
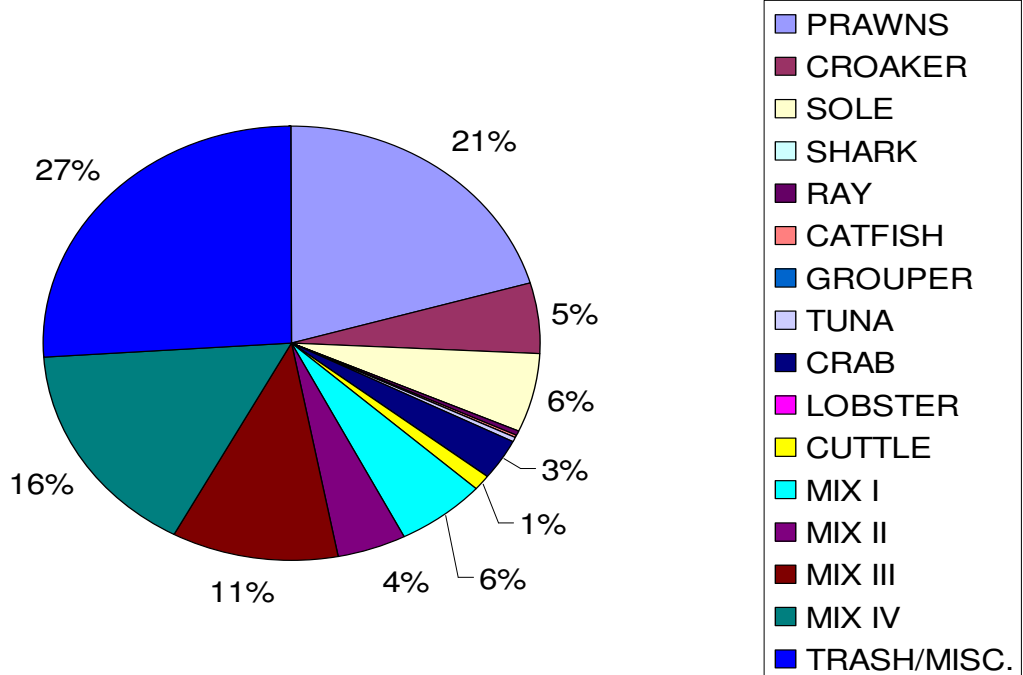
MONTH	PRAWNS	CROAKER	SOLE	SHARK	RAY	CATFISH	GROUPER	TUNA
JAN.04	572	560	140			20		
FEB.04	3846	1380	1200	44.97	118	84		26.61
MAR.04	49951.8	17473	14040	300	172	418	21	195
APR.04	39067.8	10000	18940	400.43	360	4960	15	
MAY.04	50399	10063	9940	1075	60	383.5	158	3915
JUN.04	32727.2	12758	15702	140	145	460	100	30.5
JUL.04	28050	5470	5710	731	52	220	15	33
AUG.04	6948	1322	1248	76.3			38.1	
SEPT.04	110862	20605	18957	833	83	143	43	60
OCT.04	10342	5490	6486	20		80.6	80	
NOV.04	17100	13284	9037	457	404	240	29.5	90
DEC.04	36,018	4792.8	4088	36.7	70.6	303.7	8.8	3.8

CRAB	LOBSTER	CUTTLE	MIX I	MIX II	MIX III	MIX IV	TRASH/MISC.
			560	620	900	20	100
1347		186	1000	2560	3160	1640	1447
15215	106	4018.8	20210	4720	30245	72092	45740
8663.5	10	716	9670	14490	25200	48530	56371
11249	21	883	18060	6600	25110	35030	49058
2327	73	2145.6	11774	10388	25792	33002	104570
9651		1592	7460	9908	13170	13070	41500
	11	816	960	540	340	120	500
5137.5	204	6358.8	22070	12700	39025	48993	78582
1764	40	890	3240	4360	6720	5260	44260
1466.5	30	442.4	9332	11037	24829	38150	26875
1554	12.1	2132	5500	3800	10500	9860	41041.38

SHRIMP/FISH DATA CHART JAN.2004 - DEC. 2004

Legend: PRAWNS, CROAKER, SOLE, SHARK, RAY, CATFISH, GROUPER, TUNA, CRAB, LOBSTER, CUTTLE, MIX I, MIX II, MIX III, MIX IV, TRASH/MISC.

Three prawn production peaks are discernable from the graph – July, September and October with the highest production in September. Production of both shrimps and bye-catch were very low in January and February.

SHRIMP/FISH DATA CHART
JAN.2004 - DEC. 2004.

Legend:
- PRAWNS
- CROAKER
- SOLE
- SHARK
- RAY
- CATFISH
- GROUPER
- TUNA
- CRAB
- LOBSTER
- CUTTLE
- MIX I
- MIX II
- MIX III
- MIX IV
- TRASH/MISC.

Pie chart values: 21%, 5%, 6%, 3%, 1%, 6%, 4%, 11%, 16%, 27%

Trash/Misc, Mix III and Mix IV constitute 54% production while commercially important species like the Soles, Croakers and Groupers constitute only 17%. Only species that were up to 1% of the total catch were indicated.

The comparism of the volume of bye-catch/shrimp landing showed that bye-catch overshot the legal volume of 75% as stipulated in the fishing regulation.

Bye-Catch	Shrimp
1,497,864	385,883.8

Percentage Composition of Shrimp and Bye-Catch for Jan. 2004 - Dec. 2004

Pie chart: 20%, 80%

Legend:
- Bye-Catch
- Shrimp

Information was collected on quantity of fish landed and quantity that could not be sorted further. It is from this last category that the crew of fishing vessels make private money by selling to artisanal fishermen who are always available. On occasions where there are no buyers the unsorted fish is thrown overboard as trash. It is pertinent to note that these occasions were very rare. However this class of fish (so called Trash) formed 27% of the total landings higher than the prawns and other species of premium food fish.

TRASH COMPOSITION

A look at the composition of the trash fish shows that only juveniles of large species occurred in significant percentages e.g. the Croakers – 27%, Silver fish – 13%, Treadfins – 11%, Soles – 9%, Grouper – 5%, while the genetically small fish big eye 4%, Sardinella Species 2% and the rest less than 2%.

SN	Species	Frequency	Percentage
1	Albula vulpes	1	0
2	Alectis alexandrinus	13	1
3	Arius heudeolitti	1	0
4	Batrachoides spp.	1	0
5	Bothus guibei	6	0
6	Bothus podas africanus	10	1
7	Brachydeuterus auritus	51	4
8	Caranx bicolor	1	0
9	Caranx carangus	1	0
10	Caranx chrysos	14	1
11	Caranx hippos	2	0
12	Caranx lugubris	1	0
13	Caranx senegallus	11	1
14	Chaetodipterus goreensis	1	0
15	Chloroscombrus chrysurus	47	4
16	Cynoglossus browni	32	3
17	Cynoglossus cadenati	9	1
18	Cynoglossus senegalensis	16	1
19	Cynoponticus ferox	24	3
20	Dasyatis margarita	2	0
21	Dentex angoensis	1	0
22	Dentex congolensis	1	0

23	Drepane africana	70	6
24	Elops lacerta	3	0
25	Ephipus goreensis	1	9
26	Epinephelus aeneus	31	3
27	Ethmalosa fimbriata	13	1
28	Eucinostomus melanopterus	4	0
29	Galeoides decadactylus	150	12
30	Ilisha africana	18	1
31	Lagocephalus laevigatus	14	1
32	Mugil cephalus	9	1
33	Ophichthus ophis	1	0
34	Pagellus belloti	1	0
35	Pegusa cadenati	8	1
36	Pentanemus quinquarius	12	1
37	Platycephalus gruveli	9	1
38	Platycephalus lavigatus	8	1
39	Pomadasys jubelini	37	3
40	Pseudepeneus prayensis	7	1
41	Pseudolithus senegalensis	10	1
42	Pseudopeneaus prayensis	1	0
43	Pseudotolithus brachygnathus	11	1
44	Pseudotolithus elongatus	39	3
45	Pseudotolithus epipercus	2	0
46	Pseudotolithus moorii	16	1
47	Pseudotolithus senegalensis	114	9
48	Pseudotolithus typus	82	6
49	Pteroscion peli	30	2
50	Raja miraletus	11	1
51	Sardinela maderensis	15	1
52	Sardinella eba	1	0
53	Scomberomerus tritor	15	1
54	Scyris alexandrinus	17	1
55	Selar crumenoptthalmus	1	0
56	Selene dorsalis	61	5
57	Sphyraena guachancho	16	1
58	Sphyraena sphyraena	1	0
59	Symphurus liguatus	1	0
60	Syphurus nigrescens	1	0
61	Trachinotus trachinotus	2	0
62	Trachinus lineolatus	1	0
63	Trichiurus lepturus	167	13
64	Trophius vallianti	1	0
65	Uranoscopi polli	1	0
66	Vomer setapinnis	14	1

One obvious conclusion from the data collection exercise is that high level of trash production is not healthy and something positive need to be done to reduce the trash fish production. The pertinent question is what to do with the beneficiaries of these trash fish markets.

A few incidentals were reported by the observers which management is looking into and this includes;

i. Violent attacks by pirates and one occasion an observer was shot at.
ii. All the vessels carried the required TEDs but only seldomly used them
iii. Many vessels often purposely ventured into the non-trawl zone to scoop shrimps (<u>Parapaenopsis</u> <u>atlantica</u>) mainly and small fish (Juveniles)
iv. Some of the vessels were aging and often had broken voyages
v. Vessels now stay at an average of 60 days and at Sea for a complete fishing trip compared to the usual 30 days.

PUBLIC ENLIGHTENMENT.

Initiation of Campaigns for widespread use of Bye-Catch Reduction Devices.

In all the pre-commencement meetings the harmful effects of the current methods of shrimp trawling were highlighted. Visits were paid to fishing companies and the Chief Executive Officers of the companies were individually sensitized.

The FAO had fielded consultants to Nigeria and they have helped a lot by going around fishing companies to show the efficiency of the new net modifications – BRDs and to further highlight the advantages of using the BRDs.

The climax of the campaign is the production of a flyer which details the focus and expected output of the project, the advantages of the use of BRDs and the dire consequences of fishing in a non sustainable manner. More of the flyers, which would deal on issues of performance of the BRDs will be produced in future.

5. **<u>MCS.</u>**

Fisheries Resources Monitoring Control and Surveillance, as an effective tool in the management of fisheries resources, is very relevant to the successful implementation of Bye-Catch Reduction Technology and Change Management Project. The legal platforms for the implementation of the MCS programme in the country are the Sea Fisheries Act No. 71 of 1992 and its related Fishing and Licensing Regulations. These and the provisions of the FAO's impetus to constantly mobilize the stakeholders in the fisheries sector towards accepting and complying with the various management measures.

i. *PROGRAMME IMPLEMENTATION*
   Inspection of Fishing Vessels and Enforcement of the Sea Fisheries Act:

This entails routine inspection of all fishing and shrimping vessels that land in any port or jetty in the country. Fishing/Shrimping gears are inspected to ensure compliance with the provisions of the legislation. Also data on fish/shrimp are collected, collated and processed. In order to ensure that the data collected and analyzed are more purposeful and relevant to the programme, new formats for fish/shrimp and vessels inspection have been introduced in accordance with international reporting system.

ii. *Review of the Turtle Excluder Device (TED) and Bye-Catch Reduction Devices (BRD) Regulation.*

The existing Turtle Excluder Device Regulation has been reviewed in line with the new U.S.A. TED'S regulation and to ensure full compliance. In this direction the Draft on TEDs and other Bye-Catch Reduction Devices was submitted in April for ratification and gazetting.

iii. *Training Workshops on TEDs Fabrication and Installation*

The MCS Unit has already incorporated the shrimp fisheries project into its programme. Apart from including the BRDs in the NEW DRAFT Regulation

on TEDs, the unit has equally created time for the discussion of the project in the regular meetings with the industry/all stake holders.

iv. Establishment of Standards for the Sorting of Fish

Prescribed uniform standards for the sorting of fish into various approved grades and labelling of packages have been introduced. Hitherto, standards were Company specific, with no basis for comparing products bearing the same label in different Companies.

vi. Collaboration with Gulf of Guinea States on the Management of Marine Fisheries Resources.

Efforts are being made to facilitate the establishment of a common fisheries policy in the sub-region. In this direction, contacts have been made with embassies of Benin Republic, Gabon, Cameroon, Togo, requesting for copies of their Fisheries Laws for study, and probable discussion at a suitable sub-regional meeting, with a view to possibly harmonizing our fisheries legislations.

TECHNOLOGY COMPONENT.

Preparations for the component commenced same time with that of data collection. The only BRD familiar with the Nigerian Industrial fishing before now was the TEDs. Gradually, during the workshop on TEDs the industry was made to know about other possibilities. The coming of the consultants from FAO expanded the knowledge of industry on the other alternatives and made these net adaptations look friendlier than the operators had imagined. Two general training workshop sessions were conducted by the consultants earlier mentioned. The Nigerian Industry was exposed to all possible net adaptations to reduce bye-catch namely;

a. Square mesh pane/window (SMW) attached to a diagonal mesh codend.
b. Composite square mesh panels.
c. Square mesh codend (SMW) codend constructed entirely with square mesh nettings.

d. 90 degree turned or gentle codend. Diagonal mesh netting is re-oriented or turned (from normal to transverse run of netting) to construct the codend.

e. Nordmore grid.

f. Fish eye.

g. Rectangular Shape JTED.

h. Circular shape JTED.

i. Rectangular shaped rigid sorting grid.

j. Semi circular rigid sorting grid.

k. Square mesh plastic panels/window.

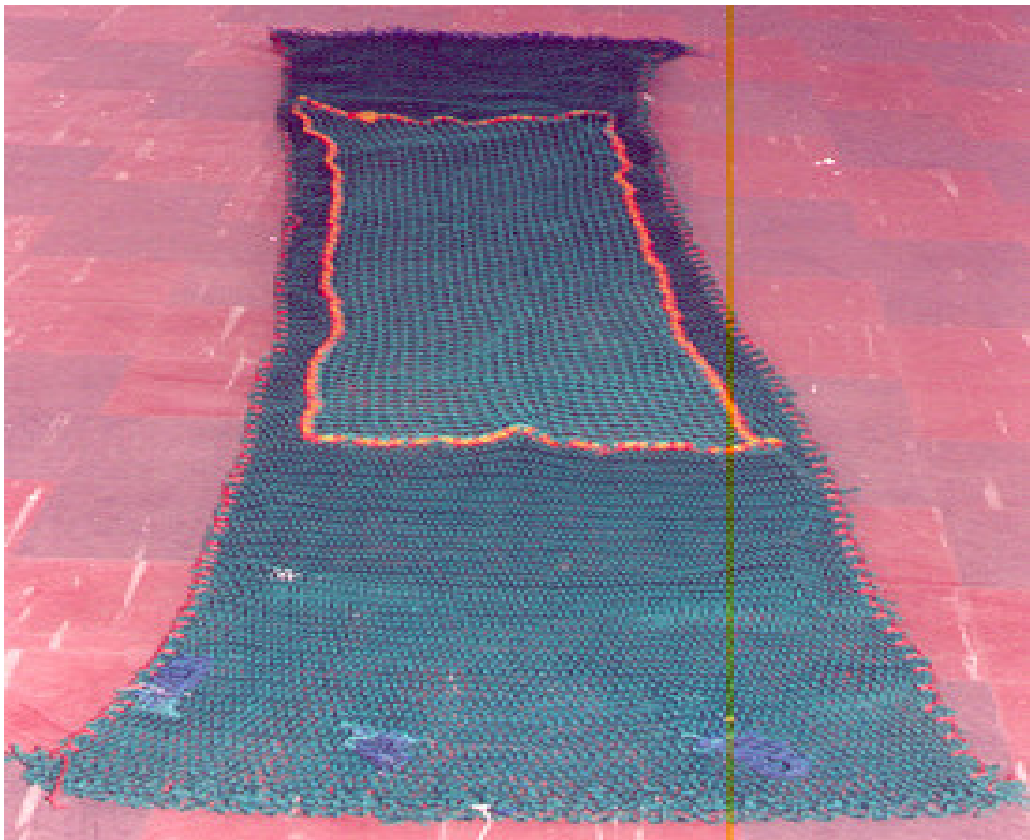Currently the Nigerian Fishing Industry has zeroed its trial/selection on three net adaptations;

- the square mesh codend
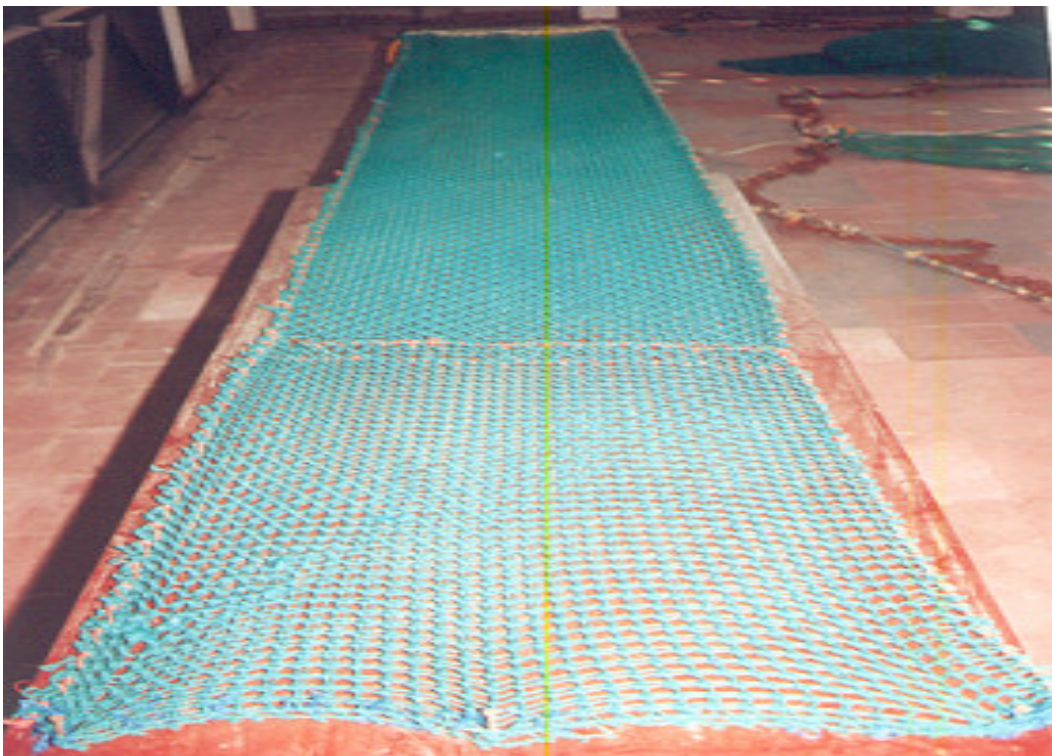
- 90 $^{\text{o}}$ turned mesh or gentle codend.
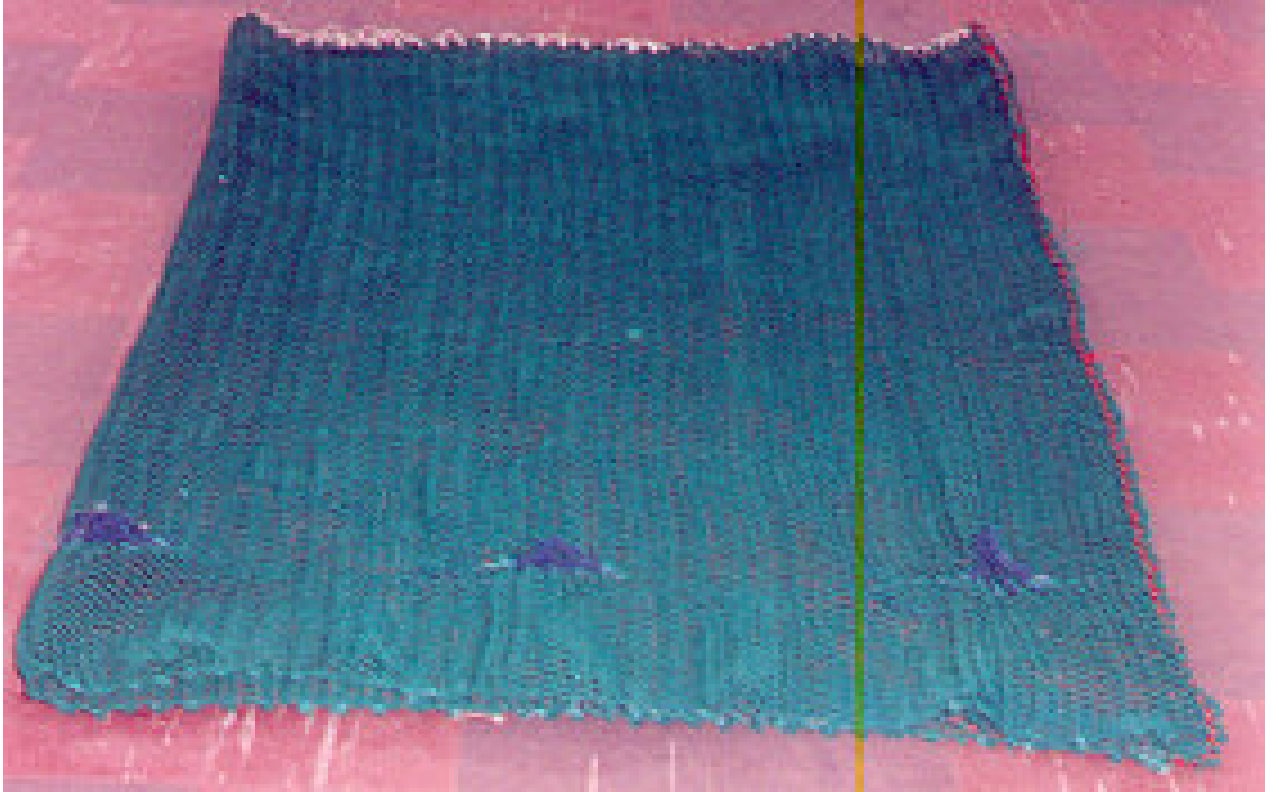
- Square mesh window

The selection of these so far was based on their simplicity of application. Seven 1-day Sea trials have been conducted using the three mentioned adaptations.

The result is that catches by the trawl nets using BRD cod end were cleaner and thereby made sorting easier and time-saving. Also BRD Cod-ends retained much lower quantity of trash fish compared to the traditional gear (Diamond mesh). Their was no significant reduction in the quantity of shrimp landed. There was a significant increase in the landing of Commercial fish when the square mesh cod-end was applied.
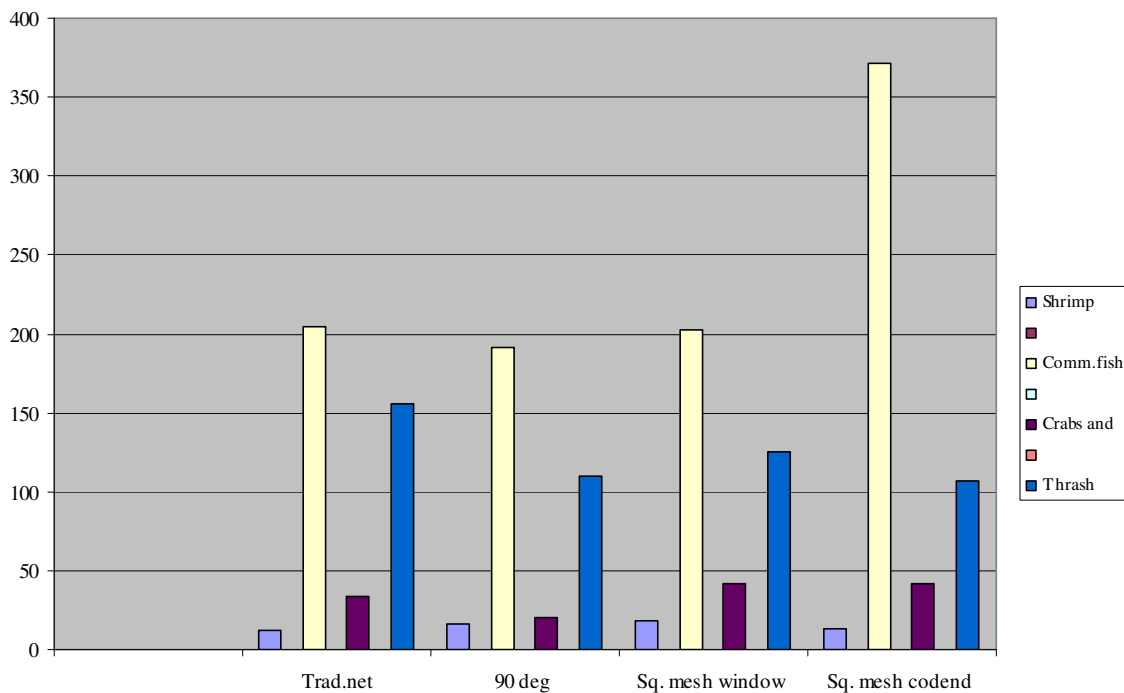

Fig. 8a. Grand total of the weight of fish/shrimps caught by trawlnet codends on board commercial vessels in Nigeria.

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SOCIO-ECONOMIC COMPONENT.

The form for collecting socio-economic data had been developed. The collection of socioeconomic data have commenced in areas along the coastline and some islands of profuse trash fish trade. Training of staff for the exercise had been carried out. The following achievements have been recorded under the socioeconomic programme;

1. 5 – Training of six officer – survey assistants by P.O. Abohweyere
2. Reconnaissance surveys of five coastal states have been successfully carried out.
3. Preliminary visits have been paid to the following states.

<u>Cross River State;</u>
- National Inland Waterways Authority
- Nsidung Beach Market Calaber

<u>Akwa-Ibom State;</u>
- Ibaka Beach
- Ibeno Beach
- Uta-Ewa Beach

<u>Rivers State;</u>
- Oyorokoto Beach

The trash fish market centres in Bayelsa and Delta States could not be reached because of security problems.