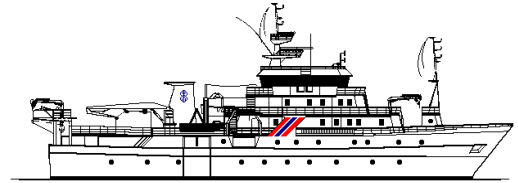


Countries: Senegal, The Gambia, Guinea Bissau, Guinea				
Research vessel: R/V DR. FRIDTJOF NANSEN				
Survey number: 2011407				
Number of days: 17				
General objectives: to estimate biomass and map the distribution of small pelagic fish stocks off NW Africa (Senegal, the Gambia, Guinea Bissau and Guinea) by hydro-acoustic methods and describe the hydrographic conditions in the region over a period of 16 days, in June-July 2011				
	Port	Date	Coverage	Specific objectives
Departure	Dakar	22 June	Senegal, Gambia. Guinea Bissau. Guinea	<ul style="list-style-type: none"> To map the distribution and estimate the biomass for the main small pelagic fish using hydro-acoustic methods. The species of interest were: sardinellas (<i>Sardinella aurita</i>) and (<i>Sardinella maderensis</i>), horse mackerel (<i>T. trecae</i>), false scad (<i>Decapterus rhonchus</i>), and anchovy (<i>Engraulis encrasicolus</i>). To identify and describe the size distribution of the target fish populations by midwater and bottom trawl sampling and process the catches by recording weight and number by species. Collect biological data of the main target species, especially <i>Sardinella aurita</i>, <i>S. maderensis</i> and <i>T. trecae</i>. To sample standard hydrographical transects for temperature, salinity and oxygen. To train local participants in acoustic survey methodology including fish identification and sampling, scrutinizing of echograms, hydrographic sampling and abundance estimation.
Arrival	Conacry	7 July		
Cruise leader: Reidar Toresen				
Participants:				
<u>Centre de Recherches Océanographiques de Dakar-Thiaroye (CRODT), Senegal:</u> Abdoulaye Sarre (Local cruise leader) and Ndiaga Thiam				
<u>Department of Fisheries (FD), The Gambia:</u> Ebou Mass Mbye				
<u>Centro de Investigacao Pesqueira Aplicada (CIPA), Guinea Bissau :</u> M. Duarte Bucal and Amadeu Mendes de Almeida				
<u>Centre National des Sciences Halieutique de Boussoura (CNSHB), Guinea:</u> Amadou Bahand and Ousmane Tagbé Camara				
<u>Institute of Marine Research (IMR), Norway:</u> Reidar Toresen (Cruise leader), Magne Olsen, Jarle Kristiansen and Ole Sverre Fossheim				





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Summary of the results:

The survey was conducted successfully from 22nd June to 7th July, covering a course track of 2 212 NM. A total of 63 fishing stations and 113 CTD casts were carried out.

The hydrographical data showed a stable surface layer at approximately 30-50 m depth for the whole shelf. Warm surface waters characterized the surface water in Guinea, Guinea Bissau, the Casamance area and in The Gambia, but decreased north of Cape Vert. The shelf was well oxygenated in the whole survey area.

Sardinellas were found in three large areas, and in a few smaller patches between Guinea and St Louis. The total biomass was estimated to be 766 thousand tonnes, and 35% of this was *S. aurita*. The major part of the stock, 69% of *S. aurita*, and 59% of *S. maderensis* respectively, were concentrated between Casamance and St. Louis. The division of biomass between length groups and species are dependent on representative trawl samples of the two species. Since sardinella show strong trawl avoidance some care should be taken when interpreting the results.

Trachurus trecae were found in some smaller areas between Gambia and Cape Vert, and a somewhat larger area further north, . Almost no horse mackerel were found in Guinea Bissau or in Guinea. The total estimate of *Trachurus trecae* was 26 thousand tonnes, of this 92% was found north of The Gambia. No separate estimate was made for *Decapterus rhonchus*.

The distribution of 'P2's', other carangids and associated species, were distributed over most of the shelf in low densities. The main species in the catches of this group consisted of *Chloroscombrus chrysurus*, *Decapterus rhonchus* and *Selene dorsalis*. The total biomass was estimated at 648 thousand tonnes.

The total biomass of sardinellas was thus 766 thousand tonnes, *Trachurus trecae* 26 thousand tonnes and of carangids and associated species 648 thousand tonnes.

Large-scale latitudinal movements of pelagic fish between West Sahara and Guinea are well known, and in the summer the sardinellas should be concentrated in Senegal for spawning. The present coverage of the area is different from previous once as the shelves off Guinea and Guinea Bissau also was covered. This gives additional information about pelagic fish in the region and may explain some of the variation in abundance of pelagic fish in the different countries because substantial amounts of sardinella were also found here. The estimate of sardinellas in Guinea Bissau and in Guinea of 220 thousand tonnes can be compared with the estimate of 388 thousand tonnes of sardinella estimated in a survey in these countries in May-June 2007. The estimates of sardinellas and horse mackerel of 500 and 393 thousand tonnes in Senegal and the Gambia during this survey is somewhat low when compared to earlier estimates of these at this time of the year in this area.

Report: status: final References:

NORAD - FAO PROJECT GCP/INT/003/NOR CRUISE REPORTS "DR. FRIDTJOF NANSEN"
EAF - N/2011/7. **Survey of the pelagic fish resources off North West Africa. Senegal – The Gambia – Guinea Bissau – Guinea, 22 June - 7 July 2011.** Bergen, January 2012

Constraints/Comments:

