



EAF-Nansen Programme

Workshop on nutrition and food safety, based on the surveys with the RV Dr Fridtjof Nansen

IMR, Bergen, 13-15 November

Background

Fish plays a central role in nutritional and food security. Fish is a good source of fats and protein and a unique source of micronutrients such as marine fatty acids, iodine, selenium and vitamin D. Small fish eaten whole with bones are a good source of calcium, zinc and vitamin A. Presently there is little data on the contents of nutrients in most fish species captured around the world and particularly in developing countries. The sea areas off the coast of western Africa contain large fish resources due to the upwelling of nutrient-rich deep water, which leads to a high production. There are great abundances of pelagic fish species such as anchovy, sardine, sardinella, mackerel and horse mackerel, species that are important food resources particularly to the coastal population of West Africa and as a resource for the coastal nations in the area. In addition to knowledge of the contents of nutrients in these fish species, there is a lack of documentation on the contents of legacy environmental contaminants such as heavy metals and persistent organic pollutants, as well as emerging pollutants such as microplastics. Knowledge on levels of chemical contaminants is of significance both to assess seafood safety and possible effects of environmental pollution.

In May 2017, the EAF Nansen programme 2017-2021 initiated its first series of cruises, starting along the west coast of Africa. During these cruises, samples of a number of pelagic fish species have been taken and prepared for later analyses of a range of nutrients and contaminants. The samples are stored at Institute of Marine Research pending analysis. Institute of Marine Research has status as Norwegian reference laboratory, and have accredited methods for analysing a range of nutrients and undesirable components. Status for the analysis is that we have analysed nutrients in samples from Morocco and Ghana (in these countries we have also established collaboration). It is important that collaboration is established in the whole region to review the samples collected so far, discuss the methodology proposed for analysis of these samples, and discuss relevant scientific work to be undertaken based on data and samples collected through the surveys with the *RV Dr Fridtjof Nansen*.

A workshop is therefore proposed with participants from cooperating countries from West Africa and the Bay of Bengal.

The specific objectives of the workshop are as follows:

- Identify priorities for food safety hazards and nutrition to be taken into consideration
- Review methodology for sampling and for analysis of samples
- Assess required samples to ensure statistically sound results
- Discuss confidentiality issues

- Review Theme 8 work plan
- Review data available from the different areas (input from local scientists needed).
- Identify needs for additional sampling in connection with the surveys in 2019)
- Identify participants in the 2019 surveys
- Prepare outlines for possible articles based on the samples collected off West Africa with the RV Dr Fridtjof Nansen.

Expected Outcomes/Outputs:

- Priorities for studies on food safety hazards and nutrition identified
- List of species by region agreed
- Agreed strategy to sound statistical results
- Agreed methodology for analysis of samples and for sampling
- Limitations in available samples identified
- Scientists to participate on the Nansen cruises 2019 identified.
- Revised Theme 8 and work plan
- Titles, outlines and respective responsibilities for the preparation of scientific papers.

Participation

- Resource persons with relevant background from partner institutions
- International partners (e.g. Worldfish)
- FAO
- IMR

Agenda

Day 1	
Time	Agenda item
09.00-09.30	Introduction to the workshop and participants Scope Objectives of the workshop and review of the agenda
09.30-10.00	Introduction to the “Nutrition and food safety” component of the NANSEN
10.00-10.15	<i>Coffee break</i>
10.15-11.15	Food safety hazards for fishery products, global picture (30 minutes presentation, 30 minutes plenary discussion to discuss regional differences)
11.15-12.00	Nutrition and food security issues, global picture How fish contributes to fight hunger and malnutrition worldwide.
12.00-13.00	<i>Lunch</i>
13.00-13.30	Nutrition and Food Safety work carried out by the project (until now). <ul style="list-style-type: none"> - Overview of cruises - Preliminary results from Morocco and Ghana (as examples) - Examples of regional approaches/monitoring (e.g. sardinella protocol, West Africa) - Preliminary results of microplastics
13.30-14.30	Discussions by regional groups on nutrition and food safety priorities by fish species <ul style="list-style-type: none"> - Group work with facilitators from IMR and FAO - Country or region depending on participants attending Each group should choose a leader who will be responsible for presenting 1-2 bullet points, and a short written summary of the discussion.
14.30-14.45	<i>Coffee break</i>
14.45-16.00	Presentations by group of the nutrition and food safety priorities by fish species by region
Day 2	
09.00-09.15	Presentation of the agenda and objectives of the day
9.15-10.15	Local scientists present seafood consumption data, data on nutrient and contaminants, and data gaps
10.15-10.30	<i>Coffee break</i>
10.30-11.30	Summary of priority species and food safety hazards to be taken on-board for future work in the EAF-Nansen Programme <ul style="list-style-type: none"> - Sum up discussion from Day 1 (presentation and plenary discussion)
11.30-12.30	Methodology for food safety sampling and analysis and sample size by species and region (presentation and plenary discussion) <ul style="list-style-type: none"> - Presentation of methods available at IMR

	Heavy metals, organic pollutants, Microplastics
12.30-13.30	<i>Lunch break</i>
13.30-14.30	Summary of priorities for research in nutrients (presentation and plenary discussion) <ul style="list-style-type: none"> - Minerals and trace elements - Vitamins Proximal analysis
14.30-14.45	Coffee break
14.45-16.00	Methodology sampling and analysis for food composition and sample size by species and region <ul style="list-style-type: none"> - Present the sampling protocols in details (for chemical analysis) Present protocol for parasites and microplastics (Mike)
Day 3	
09.00-09.15	Presentation of the agenda and objectives of the day
09.15-10.15	Identification of the titles, outlines and respective responsibilities for the preparation of scientific papers. Including utilization of data and confidentiality issues <ul style="list-style-type: none"> - Group work with facilitators from IMR and FAO - Country or region depending on participants attending Each group should choose a leader who will be responsible for presenting, and a short written summary of the discussion.
10.15-10.30	<i>Coffee break</i>
10.30-11.30	Continuation of group work
11.30-12.00	Presentation of the titles, outlines and respective responsibilities for the preparation of scientific papers. Plenary discussion and agreement
12.00-12.30	Discussions and suggestions of local scientist to participate on the Nansen cruises 2019.
	Closing of the workshop and housekeeping notes for the afternoon laboratory visit
12.30-13.30	<i>Lunch break</i>
13.30-15.30	Information and visit to the laboratory (in groups)