



## The Norwegian Node of METROFOOD-RI

To enhance quality and reliability of measurement results

To make available and share data, information and metrological tools

To enhance scientific excellence in the field of food quality & safety

To strengthen scientific knowledge, promoting scientific cooperation and integration

### PARTNERS



Norwegian University of Science and Technology

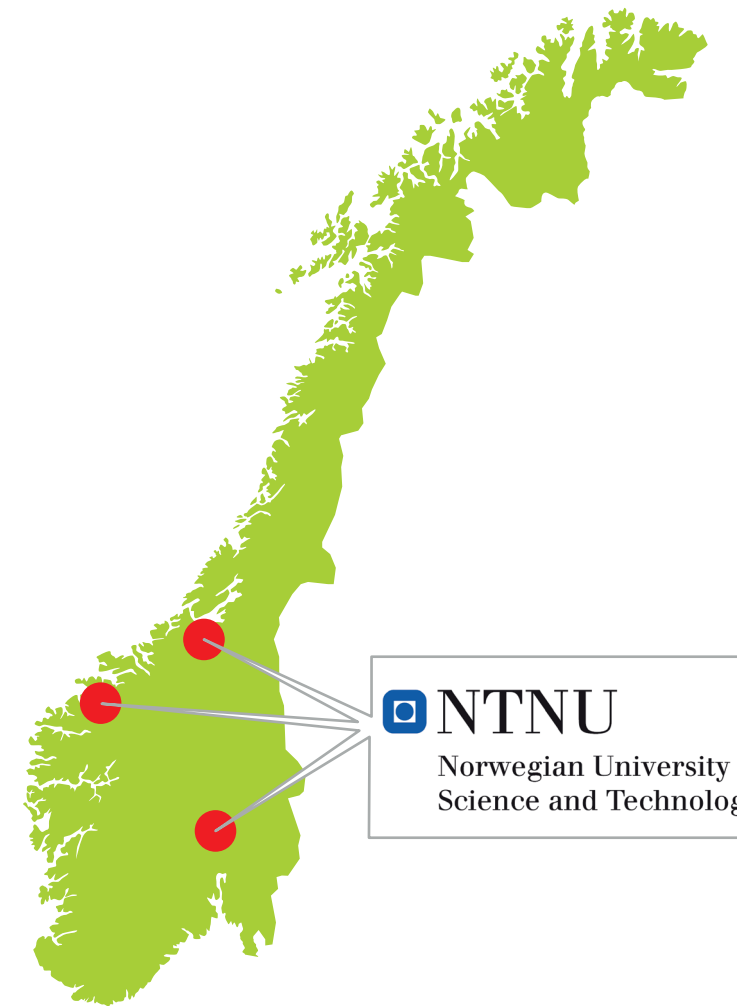
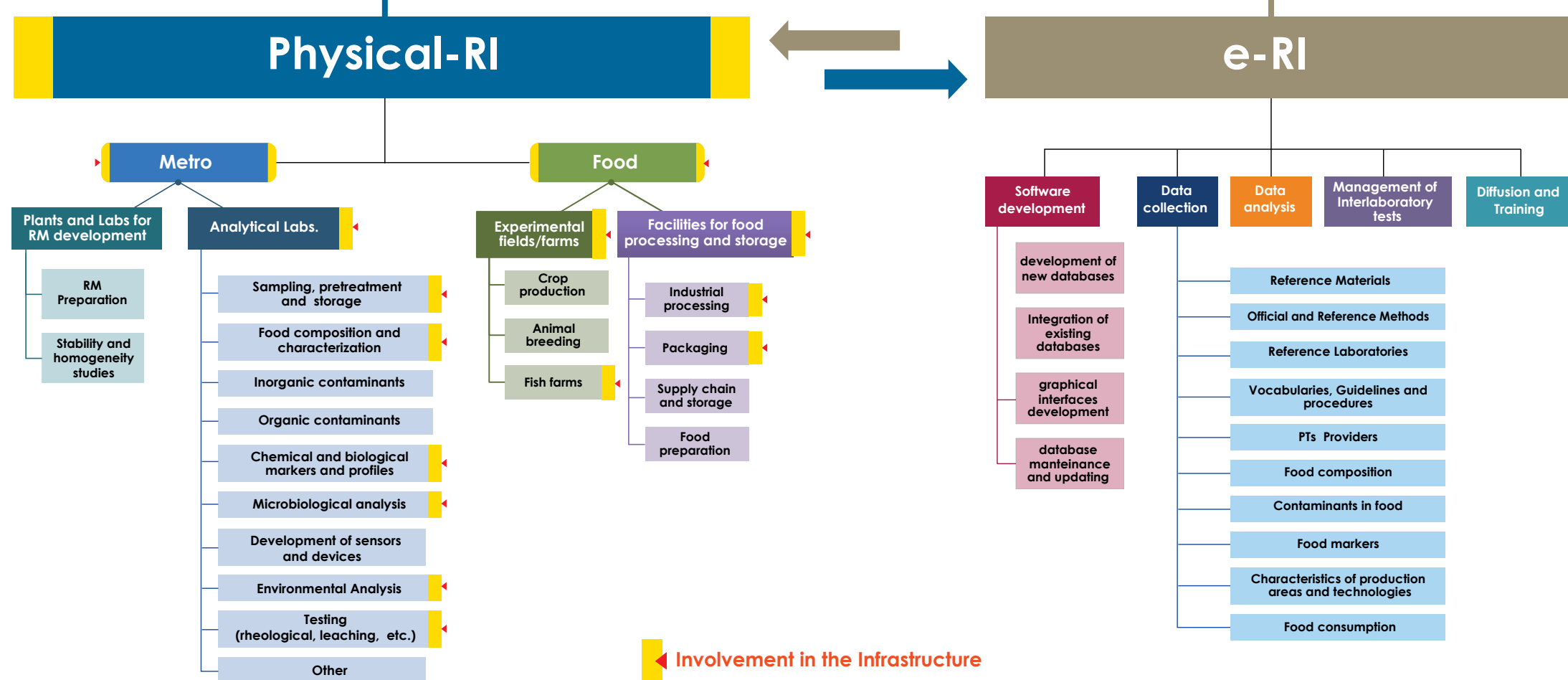


#### NTNU - Norwegian University of Science and Technology

The Norwegian University of Science and Technology (NTNU) is Norway's primary centre for technological research and education with a firm foundation in natural sciences. NTNU is a merger of the previous Norwegian Institute of Technology (NTH), established in 1910 and the University of Trondheim. In 2016, NTNU merged with the University Colleges in Gjøvik, Sør-Trøndelag and Ålesund to form a single university. The topics include technology, science, arts and humanities, social sciences, and medicine. Close co-operation between the different disciplines is one of NTNU's key features. It allows the development of interdisciplinary programmes that unite many areas of specialisation and cross the boundaries of faculties and departments. NTNU has a European research infrastructure in marine resources. NTNU now (2020) have 9 faculties and 55 departments. We have 42000 students and of these around 35400 are in Trondheim, 4000 in Gjøvik and 2600 in Ålesund. The number of doctoral degrees should be 397 and international students 3600. Man years 7600 full time equivalents, half are in teaching. Female staff now make up 42%. NTNU has close collaboration with industry and with international R&D actors and is closely interlinked with the Norwegian research organization SINTEF. SINTEF is Scandinavia's largest independent research institute. NTNU also has close cooperation with St. Olavs Hospital and NTNU Social Research AS. Budget is now around 960 instead of 800 – 28 % is externally funded. NTNU participates actively in EU R&D Framework Programmes; it had 126 projects under the 7th framework programme and is currently involved in 38 projects in H2020 of which 2 are ERC projects and 10 for which the university is coordinator.

Marine and maritime research is one of NTNU's 4 strategic areas. The main strategy of NTNU Ocean is to meet challenges as a producer, manager and communicator of knowledge by integrating knowledge by stimulating cooperation between natural sciences, engineering and social sciences.

[www.ntnu.edu](http://www.ntnu.edu)



Norwegian University of Science and Technology

Pre-existing value:

- 4.490 k€, out of which 967 k€ at METROFOOD-RI disposal

Involved researchers:

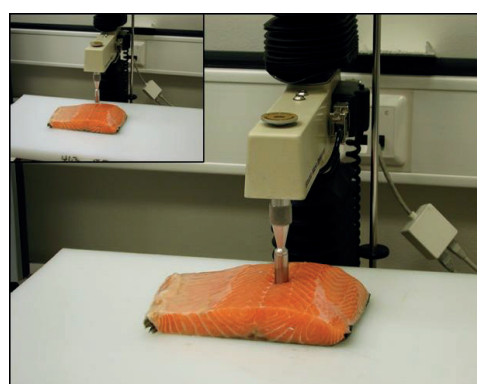
- 4 units (0,9 FTE)

### Physical Facilities

### Food

#### Analytical Labs

Department of Biotechnology and Food Science (IBT) has integrated research activities within: Biopolymer chemistry; Marine biochemistry and bioprospecting; Molecular genetics, metabolomics and systems biology; Structural biology and NMR; Microbial ecology and environmental biotechnology; Food science. The main research focus of the group of food science is on the biochemistry and quality of food raw material and the changes taking place during processing. The food science group has been working with utilization of fish rest raw materials for many years, focusing on characterization of raw materials and processes to extract valuable fractions. The group has also worked on many projects related to the quality of seafood. IBT has good facilities and have a long background in methodology for chemical and biochemical characterization of food raw materials and food products especially related to seafood. The facilities include both traditional methods such as UV VIS and fluorescence spectrophotometry, chromatography, electrophoresis as well as DSC, water activity determination, a well-equipped mass spectrometry lab, several NMR machines, PCR etc. IBT has a sensory lab and a semi-trained panel and IBT is also very well equipped with regard to rheological and texture measurements. Microstation.



The Department of Biotechnology and Food Science (IBT) has facilities for food product processing such as chopping, smoking, brewery equipment, pasteurization, sous vide treatment, membrane filtering and modified atmosphere packaging.

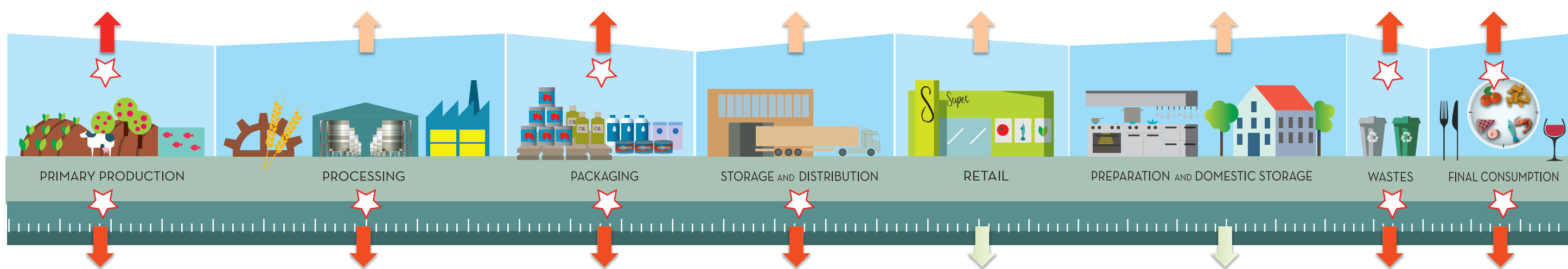
The Department of Biological Sciences in Ålesund is closely linked to the regional economy, both to health and the marine sector. The Department focuses on research and innovation related to health and sustainable utilization of marine resources, medical and marine laboratory technology. NTNU Ålesund has a licence to produce farmed salmon the size is 780 tons and the duration is from 2015 to 2025 with the opportunity for a new licence after this. The farming is done in cooperation with one of the large salmon producers in Norway. NTNU owns all the fish and the fish is used for research purposes. Equipment for measurement of water quality, and fish behavior is available.

The Department of Energy and Process Engineering at the Faculty of Engineering has facilities for dewatering and drying as well as cooling, freezing and thawing and fluidized bed. NTNU has a research vessel, R/V Gunnerus. Gunnerus is equipped with the latest technology for a variety of research activities within biology, technology, geology, archaeology, oceanography and fisheries research.



ANALYTICAL CAPACITIES														
OTHER ANALYTICAL CAPACITIES	MATERIALS		AGROECOSYSTEM	NUTRITION	AUTHENTICITY TRACEABILITY			FOOD QUALITY			FOOD SAFETY			
	Ceramic materials and composites  Plastic materials  Other		Soils and sediments characterization  Bio-availability studies  Air pollution  Wet & Dry depositions  Biocorrosion  Other	Surface and groundwater quality characterization	Vitamins Carbohydrates Fatty acids Proteins and amino-acids Water Minerals Other	Genetic markers	Isotopes of light elements  Isotopes of heavy elements  Non target analysis  Trace elements	Microbiological analysis  Adulteration  Other	Organoleptic properties  Nutritional quality  Physico-chemical analysis  Bioactive compounds  Biological analysis	Foodborne viruses and Prions  Radioactivity  Other	Pathogenic micro-organisms  Nanomaterials  Biogenic amines  Biotides Lipid biomarkers Hydrocarbons Parasites Phenols	Chemical speciation  Pesticides  VOCs  Veterinary drugs  Mycotoxins  Other toxins (marine, freshwater, bacterial...)  Allergens Additives		

Food Chain Data



Food Quality & Safety Data