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Deliverable 15.1
Title : Analysis of access provided by NOFIMA NRSA: types and users

Version 2

WP 15
Deliverable 15.1
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Executive Summary

Objectives To offer research facilities to TNA users from different countries.

Main Results: Nofima has had 5 request during the period where we have given offers and made plans to conduct experiments. One was not possible since the applier wanted us to make the feed wich is not included in our TNA services. 2 projects was granted, one withdraw (Canada) due to too low covering of travel costs. One withdraw due to time limits for finalizing the project July 2025, it was planned in August 2025. Two projects have started and will be ended during July 2025.
(Wras1Excel, Sparos and fasting of salmonids, University of Soth Bohemia)

Due to little activity in the start NOFIMA NSRA gave up 50.000 EUR from allocated funds in December 2023/January 2024.

Authors/Teams involved: Nofima: Per Brunsvik, Ingrid Lein, Chris Noble, Linda Tschirren and Danilo Carletto, Sparos: Helena Teixeira, João Henriques, Luís Conceição. University of South Bohemia: Jan Urban and Stphanye Osei.

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1. Overview of TNA users projects realized in NOFIMA

1.1.1. Installations

NRSA have facilities for aquaculture experiments with freshwater (ground water) and seawater (filtrated to 20 microns and UV-treated), in flow through and RAS. Fish species used in research are: salmon, lumpfish and ballan wrasse. There are tanks available from the size of start feeding up to fish size around 2 kg. Fish tanks have variation from 20 to 10.000 liters. The station has research facilities for nutrition, formulated feeds, physiology, breeding and recirculation studies.

The station has six different buildings: 3 buildings will be available for TNA experiments:

Building 4 NOFIMA, Salmon department has 81 x 500 l tanks, 24 x 1200 liter tanks, 32 x 200 l tanks all with feed Collection, 44 200 l tanks without feed collection. Several hatching units. The department has a possibility for temperature control, both warm and cold for both fresh and seawater. The department will be upgraded by June 2021.

Building 5 Cleaner Fish Experimental Unit (CFU) has license for holding ballan wrasse and lumpsucker.

The tanks (6 x 3000l; for broodstock, 15 and 24 units a 100 l for start feeding in 2 compartments, 12 x 250l units, and 12x 300l units, a hatching unit for eggs from both lumpsucker and ballan wrasse. The department can be used for broodstock nutrition, environment manipulation and experiments using dry feed for juvenile cleaner fish. The research aims at production of cleaner fish by aquaculture, as opposed to wild catch.

Building 6 NOFIMA Centre for Recirculation Aquaculture (NCRA) features 4 RAS-systems, 100 m3 (9 pcs), 3 m3 (30 pcs) and 0.5 m3 (18 pcs) tanks in 6 experimental sections with individual light regimes. The facility provides both RAS and flow-through (FT) with freshwater (ground water) and seawater (microscreen and UV-filtered). NCRA carries out research on recirculation on a broad basis, and experiments in the areas of fish nutrition, technology, physiology and welfare. High degree of control and monitoring is possible using modern e-infrastructure developed in previous AQUAEXCELs.

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1.1.2. User projects

Min. quantity of access units to be provided according ther DoA: 160
Total number of access units (sum of access units in the table): 212

Installation number	Installation code	Project title	Project acronym	Description about the experiment	Coordinator	Already used installation (Yes/No)	Nature of the access unit*	Number of used access units during the project	(Potential) paper	How many people was trained by this procedure ?
1	NOFIMA-NRSA	Novel weaning formulations for optimal skeletal development and growth performance of Ballan wrasse larvae	WrasL1Excell	Feeding experiment	João Henriques	No	tank.week	160		2
2	NOFIMA-NRSA	Quantifying the effects of fasting on the behaviour and fin damage of juvenile Atlantic salmon and rainbow trout, and classifying these effects via Artificial Intelligence	Fasting of salmonids	Bahavioural experiment using cameras and AI	Jan Urban	No	tank one week=tanks week	52		2

** Access units describe how accesses are calculated, typically 1 day x 1 pot, 1 season x 1 microplot, etc …*

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2. TNA projects

2.1.1. TNA projects description

For each project :

WrasL1EXCEL Feeding experiment with ballan wrasse larve, from start feeding 72 daysHelena Teixeira stays at Nofima Sunndalsøra. Nofima supports the project with larve of ballan wrasse, 15 tanks for the feeding experiment. 4 days larvae will be first fed in 15 triplicate tanks. Until day 15 the larvae will be fed live feeds only (copepods and cryoplakton) Thereafter 4 microdiets plus one control diet will be introduced in combination with live feed. The larve will be weaned to inert feed from day 36. Sampling of larve for growth estimation and histology will take place before distribution of larvae to experimental tanks, at introduction of micro diets (15 days post-hatching), 35, 50 and 72 days. The project started in week 19 and was planned to end in week 29. There should be a publication. Two people were trained with this project

Fasting of Salmonids

The primary objective of the trial is to record a naturally swimming fish before, during and after fasting in the aquaculture tanks and develop, train, and test CNN-based approaches for fin damage evaluation and behavioural assessment.
The project starts week 24 with 2 weeks acclimation, then fasting periode week 27, samplings week 26,27,28 and 31. There should be a publication. Two people were trained with this project

2.1.2. Selection of One exemplary project

Final samplings haven't been made yet, and we still need to analyze the final data.

3. Reflection on results of the TNA programme

There where few requests to use the facility in the beginning of this TNA program. Nofima put newsletter on Nofimas SoMe. We also informed the Akva division in Nofima to spread the information to Nofimas researchers to try to collaborate with other institutions.

There has also been some challenges causing delay when it comes to reviewing the applications.

References

Document Information

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Project website	www.aquaexcel.eu

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Work Package Leader	Sonia Rey Planellas/Sushee Dunn			
Work Participants				

Lead Beneficiary	Nofima; Bente Johansen Partner Number 963474423
Authors	Per Brunsvik, Nofima NRSAper.brusvik@nofima
Reviewers	Chris Noble,Nofima Chris.Noble@Nofima.no

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