

Aquaculture Farm Management with Microsoft Business Central 365



This presentation outlines the functional scope of Navisoft Tunisia's aquaculture farm management solution **NaviFish**, built on Microsoft Business Central 365. Authored by Navisoft Tunisia, this version 2.0 update from November 2025 details a comprehensive system for fish farmers.

The solution covers the entire aquaculture process, from fry (Sea Bream, Sea Bass) seeding in cages to fish sales, providing a wide functional perimeter for efficient farm operations.



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Introduction to Aquaculture Management

This document details the functional scope of our aquaculture farm management solution **NaviFish**, built on Microsoft Business Central 365. Designed for sea cage fish farmers, it covers the entire process from fry (Sea Bream, Sea Bass) seeding to fish sales.

The solution is fully integrated with Microsoft Business Central 365 ERP, including inventory, sales, and purchase modules, ensuring compatibility with Microsoft Office Tools (Excel, Word, Outlook).



It digitally records daily actions like feeding, treatment, mortality, and fishing, as well as periodic actions such as sampling and cage emptying. The system offers a user-friendly interface for data analysis and traceability, integrating seamlessly with various modules and Microsoft Office tools.

Accessible via Web Client on PC, Android smartphones, or tablets, it enables real-time data entry and transaction posting, supporting all business levels: production, trade, supply, stocks, accounting, and human resources.



Key Terminology & Zootechnical Formulas

Terminology

- Number: Individuals per cage (pieces).
- AW: Average weight of an individual (grams).
- **BIOM:** Biomass of a population (grams).
- ΔAW: Initial & Final average weight change.
- ΔBIOM: Initial & Final biomass variation.
- I.C: Food conversion index.
- Age: Lot age since seeding date.
- LOT: Population identifier from seeding to fishing.
- **RR:** Rationing rate (%).
- **GR:** Growth rate (%).
- DMR: Daily mortality rates (%).

Formulas for In-Progress Cages

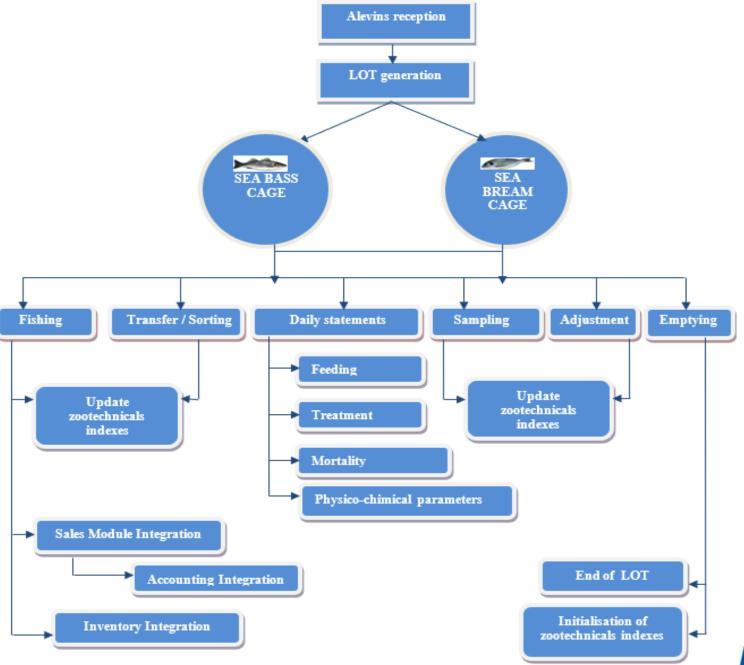
- Number: Initial Mortality + Transfers (+/-) + Regulation (+)
- AW: Last sampling Average Weight
- BIOM: Number * AW (last sampling) / 1000
- I.C.: ∑ Food consumed / (ΔBIOM Mortality BIOM BIOM Trans (+))
- Ration Rate: Σ Food consumed / average (BIOM) * 100 / ΔΤ
- **Growth Rate:** ΔAW * 100 / AWt 1
- Daily Mortality Rate: Dead fish / Total numbers * 100



Fish Farming Business Process

The fish farming business process involves several key stages, from initial seeding to final fishing. Each stage is meticulously managed and tracked within the system to ensure optimal growth and efficiency.

The business process in a macroscopic way presentation is as follows:



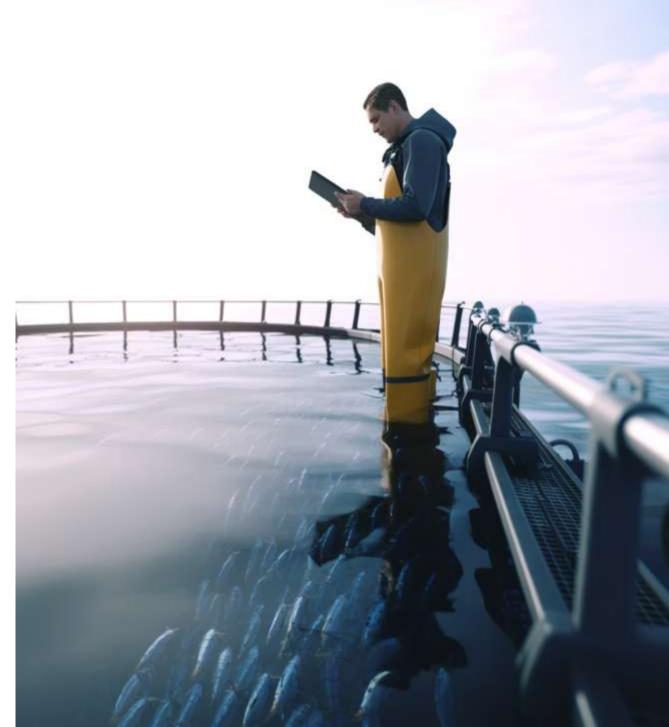


Zootechnical Formulas

Formulas for an Empty Cage:

- Number: Initial number mortality + Trans (+) Trans (-) Fishing + Regulation (+)
- AW: Fishing AW
- BIOM: Number sin * AW (Fishing) / 1000
- I.C.: ∑ Food consumed / (Δ BIOM + BIOM mortality + BIOM Trans (+))
- Ration Rate: ∑ Food consumed / average (BIOM) * 100 / ΔT
- Growth Rate: Δ (AW fishing AWi) * 100 / AW of the last sampling
- Mortality Rate: \sum of the mortality rates of the period.

These formulas provide critical insights into the performance of each cage and the overall farm, allowing for precise management and decision-making.

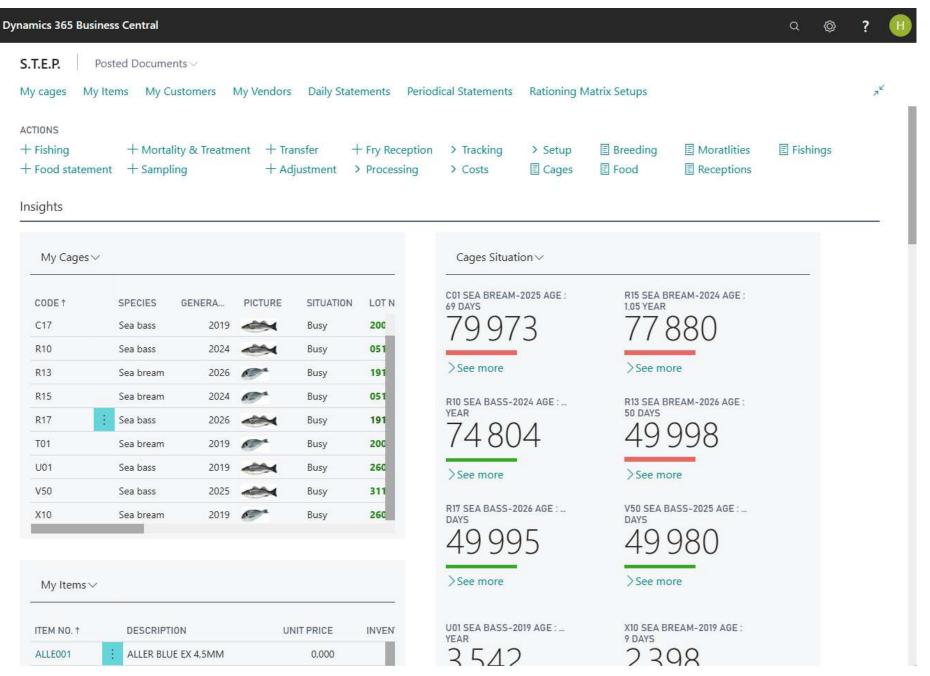


Solution Interface: Cage Management Dashboard

The main Role Center of **NaviFish** in Microsoft Business Central 365 provides a comprehensive dashboard for cage managers. This customizable interface displays essential data at a glance, including cage codes, species, generation, lot numbers, stock, average weight (AW), biomass (BIOM), and conversion index (IC).

We can see also, Items Feed and cages with real situation.

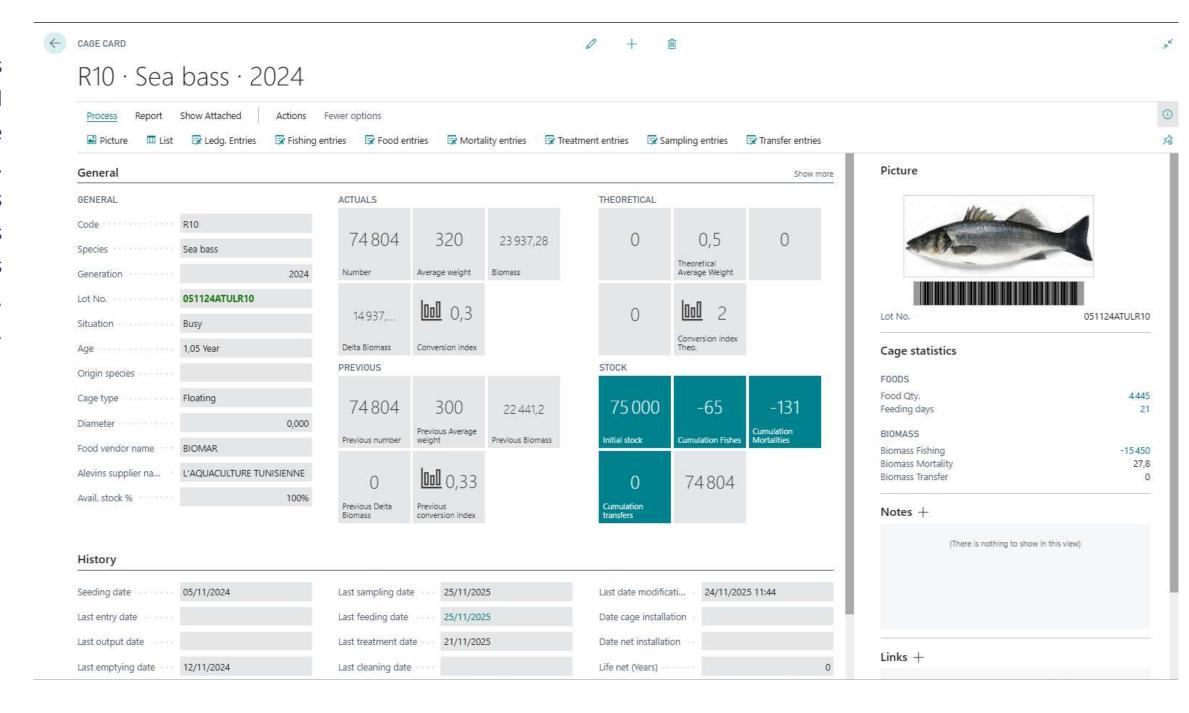
The system's ribbon offers quick access to daily and periodic operations such as fishing, feeding, mortality, sampling, and transfers. A reporting component allows for continuous monitoring of breeding cycles and growth phases.





Cage card:

Detailed information is available through individual cage cards, which include general and historical data. An overview chart visualizes cage performance, and users can print filtered reports based on species, generation, and cage situation (empty, full, made empty).





Cages situation:

GRAPHIC CAGES SITUATION

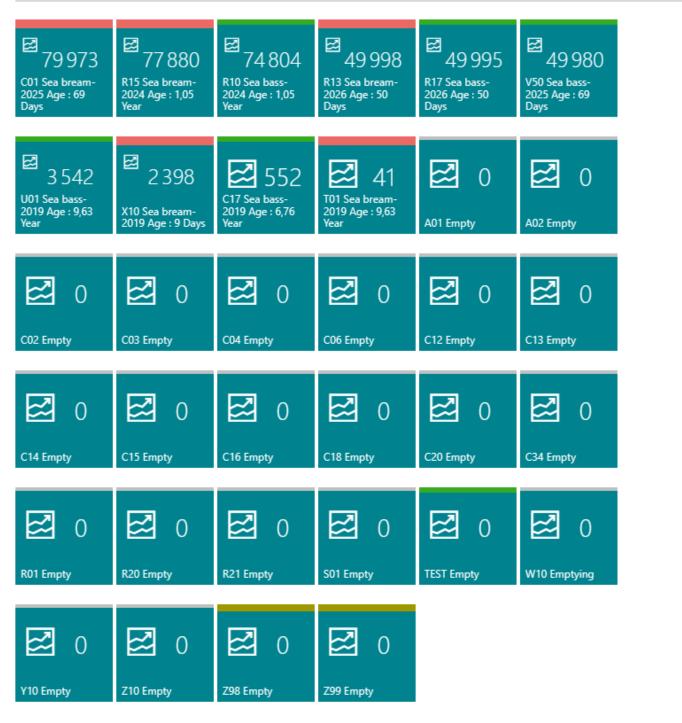


Overview chart of the cages,

Ability to print the cages with the desired filters, Specie, Generation, and Situation (Empty, Full, Made empty) ...

S.T.E.P. 24/11/2025 10:21 Graphic cages situation HOUCINE-MOBILE HOUCINE

0 AD1 → Empty	0 A02 → Empty	79973 C01 — > Sea bream- 2025 Age : 69 Days	0 C02→ Empty	0 C03 → Empty	0 C04→ Empty	0 C06→ Empty	0 C12→ Empty	8 C13→ Empty	0 C14> Empty	0 C15→ Empty	0 C16→ Empty	552 C17 → Sea bass-2019 Age: 6,76 Year
0 C18→ Empty	0 C20→ Empty	0 C34 → Empty	0 R01 -> Empty	> Sea bass-	49 998 R13 — > Sea bream- 2026 Age : 50 Days	> Sea bream-	49 995 R17 — > Sea basa- 2026 Age : 50 Days	0 R20 -> Empty	0 R21 → Empty	0 SO1→ Empty	41 T01 → Sea bream- 2019 Age : 9,63 Year	0 TEST → Empty
Sea bass-2019	49 980 V50 > Sea bass- 2025 Age : 69 Days	0 W10 ->	2398 X10> Sea bream- 2019 Age: 9 Days	0 Y10 -> Empty	0 Z40→ Empty	0 Z90 → Empty	0 Z99 → Empty					





Daily & Periodical Statements

Daily Statements

Daily statements cover essential actions like feeding, mortality collection, treatment application, and fishing. The system simplifies data processing for these routine tasks.

Feeding:

Users select cages to feed, and the system automatically calculates the rationing rate based on an integrated matrix. It suggests theoretical rations and appropriate food from available stock. Posting feeding data automatically deducts quantities from inventory.

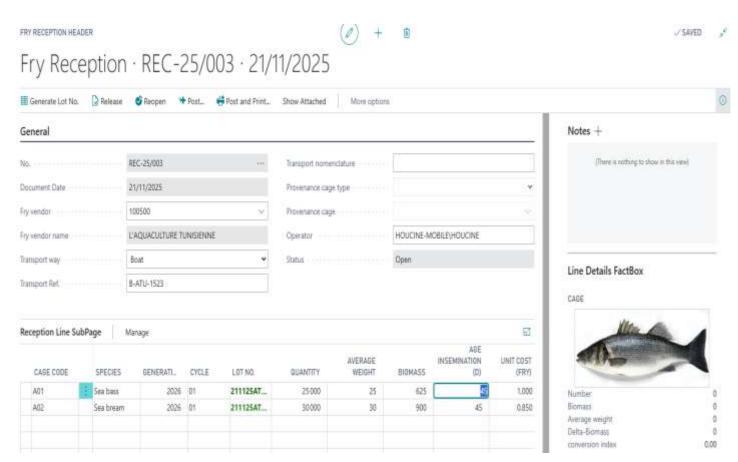
FOODING HEADER Fooding · REE25/0020 · 21/11/2025 🖹 Suggest cages... 🧗 Calculate Rations... 🖙 Fill in Food City... 🖟 Release 🗳 Reopen 🦘 Post... 😽 Post and Print... Show Attached Notes + General Show more There is nothing to show in this view! HOUGINE-MOBILE/HOUGINE 13 Fooding Line Subform Line Details FactBox CAGE CODE LOT NO. VENDOR BIOMASS RATIONING % CODE NAME F0001 LABEL FOOI 311025ATU., BIOMAR EFICO YM 8E C17 1.2 EFICO YM 8E 149 04 BIOM018 R10 051124ATU. BIOMAR 1.1 BIOM020 EFICO YM 85 R13 2026 Sea bream 191125ATU., BIOMAR 1,499,94 21 BIOM026 EFICO PLUS R15 2024 Sea breum 051124ATU., BIOMAR BIOM017 EFICO VM BE 2.02 149.04 2019 Sea bream 200219ATU., BIOMAR BIOM017 270 11.07 - 1 EFICO VM 86 -1.89260219ATU., 8IOMAR 1.2 2019 Sea bass BIOM014 EFICO YM 86 2025 Sea bass 311025ATU., BIOMAR EFICO YM BE 2019 Sea bream 260219ATU., BIOMAR BIOM017 EFICO YM 86

Periodical Statements

Periodic statements manage manipulations like sampling, cage emptying, maintenance, transfers, and fry reception.

Fry Reception:

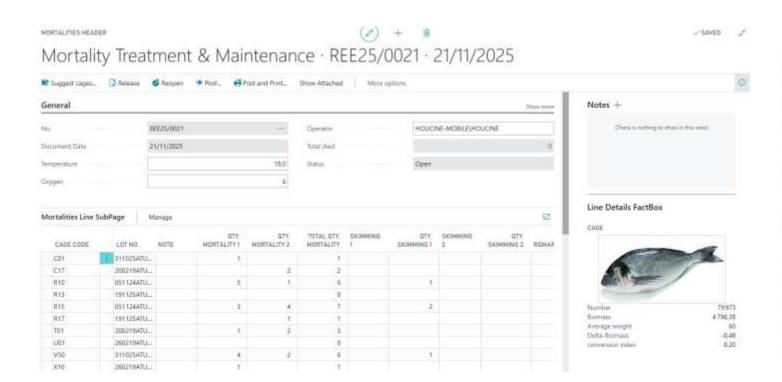
This marks the start of the breeding process, assigning a batch number to the population. Posting fry reception updates cage cards with initial zootechnical indexes (AW, BIOM, IC) and tracks age, stock, food consumption, and cumulative mortality.





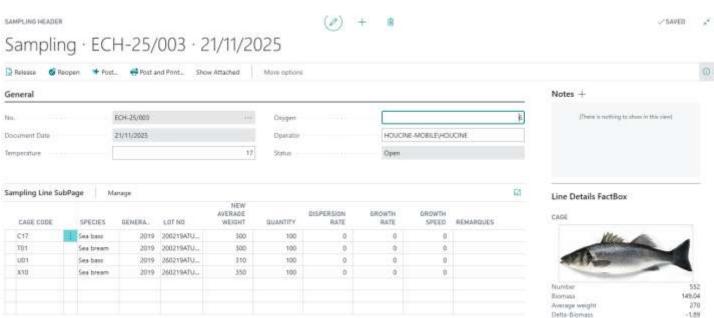
Mortality:

Users input cage mortality quantities and temperatures. A type of skimming (mortality reason) can be specified for each line, such as detected pathology. Posting mortality automatically updates the number of fish on the cage card, while preserving previous zootechnical values.



Sampling:

Sampling is crucial for determining the average weight of cages. The new average weight replaces the old one on the cage card after posting, with previous values saved for historical tracking.





Fishing:

Fishing entries are based on biomass fished and the average weight of the population. The system detects the quantity in kilograms and the appropriate item number for commercial sales, updating finished product stock for delivery.

FISHING JOU	IRNAL	LLINE												✓ SAVE) 74
Batch Name							ALIN	ISTK							
Manage	Prox	cess Functi	ons Line	Open in Exc	cel Acti	ons Naviga	te Fewerop	tions							₹ 0
→ Post	F P	Post and Print	→ Label												龙
ENTRY TYPE		POSTING DATE	CAGE CODE	SPECIES	GENERA	N° DE LOT	CUSTOMER NO.	CUSTOMER NAME	POIDS MOYEN	BIOMASSE	NOMBRE	QUANTITY	UNIT OF MEASURE CODE	ITEM NO.	DESCRIPTION
Fishing	1	21/11/2025	U01	Sea bass	2019	260219AT	21004	MONTREAL INTERNATION	300	30000	100	30	KG	LP	LOUP DE MER F
Fishing		21/11/2025	X10	Sea bream	2019	260219AT	21004	MONTREAL INTERNATION	330	33 000	100	33	KG	DM	DAURADE ROYA
Fishing		21/11/2025	C17	Sea bass	2019	200219AT	21004	MONTREAL INTERNATION	250	10000	40	10	KG	LP	LOUP DE MER F

Emptying:

Emptying cages initializes all cage data, marking the end of a fish population lot or a production cycle. This function is accessible from the home ribbon and resets all values, indicating an empty cage status.

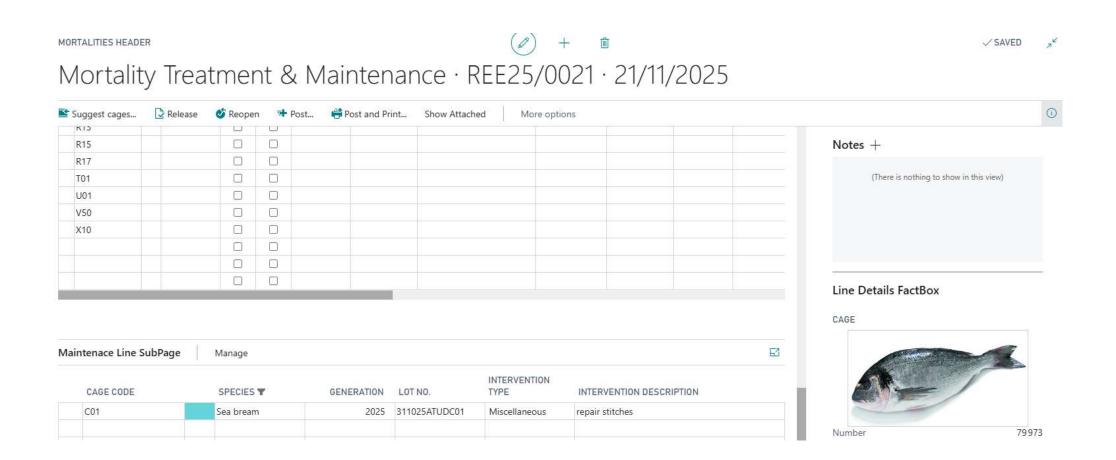
EDIT - EMPTYING CAGES		Z
Cage code · · · · · · · · · · · · · · · · · · ·	T01	~
Species · · · · · · · · · · · · · · · · · · ·	Sea bream	
Generation · · · · · · · · · · · · · · · · · · ·		2019
Emptying date · · · · · · · · · · · · · · · · · · ·	21/11/2025	iii
Emptying reason · · · · · · · ·	Tail of Lot	~
Emptying Description	Tailed Lot	
14/	ent will reset the cage !	

Schedule	ОК	Cancel
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Maintenance:

Maintenance tracking records all actions performed on cages and nets, enabling traceability of interventions and planning for future actions like net changes or cleaning.



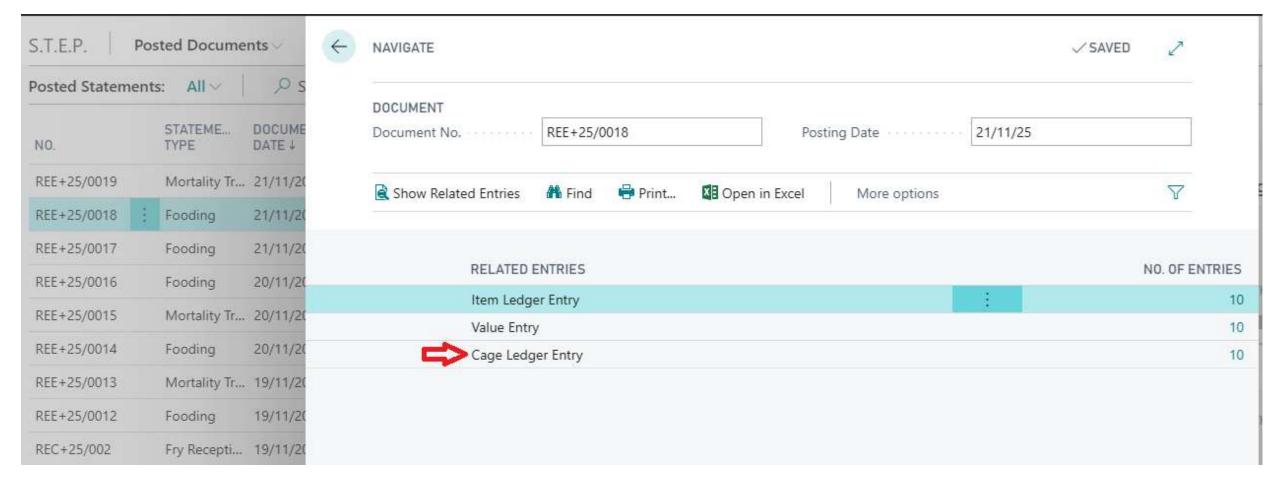


Total Integration & Sales Business Process

The Cage Management Module is fully integrated with Microsoft Business Central 365's core ERP, encompassing inventory, sales, purchases, and the General Ledger. This ensures seamless data flow and comprehensive financial tracking.

Grafted to the core of the ERP, cages Management Module is totally integrated to inventory, sales, purchases and therefore to the General Ledger.

By using a food statement, we can see the interaction with stocks following the Posting of consumption of food.





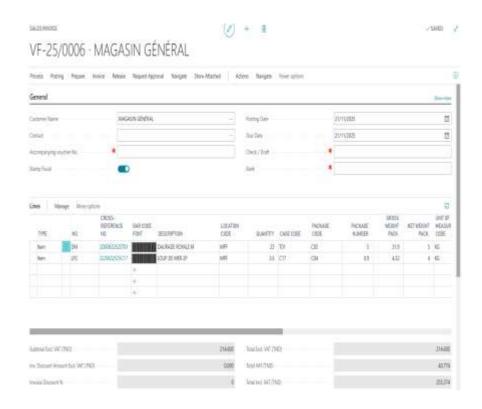
Sales Business Process

The sales module interacts directly with the technical fish farming module, ensuring complete traceability. For each customer and delivery, the system identifies the specific Lot No. of fish delivered, enabling backward and forward traceability for claims or incidents.

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Local Sales

Invoicing processes are streamlined, with automatic stock adjustments and accounting entries upon posting. Final invoices and delivery documents can be generated.



Export Sales

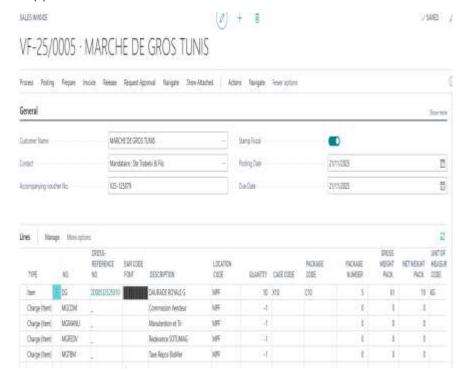
Export sales are managed in foreign currencies, with automatic exchange rate conversions. The system generates barcodes per parcel and packing lists. Invoices are accounted for in the foreign currency and converted to local currency for accounting purposes.





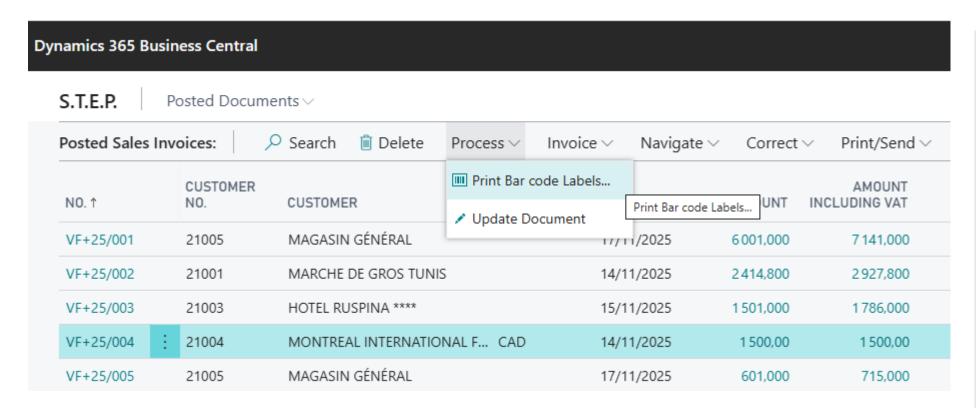
Wholesale Market

A specialized process for the Tunisian wholesale market handles orders, shipments, payments, and invoicing. Wholesale market fees are automatically applied, and payment methods are managed according to customer settings. Credit sales are also supported.





Barcode management for each package is supported for both export and local sales. The system also handles specific requirements for wholesale markets, including cost generation per billing and automatic packing list management.



1L00231825R10 MONTREAL INTERNATIONAL FISH DLC / use by : 1L00231825R10



Supply Process & Rearing Cost

The supply process integrates purchases of fry, food, treatments, cages, and nets. Food procurement is the most frequent transaction, managed through a two-step process: reception and billing.

Food stock is automatically adjusted upon validation of receipt. Invoices are recorded in the vendor's currency and converted to local currency for the General Ledger.

Rearing Cost (Production)

A key feature for farmers is the detailed costing of their lots, available with a single click. This includes costs for fry reception, consumed food and treatments, acquisition of cages and nets, personnel, and various other expenses.

The system calculates unit costs per kilogram and per piece for each production lot and cage, providing comprehensive financial insights.

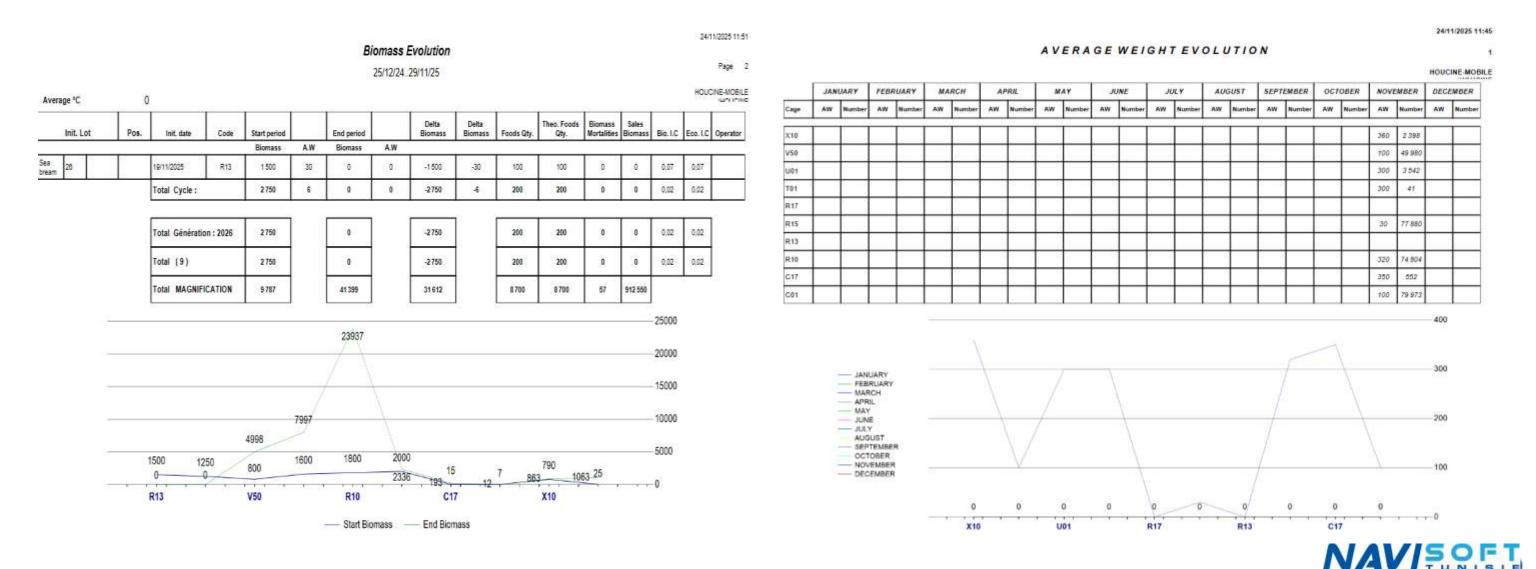
∠ Search ■ □	Recalculate	Show Attached	Open in Excel	More option	ns							7 ≣	
CAGE CODE	GENERA	LOT NO.↓	PRODUCTION	FRY COST	FEEDING COST	TREATMENT COST	CAGE & NET COST	STAFF COST	VARIOUS COST	TOTAL PRODUCTION COST	UNIT COST (PIECE)	UNIT COST (KG)	
Z10	2017	110417AT	29 970	13 500,000	0,000	0,000	0,000	0,000	0,000	13 500,000	0,450	45,045	
Y10	2017	110417AT	24939	12 500,000	0,000	0,000	0,000	0,000	0,000	12 500,000	0,501	100,245	
Y10	2016	070416AT	499850	350 000,000	0,000	0,000	0,000	0,000	0,000	350 000,000	0,700	17,505	
X10	2019	260219AT	2398	0,000	505,350	0,000	0,000	0,000	-1 600,000	2 105,350	0,878	2,744	
X10	2017	110417AT	29939	13 500,000	0,000	0,000	0,000	0,000	0,000	13 500,000	0,451	45,092	
W10	2019	260219AT	3 626	1800,000	1 154,800	25,710	0,000	0,000	0,000	2 980,510	0,822	2,740	
W10	2016	050416AT	249 967	175 000,000	13 206,850	38,565	0,000	0,000	0,000	188 245,415	0,753	6,276	
V50	2025	311025AT	49 980	37 500,000	1 567,300	0,000	0,000	0,000	0,000	39 067,300	0,782	9,771	
V50	2017	110417AT	24925	12 500,000	0,000	0,000	0,000	0,000	0,000	12 500,000	0,502	71,644	
V50	2016	110416AT	14900	10 500,000	2 195,961	0,000	0,000	0,000	0,000	12 695,961	0,852	7,409	
U01	2019	260219AT	3 542	2 250,000	1714,555	12,855	0,000	0,000	0,000	3 977,410	1,123	2,246	



Reporting

The reporting module offers relevant follow-up and performance indicators. Reports such as Fry Reception, Cage Card, Cages State, and evolution charts for Average Weight, Biomass, and Growth are available.

All reports are exportable to PDF, Excel, and Word, facilitating easy sharing and analysis. Dashboards, configurable by the user, provide real-time insights into key performance metrics.



A traceability report by cage and by Lot number is to edit summary of breeding in terms of traceability of origin, feeding and treatment.

Traceability is a population, with mortality data, production, sale, feeding, treatment, and movements.

In addition to the report, a historical Lot No. is now available, to mark the date of seeding and recapitulate feeding, mortality, fishing by cage and Lot No.

Status of the cage shows if the lot has been finished and on what date.

LOTS HISTORY									*
Manage ਉ Open in E	coel								7 0
						CUMULATION			
CAGE CODE	LOT NO.	SPECIES	GENERATION	STATUS	CUMULATION FISHES	MORTALITIES	FOOD GTY.	SEEDING DATE	EMPTYING DA
COT	210417ATULC01	Sea bass	2017	Refined	0	-22	375	21/04/2017	31/12/2024
C01	311025ATUDC01	Sea bream	2025	In progress	0	-27	925	31/10/2025	8
C02	210417ATUDC02	Sea bream	2017	Refined	0	-33	375	21/04/2017	2
C03	260417ATULC03	See bass	2017	Refined	0	-76	925	26/04/2017	-
C04	150715ATULC4	Sea bass	2015	Refined	0	-365	26845	08/03/2016	-
C06	250715ATULC6	Sea bass	2015	Refined	0	-346	15210	08/03/2016	-
C12	260417ATUDC12	Sea bream	2017	Refined	0	-20	1150	26/04/2017	
C17	200219ATULC17	Sea bass	2019	In progress	-1405	-43	600	20/02/2019	
C18	090715ATULC18	Sea bass	2015	Refined	0	-201	19425	08/03/2016	-
C20	020815ATUDC20	Sea breum	2015	Refined	0	-107	22 675	08/03/2016	
C34	020815ATUDC34	Sea bream	2015	Refined	0	-97	3945	08/03/2016	08/04/2016
C34	270416ATULC34	Sea bass	2016	Refined	0	-89	1955	27/04/2016	
ROT	030715ATUDR1	Sea bream	2015	Refined	0	-274	30 509	08/03/2016	2
R10	051124ATULR10	See bass	2024	In progress	-65	-131	4445	05/11/2024	2
R13	110815ATUDR13	Sea bream	2015	In progress	0	-155	22740	08/03/2016	2
R13	191125ATUDR13	Sea bream	2026	In progress	0	-2	100	19/11/2025	52
R15	051124ATUDR15	Sea bream	2024	In progress	-2065	-55	4205	05/11/2024	-
R17	180815ATUDR17	Sea bream	2015	In progress	0	-145	17665	08/03/2016	
R17	191125ATULR17	Sea bass	2026	In progress	0	-5	100	19/11/2025	-
R20	060815ATUDR20	Sea bream	2015	Refined	0	-194	23730	08/03/2016	-
R21	050416ATUDR21	Sea bream	2015	Refined	0	-105	450	08/03/2016	09/04/2016
R21	270416ATUDR21	Sea bream	2016	Refined	0	-104	3050	27/04/2016	-
501	110416ATUDS01	Sea bream	2016	Refined	0	-90	2950	11/04/2016	_

TRACEABILITY REPORT

24/11/2025 12:05

HOUCINE-MOBILE

20/02/19..24/11/25

INFORMATIONS

Lot: C17Sea bass01-2019
Band: Sea bass01-2019
Lot No. 200219ATULC17
Cage: C17
Vendor: Hatchery
Arived on: 20/02/2019

Population :	552	552	
AW (g):	225	225	
Blomass (Kg) :	124,2	124,2	
Laying date :			

M ORTALITY - SKIMMING

	Mullipal	Diviliass (Ng)	mortality rate	Survivariate	
Mortality	-43	5,23	7,79	92,21	
Nodaviros	0	0	0	100	
Asphyxla	0	0	0	100	
Vibriosis	0	0	0	100	
Cryp	0	0	0	100	
Past	0	0	0	100	
Lympho	0	0	0	100	
Photobac	0	0	0	100	
Myxospor	0	0	0	100	
	40	5.00	7.70		

 Sale:
 273,35

 Production:
 149,31

 Index conversion:
 11,58

FOODING

Food	Start date	End date	Lot No.	Quantity (Kg)
EFICO YM 868 N* 4.5	12/11/2024	18/11/2024	\$79580	1318,905
EFICO YM 868 N* 4.5	13/11/2025	21/11/2025	BIO14-123456	300
INICIO N°1.5 mm	26/02/2019	12/11/2024	123456	110,76

TREATMENTS

Treatment	nt Start date		Lot No.	Quantity (Kg)
Vitamine B1	12/11/2024	12/11/2024	123456	15,98
Vitamine C	12/11/2024	12/11/2024	789456	15,96
			TOTAL	31.92

MOUVEMENTS

Type - Date - Bande	Origin cage	NBR	BIOM	AW	Provenance	Destination
INT 20/02/2019 Sea bass012019	C17	2000	15	0		Sea bass012019
FIS 15/11/2025 Sea bass012019	C17	-50	0	0		Sea bass012019
FIS 15/11/2025 Sea bass012019	C17	-10	0	0		Sea bass012019
FIS 15/11/2025 Sea bass012019	C17	-20	0	0		Sea bass012019
FIS 15/11/2025 Sea bass012019	C17	-200	0	0		Sea bass012019
FIS 15/11/2025 Sea bass012019	C17	-20	0	0		Sea bass012019
FIS 15/11/2025 Sea bass012019	C17	-25	0	0		Sea bass012019
FIS 15/11/2025 Sea bass012019	C17	-50	0	0		Sea bass012019
FIS 17/11/2025 Sea bass012019	C17	-1000	0	0		Sea bass012019
FIS 18/11/2025 Sea bass012019	C17	-30	0	0		Sea bass012019



Settings, Traceability & Accessibility

Settings

The settings module allows for flexible parameter definition, including document series numbers, archiving options, default stores, and formulas for fish lot populations. A crucial component is the rationing matrix, which automatically calculates daily rationing rates and food quantities per cage based on seawater temperature, species, and average weight.

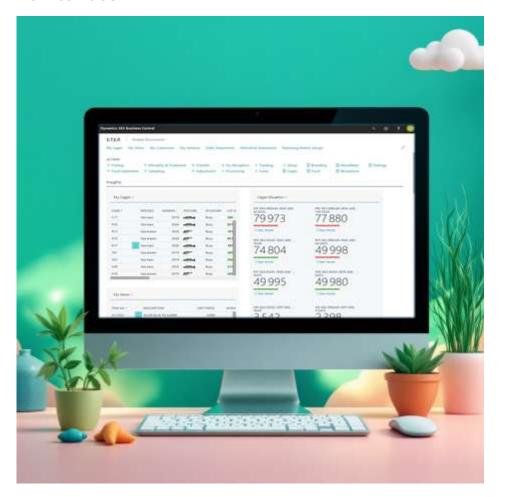
Traceability

A comprehensive traceability report by cage and lot number provides a summary of breeding, including origin, feeding, treatment, and movements. This historical data ensures full traceability from seeding to final disposition, crucial for quality control and incident management.

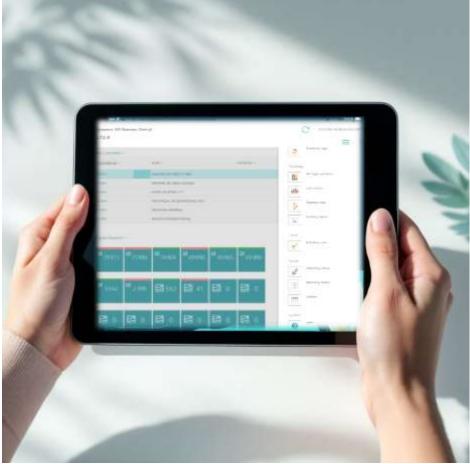
Accessibility Web & Mobile

Microsoft Business Central 365 is accessible via its Windows Client, web browsers (IE, Chrome, Edge, Firefox) on PC, and dedicated applications for tablets and Android smartphones. This multi-platform accessibility ensures real-time data availability and dashboard access from anywhere.

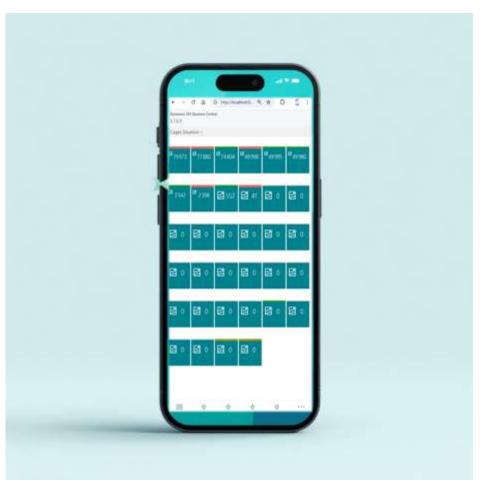
PC Interface



Tablet Interface



Smartphone Interface





Thanks



Intégration de solutions ERP



A Platform for the Future

navisoft.tn/en

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