


An economic analysis of the «blue crab» damages in shellfish farms in the Veneto Region

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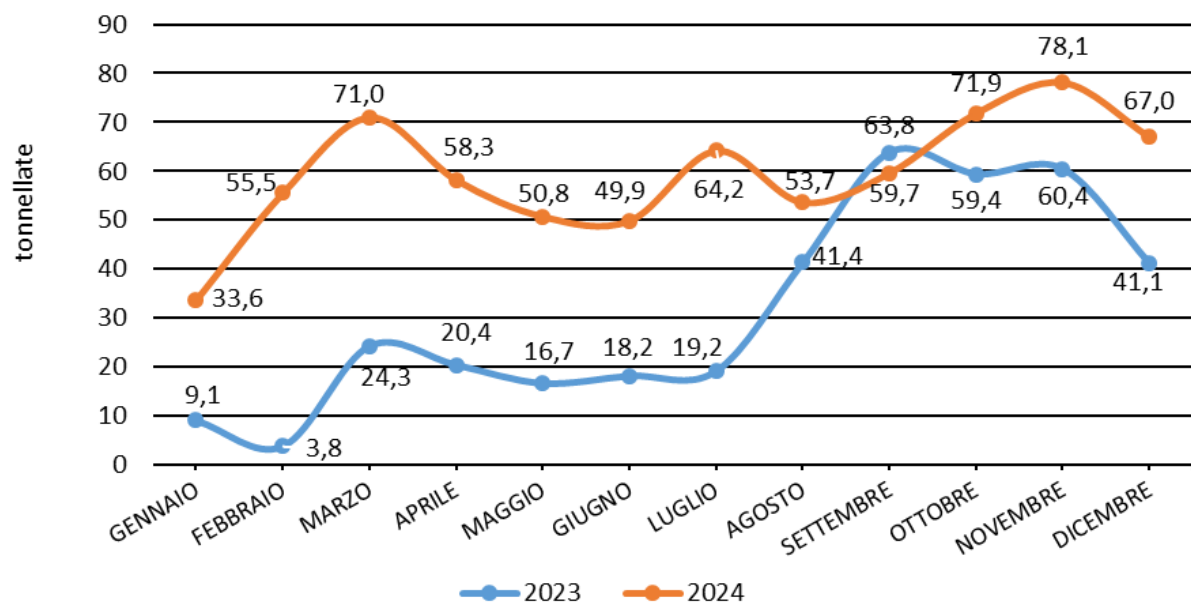


A photograph of a blue crab on a sandy beach. The crab is the central focus, showing its characteristic blue and yellowish-green coloration. Its large claws are prominent at the bottom. In the background, a blue and white striped towel is partially visible on the sand. The overall scene is brightly lit, suggesting a sunny day at the beach.

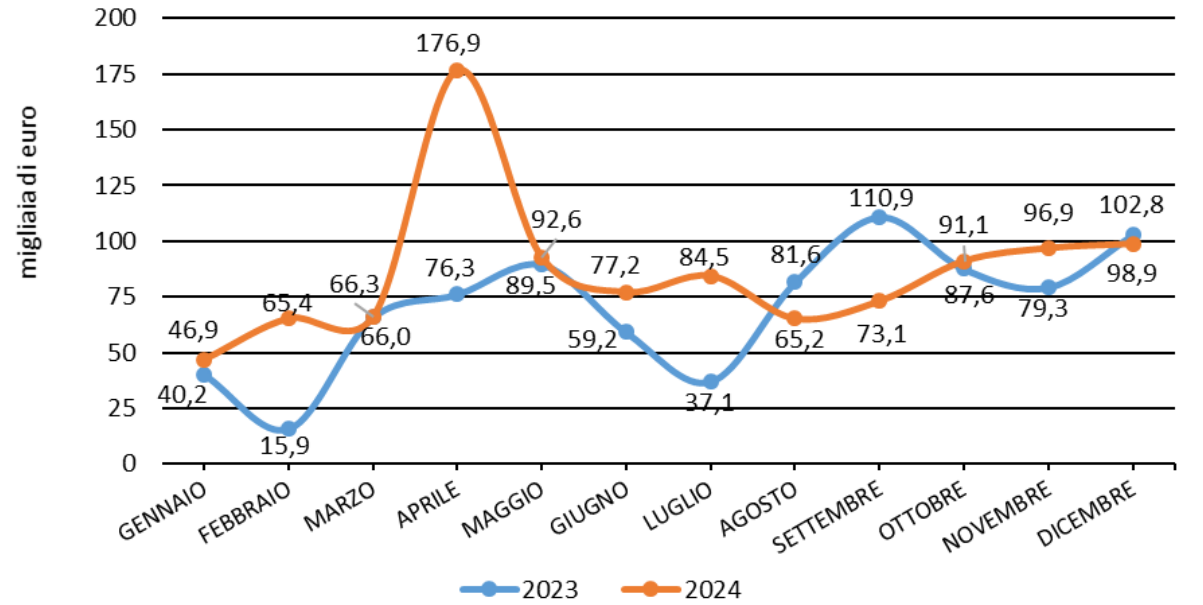
**The “blue crab” in Veneto: a
synthetic view**

The catch

Local Blue crab (volumes)

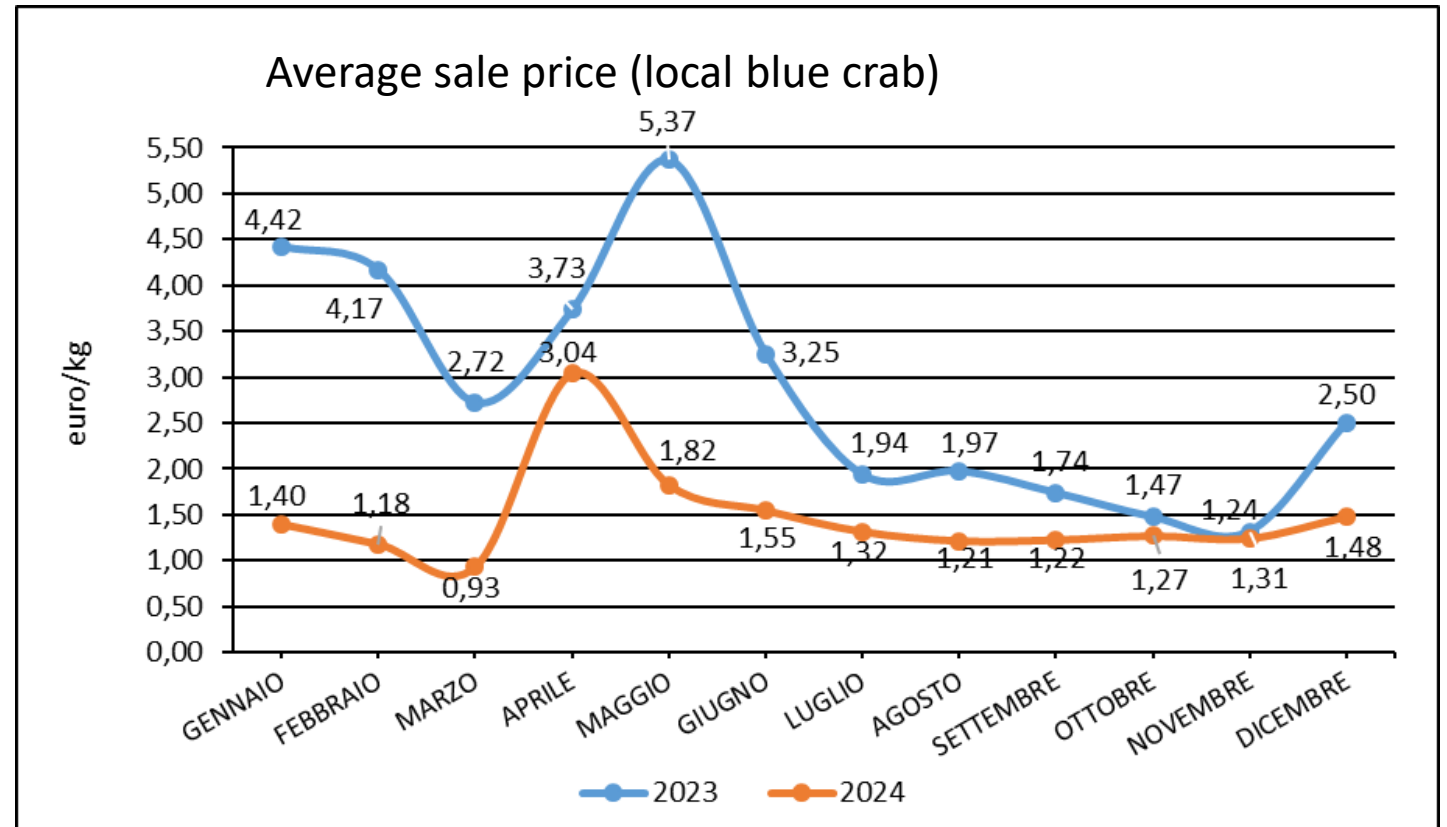


Blue crab sales (value)



Average sale prices

	2023	2024	variazione 2024/2023
	€/kg	€/kg	
GENNAIO	4,42	1,40	-68,4%
FEBBRAIO	4,17	1,18	-71,7%
MARZO	2,72	0,93	-65,7%
APRILE	3,73	3,04	-18,7%
MAGGIO	5,37	1,82	-66,0%
GIUGNO	3,25	1,55	-52,5%
LUGLIO	1,94	1,32	-32,1%
AGOSTO	1,97	1,21	-38,4%
SETTEMBRE	1,74	1,22	-29,5%
OTTOBRE	1,47	1,27	-14,0%
NOVEMBRE	1,31	1,24	-5,6%
DICEMBRE	2,50	1,48	-40,9%
MEDIO AN.	2,24	1,45	-35,3%



Data on disposal

The volume that was disposed of in 2024 was **1.180 tons**, with a total value close to **700 thousand Euros**, **0.59€/Kg**



Objectives of the study

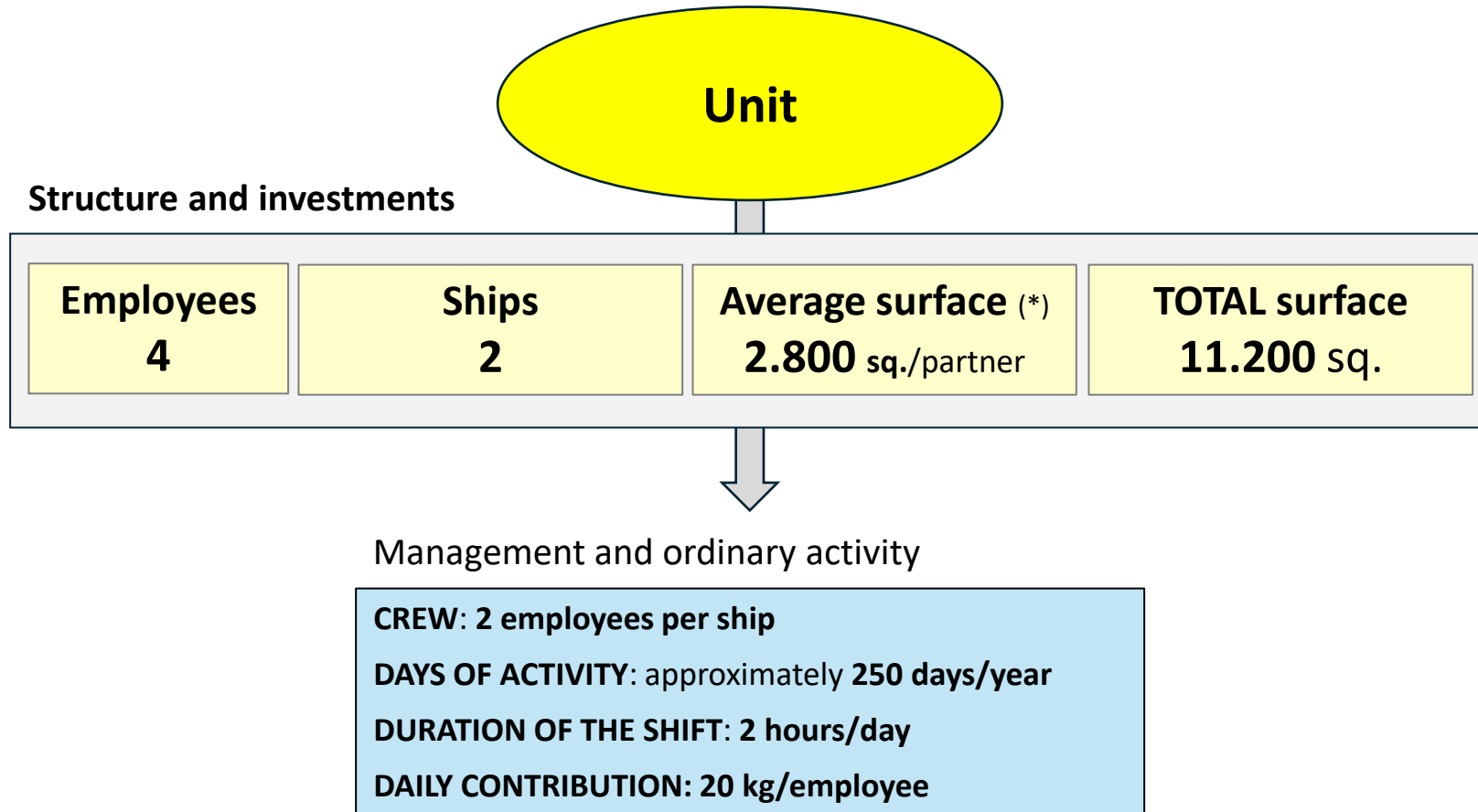
- Performing an economic analysis of the different typologies of farming
- Producing an estimate of the opportunity costs for labourers in family firm
- Carrying out a simulation of different scenarios in the medium term that consider social implications of the current crisis



The case of Sacca di Scardovari

Characteristics	Parameter	Value
Cooperatives	number	14
Total members in the area	number	1,450
Average members per cooperative	number	104
Size range of cooperatives	number	from 40 to 300
Cooperative features		Company VAT ID
		Single-member
		4/5 workers
Total territorial surface	sq.m	4 millions
Average surface per cooperative	sq.m	571,428.57
Average surface per workers	sq.m	2,758.62
Area concession for aquaculture		Managed by Consorzio Cooperative Pescatori del Polesine O.P. S.C.Ar.L.

A typical unit



(*) The value is derived from the ratio between the total surface area of the Sacca di Scardovari (400 hectares) and the number of workers (1,450).

Methodological approach

Analysis of the Unit



Relative weight of the Unit on the District of Scardovari



Damages: scenarios on the District of Scardovari

Unit

- Capital required to start the activity
- Evaluation of the profitability of the unit
- Estimation of the value of the labor contributed by employees
- Opportunity cost of labour and of the loss of income from farming operations

Unit

District of
Scardovari

= **quota %**

(employees and
farming area)

Value of the socio-
economic
indicators of the
District

*

Growing
damage levels
From 0 to 100%

Unit

Quota%

Imputed costs and opportunity costs for labour

Imputed costs are those that are generated when a firm uses goods, services and resources that are not formally registered in accounting records (e.g. Family labour)

If the worker is forced to change his or her area of activity and professional specialization, the value of retribution needs to be considered as an **opportunity cost** due to the effort needed to find a new employment given the knowledge, competences and experiences he/she accumulated in the past

Profitability indexes

	Indicator:	Value (€/year)	Value (€/kg)
	= EBITDA – Gross Operating Margin(GOM):	53,408.62	2.67
	= EBIT – Net Operating Margin (NOM):	48,125.29	2.41
	= EBT Earnings Before Taxes:	33,460.50	1.67
	= Net Profit:	32,958.78	1.65

	Indicator:	Value (€/year)	Value (€/kg)
	- Labour income net of social charges:	26,000.00	1.30
	- Labour and entrepreneurial income:	58,958.78	2.95
	- labour, entrepreneurial and capital income:	64,242.11	3.21

Opportunity cost per employee (euro/month) = 1,338 euro

The economic and social impacts on the area

A) Opportunity Cost of Labor

Indicators and Criteria	Parameter	Value
Opportunity cost of labour per worker	(€/month)	1,338.38
Opportunity cost of labour per worker	(€/year)	16,060.53
Number of workers in the Consortium	(number)	1,450.00
Total annual opportunity cost of labour	(€/year)	23,287,764.63
Duration of »blue crab« invasion effects	(years)	4
Total opportunity cost of labour for the Consortium	(€)	93,151,058.50

B) District Business Profit

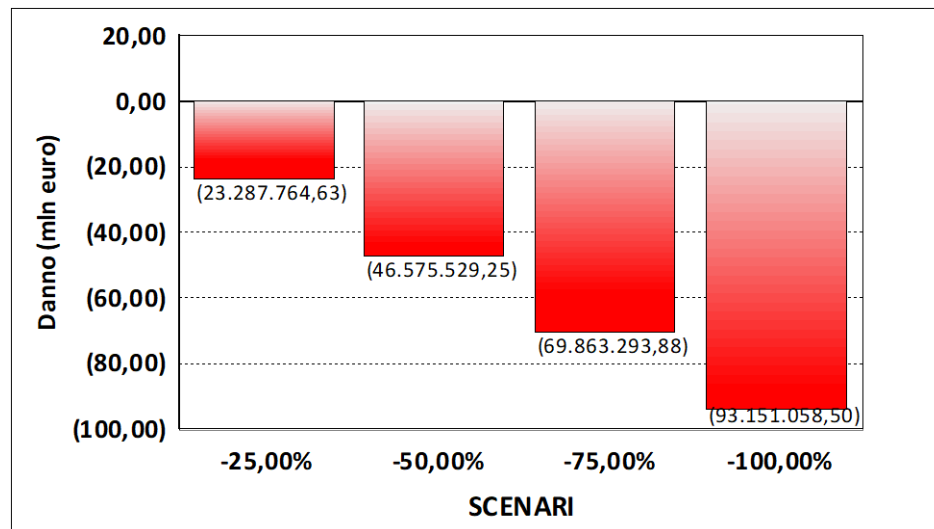
Indicators and Criteria	Parameter	Value
Annual business profit	(€/year)	32,958.78
Enterprises in relation to the structure of the operational unit	(number)	362.50
Consortium management profit	(€/year)	11,947,556.29
Duration of the effects of the "blue crab" invasion	(years)	4
Total business profit of the District	(€)	47,790,225.17

C) Capital Invested for Annual Management

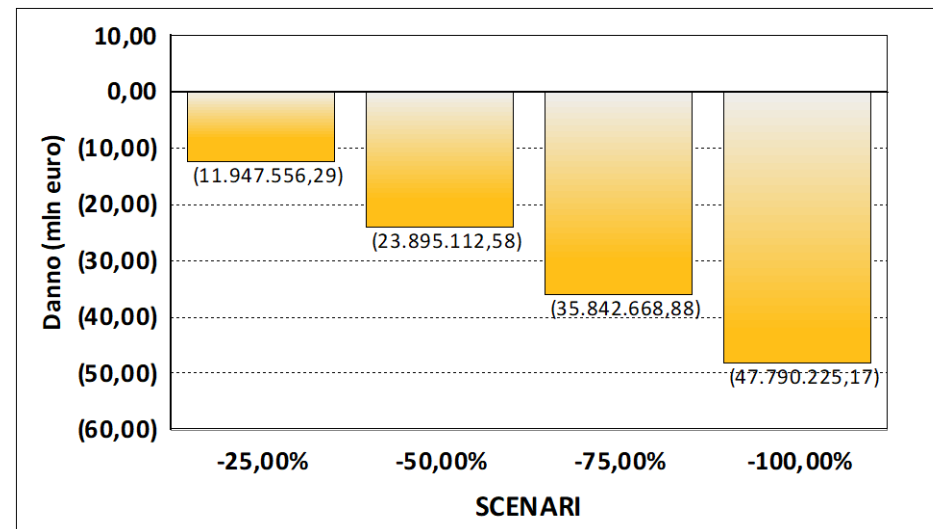
Indicators and Criteria	Parameter	Value
Capital invested per operational unit	(€)	102,000
Enterprises in relation to the structure of the operational unit	(number)	362.50
Total capital invested in the Consortium	(€)	36,975,000

Damage: scenarios

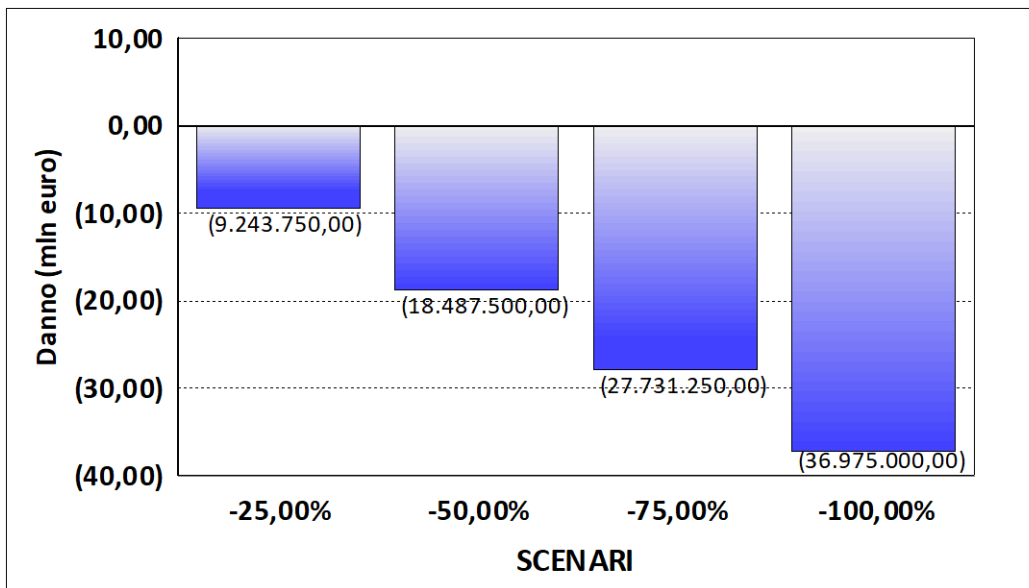
Damage scenarios considering opportunity cost/total of labour



Damage scenarios considering total profits of the firms



Damage scenarios considering the total of invested capital



Conclusions

Evaluations of more effective structures and means of protection when the cost/benefits ratio is considered

Understanding how to extract value from the blue crab through the production of (e.g.) alternative energy through fermentation, through the production of animal feed, through the synthesis of materials resulting from the processing of the crab

Investments in the production of seed in hatchery and pre-fattening phases in protected areas

Diversification of production and revenue streams

Training of younger workers to reconfigure the shellfish farming sector and the definition of novel, multifunctional business models.