

Assessing the Economic Viability of Organic Amendment Production as an Innovative Bio-Based Fertiliser

Main results / outcomes

The analysis considers production plants of varying capacities (800t fish, 2000t fish, and 5000t fish), showing that plant size and product output quantity significantly influence profitability and pricing. The case assumes that the raw material (fish waste) is supplied internally, eliminating purchase costs. Profitability is assessed by including all production-related expenses, and calculations are performed both with and without cost savings from avoided waste management. These financial evaluations help determine the feasibility of profit generation through organic amendment production.

Practical recommendations

Larger processing plants (e.g., 2000t or 5000t fish capacities) are more likely to achieve economic sustainability. Users should consider scaling operations where feasible to optimize profitability. Utilizing internally generated fish waste eliminates raw material purchase costs, significantly improving the economic viability of the business model. When assessing profitability, all operational, equipment, and plant costs must be included to get a realistic picture of financial performance, especially when using the cost method.

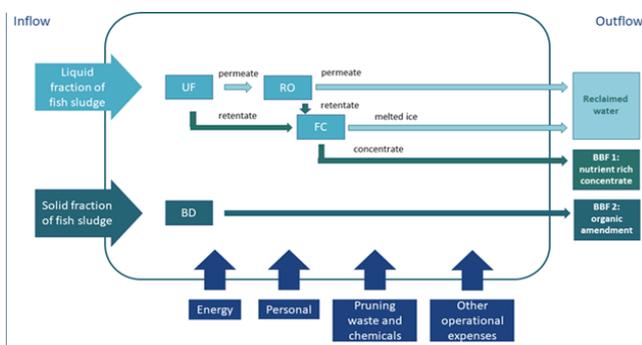


Figure 1. System boundaries considered in LCC model

Organic amendment (OA)	Nutrient price method			Cost method		
	Net profit (EBIT)	Payback period (PP)	PRICE	Net profit (EBIT)	Payback period (PP)	PRICE
Norway						
1504 t savings included	4.056,17	44,75 years	43,48 eur/t	22.244,26	8,16 years	74 eur/t
1504 t savings NOT included	-41.063,83	-4,42 years	43,48 eur/t	-22.875,74	-7,93 years	74 eur/t
3760 t savings included	36.976,68	9,48 years	43,48 eur/t	43.710,85	8,02 years	48 eur/t
3760 t savings NOT included	-75.823,32	-4,62 years	43,48 eur/t	-69.089,15	-5,07 years	48 eur/t
9400 t savings included	125.362,60	6,04 years	43,48 eur/t	86.328,16	8,78 years	33 eur/t
9400 t savings NOT included	-156.637,40	-4,84 years	43,48 eur/t	-195.671,84	-3,87 years	33 eur/t
Italy						
1504 t savings included	9.722,18	18,67 years	43,48 eur/t	22.546,81	8,05 years	65 eur/t
1504 t savings NOT included	-35.397,82	-5,13 years	43,48 eur/t	-22.573,19	-8,04 years	65 eur/t
3760 t savings included	50.886,89	6,89 years	43,48 eur/t	42.722,46	8,20 years	38 eur/t
3760 t savings NOT included	-61.913,11	-5,66 years	43,48 eur/t	-70.077,54	-5,00 years	38 eur/t
9400 t savings included	160.961,85	4,71 years	43,48 eur/t	92.130,13	8,22 years	25 eur/t
9400 t savings NOT included	-121.038,15	-6,26 years	43,48 eur/t	-189.869,87	-3,99 years	25 eur/t

Figure 2. Summarized the main financial results for organic amendment production

Further information

SEA2LAND project website - <https://sea2landproject.eu/>

About this abstract

Authors: IPS Konzalting d.o.o. za poslovne usluge

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SEA2LAND project is a collaborative Innovation Action (IA) funded by the EU in the frame of the Horizon 2020 programme. The project aims to provide solutions to help overcome challenges related to food production, climate change and waste reuse. Based on the circular economy model, SEA2LAND promotes the production of large-scale fertilisers in the EU from own raw materials. This solution is expected to reduce the soil nutrient imbalance in Europe. The project is running from January 2021 to June 2025.

Website: www.sea2landproject.eu



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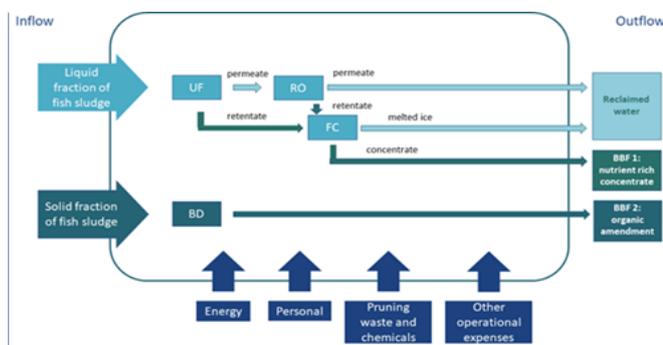
Procjena ekonomske isplativosti proizvodnje organskih poboljšivača kao inovativnog biognojiva

Glavni rezultati/ishodi

Analiza razmatra proizvodne pogone proizvodnje organskih poboljšivača tla različitih kapaciteta (800t ribe, 2000t ribe i 5000t ribe), pokazujući da veličina pogona i količina proizvedenih proizvoda značajno utječu na profitabilnost i cijene. Slučaj pretpostavlja da se ulazna sirovina (riblji otpad) dobavlja interno, čime se eliminiraju troškovi nabave. Profitabilnost se procjenjuje uključivanjem svih troškova vezanih uz proizvodnju, a izračuni se izvode sa i bez ušteda troškova od izbjegnutoh gospodarenja otpadom. Ove financijske procjene pomažu u određivanju ekonomske isplativosti prilikom proizvodnje organskih poboljšivača tla dobivenih iz ribljeg otpada..

Preporuke

Veći pogoni za preradu (npr. kapaciteta 2000t ili 5000t ribe) vjerojatnije će postići ekonomsku održivost proizvodnje. Potencijalni proizvođači bi trebali razmotriti opcije povećanja proizvodne količine kako bi optimizirali profitabilnost. Korištenje interno stvorenog ribljeg otpada eliminira troškove nabave sirovina, značajno poboljšavajući ekonomsku održivost poslovnog modela. Prilikom procjene profitabilnosti trebaju se uključiti svi operativni troškovi, troškovi opreme i pogona kako bi se dobila realna slika financijskog učinka, posebno kada se koristi troškovna metoda.



Slika 1. Proizvodna shema organskog poboljšivača

Organic amendment (OA)	Nutrient price method			Cost method		
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Slika 2. Sažeti glavni financijski rezultati za organske poboljšivače

Više informacija

SEA2LAND projektna stranica - <https://sea2landproject.eu/>

Opširnije o praktičnom sažetku

Autor: IPS Konzalting d.o.o. za poslovne usluge

Datum: Svibanj 2025

SEA2LAND projekt je suradnička inovacijska akcija (IA) koju financira EU u okviru programa Horizon 2020. Cilj projekta je pružiti rješenja koja će pomoći u prevladavanju izazova povezanih s proizvodnjom hrane, klimatskim promjenama i ponovnom uporabom otpada. Na temelju modela kružnog gospodarstva, SEA2LAND promiče proizvodnju velikih količina gnojiva u EU iz vlastitih sirovina. Očekuje se da će ovo rješenje smanjiti neravnotežu hranjivih tvari u tlu u Europi. Projekt traje od siječnja 2021. do lipnja 2025. godine. Web stranica: www.sea2landproject.eu



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