

FRAMO LIFTUP SLUDGE COLLECTION SYSTEM

From waste to value



**FRAMO**  
LiftUP  
Sustainable  
Technology



# The Framo LiftUP system is a game-changer for fjord-based aquaculture operations.

Key benefits:

- Reduced site environmental footprint
- Shorter fallowing periods
- Pellet collection and control – improved feed efficiency
- Possibility for larger smolt and higher site utilisation
- Ideal for low-oxygen and low-current sites

Norwegian-made Framo LiftUP Sludge Collection System has been developed in collaboration with local fish farmers and environmental organizations to tackle the challenge of sludge.

Together, Framo and Ragn-Sells offer a turnkey solution that captures, stores, and distributes this resource. The concentrated sludge is stored in tanks and transported to facilities where it can be converted into renewable energy and high-quality fertilizer.



# Protect the ocean, boost your production

Investing in a Framo LiftUP sludge system brings several advantages to your fish farm:

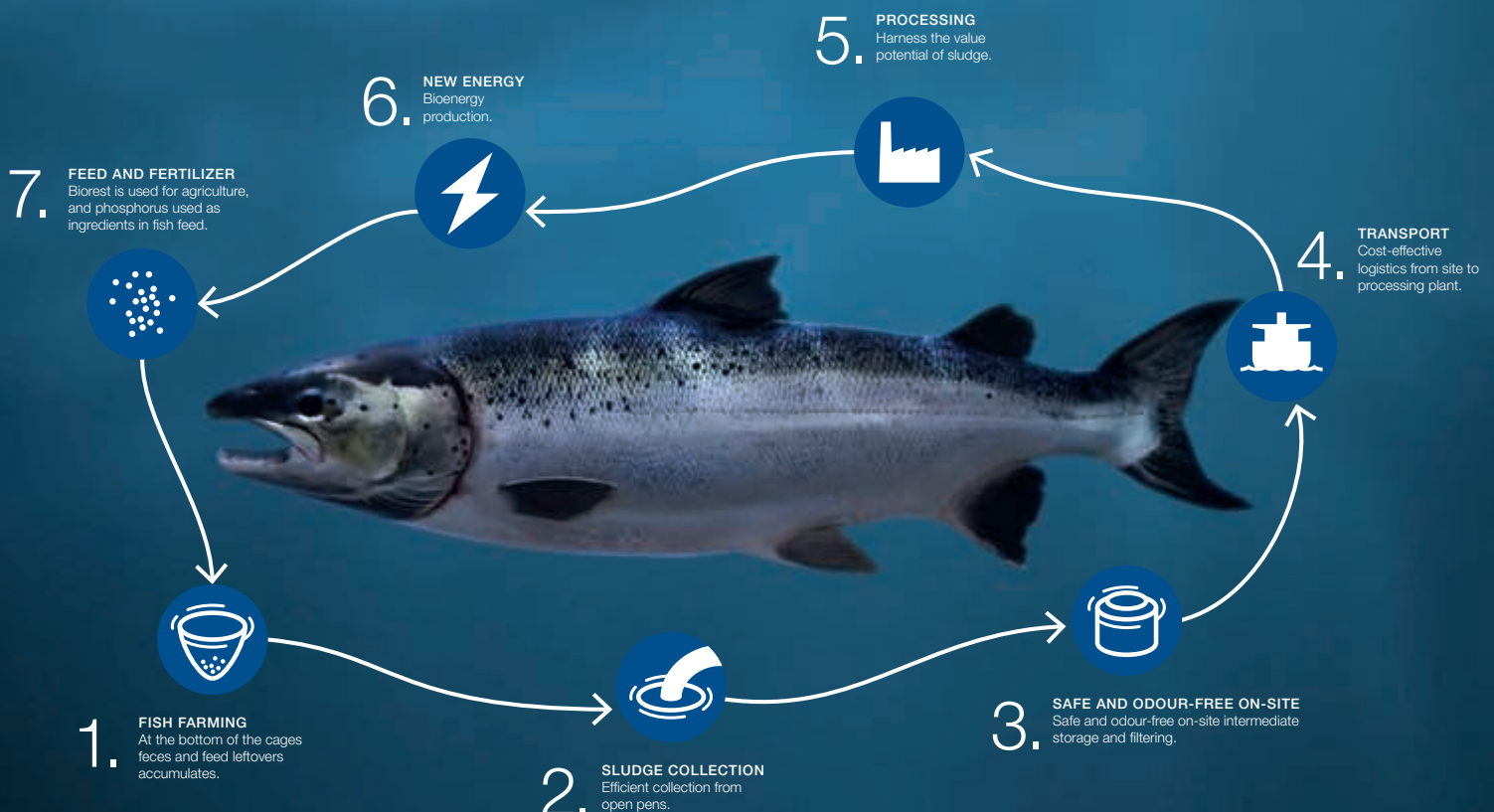
- Reduced environmental impact
- Shorter fallowing periods
- Improved feed efficiency
- Support for larger smolt can boost production capacity
- Effective solution for low-oxygen and low-current environments

Excess feed and sludge, previously considered waste products, are now poised to make a significant contribution. By utilising these resources, we can create new energy and secure a stable supply of phosphorus for future generations.

Investing in automatic and cost-effective collection technology with Framo LiftUP becomes not just an environmental benefit, but an economic advantage.

On a broader scale, adopting the Framo LiftUP system helps to:

- Reduce the aquaculture industry's carbon footprint
- Lessen reliance on imports for the Western world.
- Strengthen the brand of fish farmers and increase demand for sustainable salmon.





### Framo LiftUP Combo Collector

Engineered to function as a conventional mort collector with an added feature for removal of sludge from the net bottom. Paired with nets customised for sludge collection, you can reclaim command of your site. Furthermore, we now provide solutions for managing sludge and dead fish in enclosed and partially enclosed enclosures, as well as onshore facilities.



### Framo LiftUP Control System

Our intuitive control system offers comprehensive monitoring and management while safeguarding your data. You can monitor sludge tank levels, hourly sludge output per cage, and more. All data is accessible through predefined reports. Additionally, the control system oversees uptime, alerts, and potential hydrogen sulfide (H<sub>2</sub>S) presence.

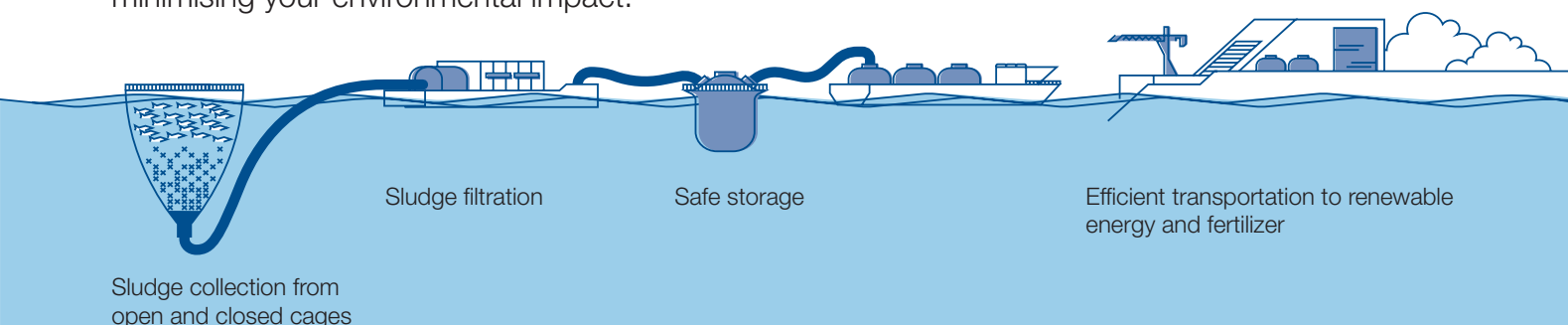
Easily control operations from the barge or shore with your PC. This cloud-based control system provides secure access to critical data.

## The Sludge Journey: From waste to resource

The journey of sludge from fish farms is a fascinating example of transforming waste into valuable resources. The process begins with collecting a mixture of feces, feed residues, and other organic material from the fish farm. The sludge is then filtered and stored on-site before transportation to facilities where it's converted into renewable energy and fertiliser.

### Framo and Ragn-Sells: Your partners in sustainable aquaculture

Through a close collaboration, Framo and Ragn-Sells can offer fish farmers the entire value chain, from sludge collection to disposal. This comprehensive solution allows you to expand production while minimising your environmental impact.





# Framo: Your partner for profitable and sustainable aquaculture

Over the past 50 years, Framo has grown into a world-leading supplier of pump systems for the marine and offshore markets. We have now applied our unique expertise to develop new pumps specifically designed for fish farming. Our focus has always been on reliability and low energy consumption.

In collaboration with fish farmers, we have developed new and sustainable systems to empower fish farmers to transform the industry with comprehensive solutions for improved fish health, profitable operations, and sustainable aquaculture — from waste to resource.

Framo became part of the global conglomerate Alfa Laval in 2014, and LiftUP was acquired in 2021. Framo LiftUP products are now sold and manufactured at Framo locations in Venjanaset, located in the municipality of Bjørnafjorden.

## Framo's network collaboration promotes circularity

Investing in a Framo solution is more than an investment in high-quality products; it's your way into the Aral network. This coalition comprises leading companies united in their mission to enhance the sustainability of aquaculture through circular waste logistics. The Aral network primarily aims to amplify the value of resources that would otherwise be wasted.

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