

April // 2013

atlantic

Icelandic Seafood and Fishing Industry Innovation





seafood solutions



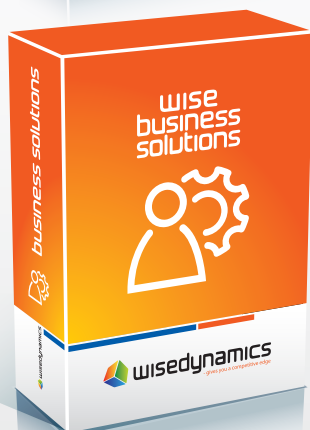
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Wise is an Independent Software Vendor (ISV) for Microsoft Dynamics NAV and a Microsoft Gold Partner. Founded in 1995, Wise has become one of the largest resellers of Dynamics NAV in Iceland, offering a wide range of business solutions for the international markets.

Wise solutions combine the best of standard Microsoft Dynamics NAV with specialty add-on solutions. Under the Wise Dynamics umbrella is a wide range of solutions that offer seafood industry-focused packages, business intelligence solutions and analytical tools.

Codland – 100% utilisation

New ideas for extracting additional value from seafood are constantly popping up in Iceland's fisheries sector. Many enterprising young companies have in the last few years and decades been able to build on smart thinking with solid marketing to give them a market foothold. Now another green shoots company, Codland, born of ambitious innovation and development work, has appeared on the scene.

Codland consists of companies with different background in white fish processing whose common goal is to maximise the value of every cod caught while simultaneously extracting every ounce of potential from the raw material. Codland was established 2012, based on the success of Haustak, the biggest fish-drying company in Iceland which specialises in drying many varieties of fish

products. Haustak's origins go back to 1999 and it is owned by two of Iceland's best known seafood companies, Vísir hf and Thorbjörn hf.

Arnar Jónsson and Haukur Már Gestsson, project managers at the Iceland Ocean Cluster, have both worked extensively on improving additional value from seafood. According to Haukur Icelandic producers are reckoned to utilise 76% of the cod they receive. The figures are 50% for the Faroes, 45% for Canada and 43% for Greenland, while according to Norway's own figures, their utilisation rate also stands at 43%.

Visit the Codland website:

www.codland.is


Visit the Iceland Ocean Cluster website:

www.sjavarklasinn.is





Arnar Jónsson and Haukur Már Gestsson with some of the added-value products that are lucrative spin-offs from cod processing

3



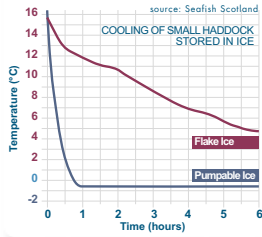
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It is important to cool the catch rapidly in the first hours after it is caught, as this can lengthen the shelf life dramatically.

Optim-Ice® is one of the best cooling medium on the market that delivers rapid rate of cooling and at the same time does not bruise or damage the catch. The cooling medium is viscous, consisting of microscopic ice crystals.



Time (hours)	Flake Ice Temperature (°C)	Pumpable Ice Temperature (°C)
0	15	15
1	12	0
2	10	-1
3	8	-1
4	6	-1
5	4	-1
6	2	-1

source: SeaFish Scotland

optimar 
Iceland

Stangarhyl 6 | 110 Reykjavik | Iceland | Tel. +354 587 1300 | Fax. +354 587 1301 | optimar@optimar.is | www.optimar.is

The booming Icelandic fishing industry has been through tough years:

Resourcefulness and innovation is the key

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atlantic

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athygli@athygli.is
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Editor:
Sigurður Sverrisson, siggi@athygli.is

Text:
Atli Rúnar Halldórsson, Jóhann Ólafur Halldórsson,
Sigurður Sverrisson

Designer:
Guðmundur Þorsteinsson

Advertisements:
Ingibjörg Ágústsdóttir, inga@athygli.is

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Samherji's trawler, Vilhelm Þorsteinsson, fishing for capelin just off the Southeast coast of Iceland.
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Photos:
Bergþór Gunnlaugsson, Heiðrún Bára Þorbjörnsdóttir, Kristján Maack, Ólafur Óskar Stefánsson, Sjávarklasinn

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Iceland's fishing industry has been through some tough years, emerging as not only one of the most modern in existence, but also one of the most progressive. When quotas are tight, everything has to be used and there's hardly a part of a fish landed in Iceland that isn't turned into products in one way or another, frequently in imaginative ways. Niche products such as chitin, swim bladders and fish skin used in designer goods and skin care products, to name a few, have found their way to overseas markets at prices that make going the extra mile worthwhile.

Innovative solutions

Behind the fishing industry is the equally remarkable service industry, manufacturing everything from deep-sea fishing gear to separators for capelin roe. Again, the booming service industry is to a large extent a by-product of the lean years. When fishing companies and processors really needed to push things a little further and reach ahead of the competition, a group of innovative and like-minded companies overcame the technical hurdles. It's no coincidence that many of these companies have since gone on to establish themselves around the world and to give bigger rivals a run for their money.

There are nations that have important fishing industries, but Iceland is one of a very few countries that rely on fishing to underpin its economy.

There are other industries on this island, tourism, power, software and others, but a substantial proportion of Iceland's high standard of living is based on the fishing industry – which means that safeguarding fishing isn't something to be taken lightly.

Own logo of origin

This is where the drive for quality has its origins, and this is where the thrust comes from for Iceland's homegrown IRF label that is based on some of the strictest criteria anywhere. In an industry that's already overburdened with labels ranging from the obscure to some that are

almost household names, the decision to go for its own logo of origin by establishing the Icelandic Responsible Fisheries (IRF) logo and the IRF Foundation to manage it was a bold move on Iceland's part.

While various different ideals are being followed around the world it was Iceland's decision to swim against the tide, not least when it was judged that other eco-label certification criteria were not sufficiently rigorous. This has proved to be a gamble that paid off.

Fishing is vital to Iceland

Iceland was a pioneer, first in pushing out its territorial limits that culminated in the establishment of a 200-mile EEZ back in 1976, and then in taking a lead in managing its fisheries using quotas. Beating an untrodden path, it was inevitable that mistakes would be made and it would be unrealistic to pretend that it has been an easy ride. Fighting for the rights to control its own waters was a dramatic series of international events, as anyone who remembers the Cod Wars will recall, and establishing real, workable management of its fisheries has been a process that has often sparked controversy.

Today Iceland has a fishing industry that has changed dramatically. Fisheries have become streamlined and integrated, as catching, processing, export and marketing have learned to work closely together in a way that can be seen as an example worth following. Fishing isn't just important to Iceland, it's vital – hence the pace and urgency to modernise with a change in thinking that replaced volumes with values.

Cool Atlantic

Distributed free at the European Seafood Exposition and Seafood Processing Europe in Brussels 2013, this first issue of Cool Atlantic magazine gives a little glimpse of the diversity within the Icelandic fishing industry and the wide range of its service industries.

Skaginn Supercooler

Set to revolutionise fish processing at sea and ashore



Skaginn hf specialises in cooling and freezing solutions, not just in ground fish and salmon, but also for producers of pelagic fish, chicken, meat and vegetables.

'Our strength is in refrigeration-centred overall processing solutions, as we deal in IQF freezers, supercoolers, automatic plate freezers, slush ice cooling systems and washing systems. Our largest single delivery during the last year was an 800 tonne capacity pelagic processing system for a customer in the Faroe Islands,' says Skaginn's CEO Ingólfur Árnason.

'It's important to us that we take part in our customers harvesting the benefits of their investments - otherwise they don't stay with us. At Brussels this year we will be presenting a showcase of what we have to offer and the latest addition to our range is the Supercooler that we see as a vital piece of equipment for processing ashore and at sea. Both our own research and that of public bodies has demonstrated that supercooling raw material without freezing it has a massively beneficial effect on the shelf life of the fish and the quality of the product. We also see that supercooling has benefits for improving yields in processing and the value of the finished product is similarly enhanced, with a higher proportion finding its way into higher-value products. Our Supercooler, either used for whole fish or for fillets, is the mover for a whole new way of thinking in fish production.'

'We might not be the largest company in this sector, but we're ambitious and solutions-driven. We work closely around the world with companies such as Marel and Kælisíðjan Frost. We are also in a position to seek support from the leading specialists in their field at Matís (Icelandic Food and Biotech R&D), as publicly funded research is carried out using our processing equipment.'

'Experience has taught us that the key to achieving success in production is effective cooling, all the way from the raw material to the consumer's plate. This is where we have new thinking towards processes that will dramatically change fish production, while creating added value for producers. That's what we will be showing at **Stand H-4-6127** at the European Seafood Exposition in Brussels.'

'We relish the challenge of finding new solutions to complex problems - and we're ready to start work.'





Be COOL Think Quality



Cooling the fish through the whole production process
is the key solution to your success

Frost provides truly cool systems



Gudmundur Hannesson,
Manager of sales and
marketing (left) and General
manager of Kælisidjan Frost,
Gunnar Larsen.

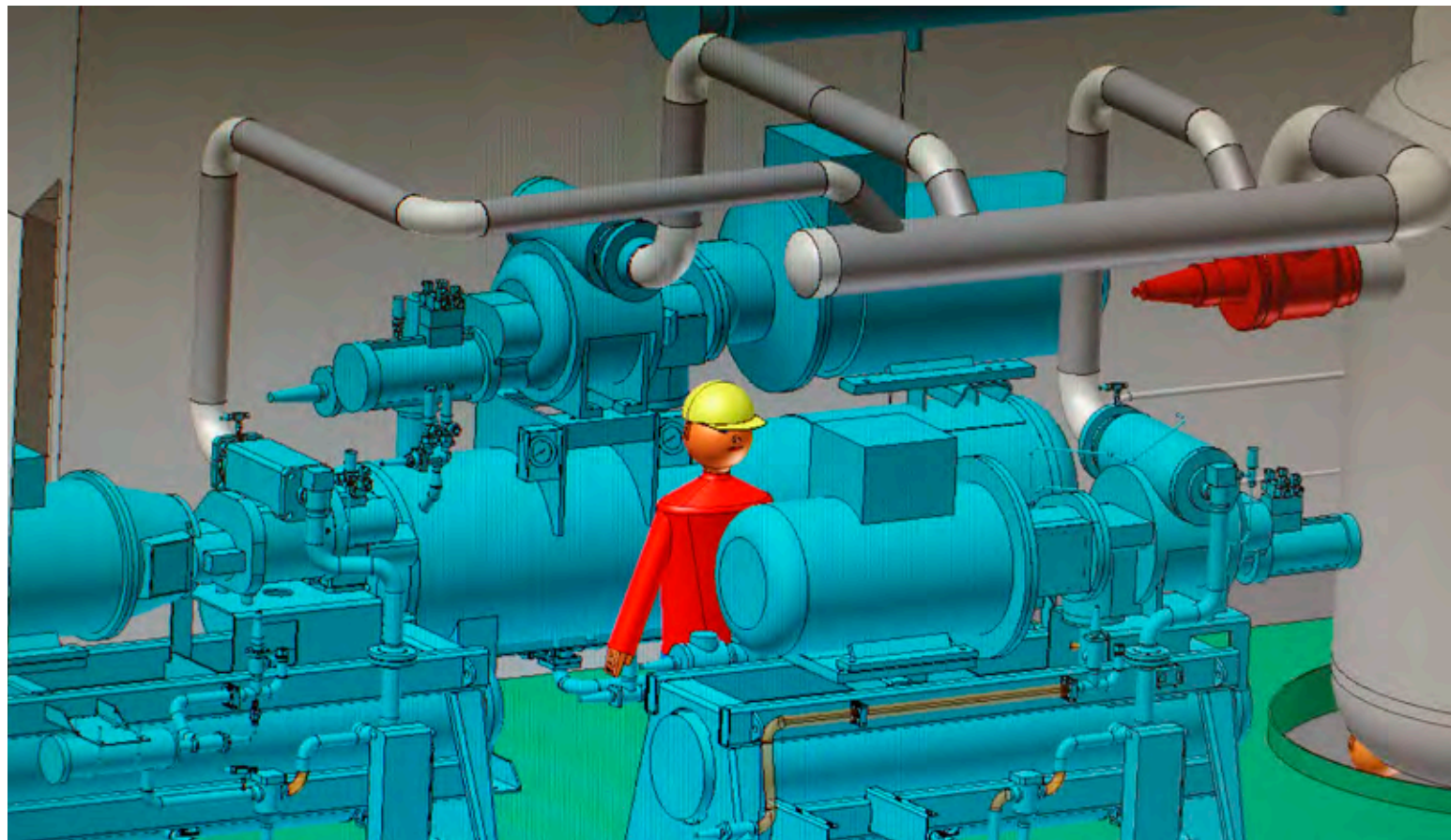
Chiller and freezer systems for both shore processing and at sea are just what Akureyri company Kælisidjan Frost excels at. A quick look through the list of customers in which Síldarvinnslan, HB Grandi, Ísfélag Vestmannaeyja, Skinney-Thinganes and Vinnslustöðinn are all present and correct is enough to demonstrate that Frost has developed and installed freezer systems for every major seafood company in Iceland.

Kælisidjan Frost has worked with Skaginn and other specialist companies in the seafood service sector over the last two decades to establish an 'Icelandic approach' to pelagic processing. This is the approach that Faroese company Vardin Pelagic chose when they contracted Skaginn and Frost to commission a large factory facility on the

Faroese island of Suduroy in 2012. In only five months the new factory with its fully automatic production line was up and running. This grades fish by size before routing them to be wholefrozen, headed, or filleted. Products are passed automatically to the freezers, after which yet another automated system takes over to pack them in to cartons, stack the cartons onto pallets and wrap each pallet in plastic.

Fully-automated production line

This Icelandic production line is the only fully-automated system of its kind on the market. This is a high-capacity system, capable of processing between 600 and 1000 tonnes in a 24-hour working day, which also reduces packaging costs by more than half, freezes faster than conventional



factories and minimises raw material degradation, while maintaining a modest power footprint.

Kælisidjan Frost is also deeply involved in the seagoing side of the business with both refits and new installations of chiller and freezer systems for fishing vessels. A recent delivery was a trawler bought from Norway by a Canadian company. Renamed Raw Spirit by its new owners, its delivery trip to Vancouver was broken with a stopover at Akureyri.

It's worth mentioning that the contract for Raw Spirit's installation came about as a result of Kælisidjan Frost's stand and publicity efforts at the Brussels exhibition in 2012.



Dozens of vessels refitted

The company has refitted chiller and freezer systems for dozens of fishing vessels. In the last two years alone nine vessels have been through refits, with six of them having had their elderly freon systems replaced with more environmentally-friendly ammonia-based installations. Of these six, one is Icelandic, one Canadian, one British and the other three are from Norway.

Visit our website: www.frost.is

What are the environmental effects of fish products?



www.matis.is

Matís is an independent Icelandic research institute which strives toward innovation in the food industry, biotechnology and food security. Matís provides consultancy and services to companies in fisheries and agriculture as well as governmental agencies.

Traceability and the environmental impact of fish products are the main themes of the EU sponsored WhiteFish project in which Matís is participating, alongside parties in Norway, Sweden, United Kingdom and the Netherlands.

The project is focused on developing methods to evaluate the environmental effects of fish produce, from the time of fishing until consumption. The environmental analysis is based on a Life Cycle Analysis (LCA) which results in it extending to all areas of the value chain. Therefore, it factors in components such as the state of the fish stocks, the effects of fishing techniques, energy consumption in processing and transport, waste management throughout the whole process, and the elimination or recycling of packaging, etc.

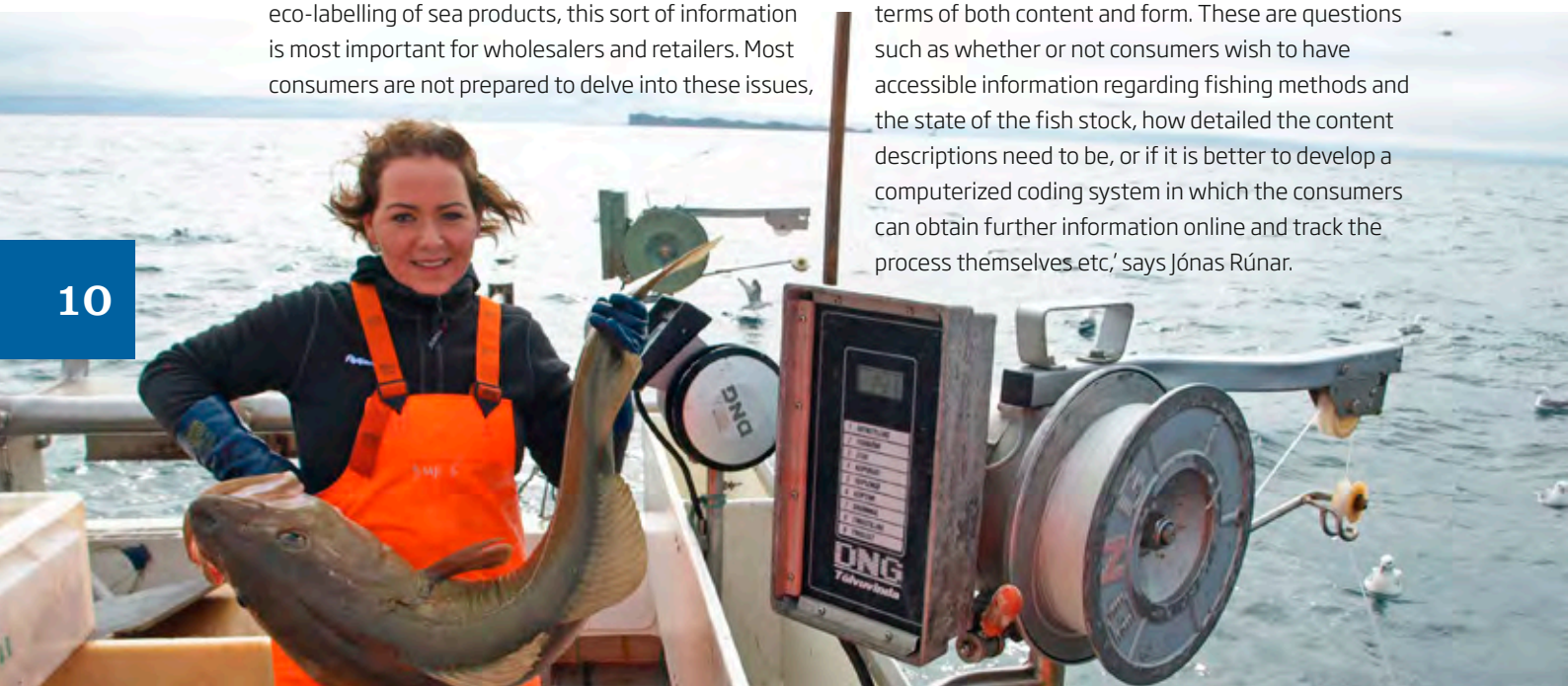
'Judging from the experience we have had from the eco-labelling of sea products, this sort of information is most important for wholesalers and retailers. Most consumers are not prepared to delve into these issues,

but on the other hand, they trust that the party selling the seafood is offering a product with an acceptable environmental track record,' says Jónas Rúnar Viðarsson, Research Group Leader at Matís.

'Over the last few semesters, wild fish from the North-Atlantic Ocean have been facing increased market competition from less expensive, farmed fish from Asia and Africa, such as pangasius and tilapia. With the WhiteFish-project, we hope to be able to show that when all things are considered, our fish has less environmental impact than its competitors.'

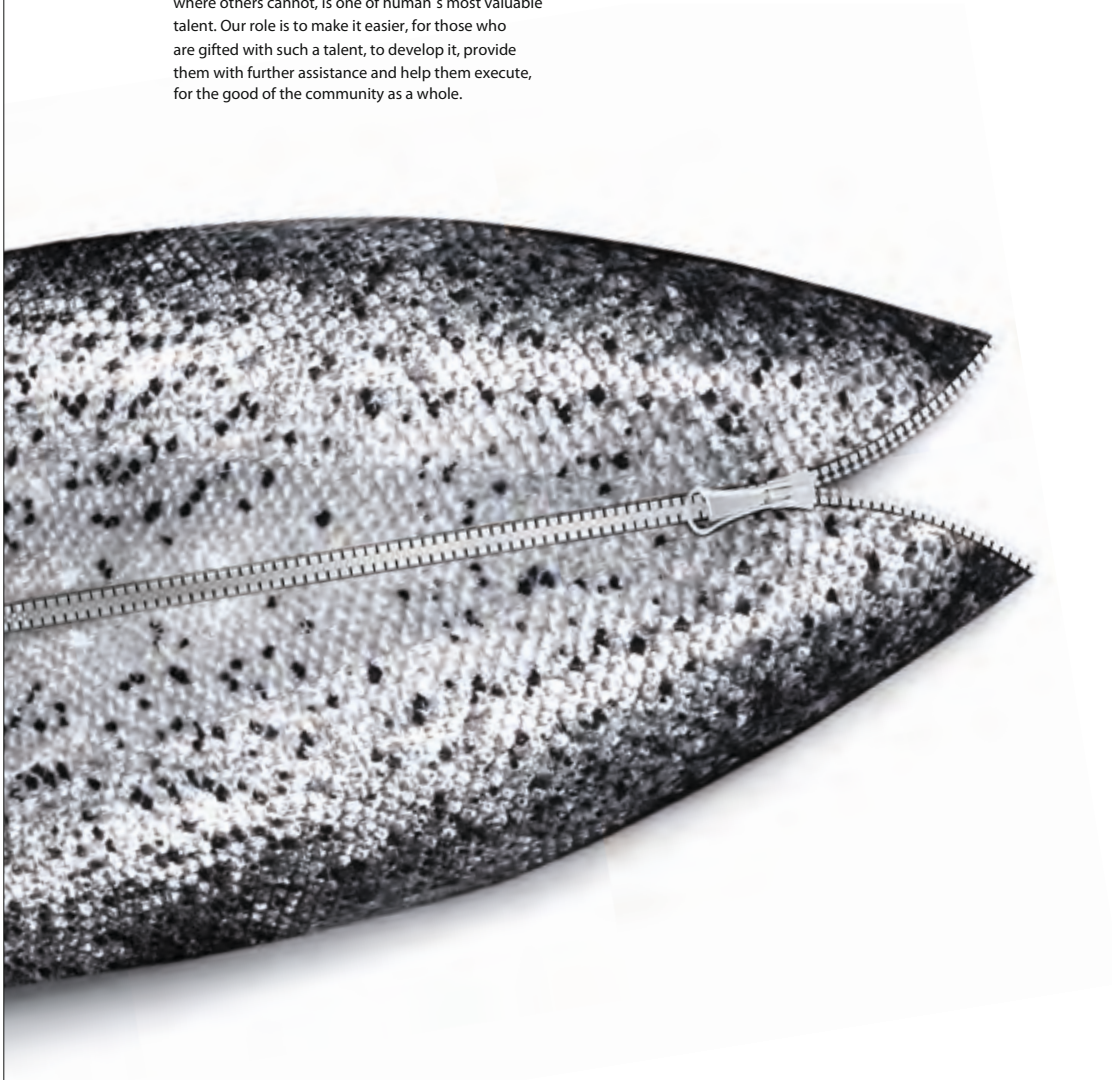
Fresh fillets from Iceland are used for the development of the project and also, the same process is examined for fresh whole fish from Iceland which is transported in containers to Grimsby, UK where it is then processed. The third research topic is sea-frozen fish from Norway and finally, pre-packaged fishmeals produced in Sweden.

'From this project a side-project has developed, supported by the Nordic Innovation Centre, in which we are looking at what information the market is demanding, i.e. the retailers and the consumers, in terms of both content and form. These are questions such as whether or not consumers wish to have accessible information regarding fishing methods and the state of the fish stock, how detailed the content descriptions need to be, or if it is better to develop a computerized coding system in which the consumers can obtain further information online and track the process themselves etc,' says Jónas Rúnar.



To notice value

where others cannot, is one of human's most valuable talent. Our role is to make it easier, for those who are gifted with such a talent, to develop it, provide them with further assistance and help them execute, for the good of the community as a whole.



Showcasing in Brussels



X-ray guided Cutting machine

Valka will showcase its latest X-ray guided cutting machine for the first time at the Seafood Processing Europe exhibition in Brussels.

Designed for trimming and portioning of fish fillets and released in last October the new X-ray guided cutting machine has already demonstrated that it's superior to both manual cutting as well as other cutting machines on the market. In most applications the labor-savings should be more than fifty percent and the payback period relatively short.

The machine uses a combination of an X-ray and 3D image processing system together with robot controlled water jets to locate and cut out pin bones and portions with exceptionally high accuracy. The first machine has already been sold and used for few months at HB Grandi in Iceland.



Image above: Cod fillets cut in two different ways.

Doubled capacity compared to manual cutting

The machine has now been running for few months and is being used to cut out pin bones as well loins in Redfish fillets. With considerably fewer people working at the new line the capacity is at least double compared to manual cutting.

Higher value products – Short ROI period

By applying the new X-ray guided cutting machine HB Grandi is now able to produce much more valuable boneless products previously not feasible to process manually due to unacceptable yield and high labor costs. Therefore the estimated return of investment period for the HB Grandi machine is short.

Main benefits:

- Increasing the yield by minimizing the bone off cut – Typically the V-cut
- Increasing the yield into higher value products – Commonly by maximizing the size of the loins
- Reduce the amount of labor needed to trim the fillets.

Vision system for measuring the fish density

The X-ray machine is exceptionally sensitive, capable of detecting fish bone down to 0.2 mm in size. The machine cutting proximity and throughput can be tuned to match the objective of yield and boneless fillets. The vision system can furthermore measure the density of the fillet and cut portions to the desired weight, for instance 150 gram loins.

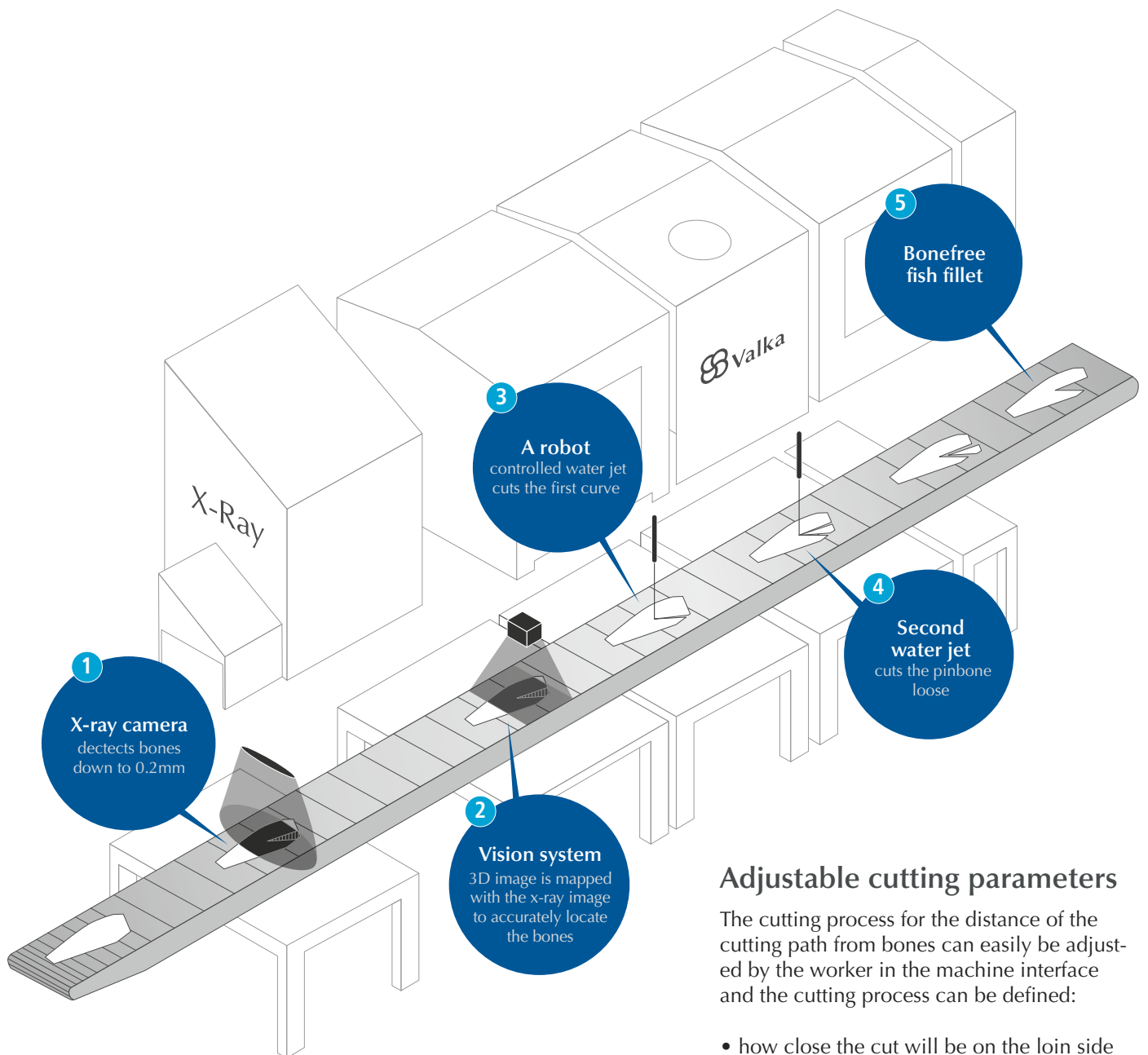
Image below: The machine in action at a customers plant.



Showcase in Brussels

Valka will display and demo the machine throughout the exhibition and welcome all to visit in:

Hall #4 booth 6115-1



Adjustable cutting parameters

The cutting process for the distance of the cutting path from bones can easily be adjusted by the worker in the machine interface and the cutting process can be defined:

- how close the cut will be on the loin side
- how close the cut will be on the belly flap side
- how far behind the last bone the cut is.

About Valka

Icelandic food equipment production company Valka develops innovative solutions for the fish processing industry. The company offers high-tech innovative weighing and grading applications as well as advanced trimming and packing lines with easy to use production and order handling software.

The company's primary objective is to improve the quality and yield of the raw material, resulting in a higher selling price for the processed fish products. Created with quality craftsmanship, the company's product line delivers higher yield, improved processing and better product quality.



“ Breakthrough in fish processing

Torfi Þorsteinsson Production manager at HB Grandi

In a recent interview HB Grandi's Production manager Torfi Þorsteinsson, said. „We use the machine to cut out pin bones from Redfish fillets. The fillets are small and up until this day the majority has been sold with bones as it has been too expensive to manually cut out the pin bone. It requires too much manual labor per kilo and the chances are the yield is not good enough due to the small size.

With the new cutting machine we get much more accurate cutting, better yield and the throughput is increased. Furthermore we now have the possibility of marketing bone free Redfish fillets that are much more valuable product.the next step will be to adapt the machine for other species. ...if all goes well this technology could very well be a breakthrough in fish processing“ said Torfi finally.

Why does the Icelandic fish always fetch the highest prices?

Preserving the natural quality of any raw material is crucial in putting a prime quality product on the market. Careful handling all the way from catching to processing and from there to the consumer's plate are paramount, and that care in handling needs to be a priority from the moment the fish are out of the water. Processors estimate that raw material quality accounts for 80% of a product's final quality – consistency at every stage is something that can't be ignored.



An aerial view of
Borgarplast's
production plant.

The importance of bleeding and chilling

The correct techniques for handling white fish are pivotal. One of the key factors that determines product quality is correct bleeding. Fish should always be bled and gutted on board. If bled after death, it will automatically lose some of its quality. It is thus crucial that the fish is alive when hauled aboard and bled subsequently.

Fish needs to be iced immediately after being caught. A suitable quantity of ice should be used to chill the fish down to a temperature between -1°C to +1°C to manage the process of the fish going through rigor mortis. If this happens too fast, fillets will be cracked, with flaky flesh, losing both quality and value. For short trips, slush ice with its capacity to chill quickly is used, and for longer trips slow-melting flake ice is preferred. An increasing number

of vessels now use a combination, plunging newly-caught fish into slush ice, and transferring them to flake ice after gutting and cleaning.

Storage life and sensitivity to storage vary between species. Selecting the right storage must take into account the species and the duration. The introduction of insulated fish tubs around 30 years ago revolutionised handling, boosting quality sharply, notably by reducing handling. Every time a fish is moved from one container to another and dosed with more ice, there is an inevitable loss of quality as its storage life is shortened at every stage.

Virtually no shrinkage

Comparisons have shown less shrinkage of fish iced in shallow containers (400/460 l, inside depth 43 cm). The main factor here is that 250-300 kg of fish and ice (around 30% under Icelandic conditions, although more is needed in warmer climates) is used in a shallow insulated container.

Experiments demonstrated little shrinkage in the fish after seven days, while more shrinkage occurred in containers holding 400kg or more, depending on placement; cod at the top of the container showed virtually no shrinkage, while those at the bottom could lose 2%.

Insulated bulk containers are now used across the entire fishing and processing industry in Iceland, where producers have adapted rapidly to changing conditions as the market demanded first higher quality and subsequently full traceability. This is not a process that has come to an end. There is a need for still better handling, which is key to fetching top prices for the best quality fish.

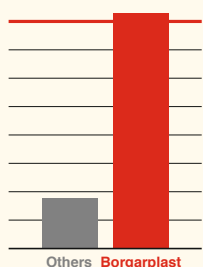
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Insulated double walled pallet containers

Reliable Products - Environmentally Responsible

over
80%

Market share in fish containers in Iceland over 80%



Worldwide exports since 1986



Product no.	Height	Width	Length	Capacity
20156 PUR	68 cm	71 cm	91 cm	260 litres



Product no.	Height	Width	Length	Capacity
20157 PUR	73 cm	76 cm	92 cm	322 litres



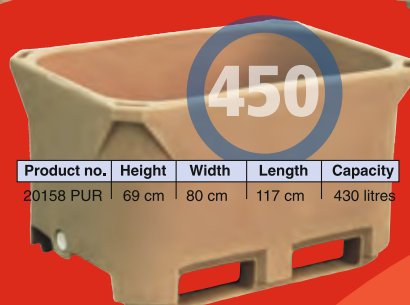
IST EN ISO-certificated Quality System since 1993



IST EN ISO-certificated Environmental Management System since 1999



Product no.	Height	Width	Length	Capacity
20658 PUR 20650 HD △	58 cm	100 cm	120 cm	410 litres



Product no.	Height	Width	Length	Capacity
20158 PUR	69 cm	80 cm	117 cm	430 litres



Product no.	Height	Width	Length	Capacity
20159 PUR 20559 HD △	58 cm	103 cm	122 cm	430 litres



Product no.	Height	Width	Length	Capacity
20260 PUR 20676 HD △	75 cm	100 cm	120 cm	600 litres



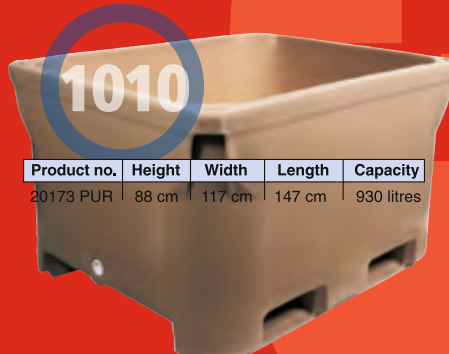
Product no.	Height	Width	Length	Capacity
20163 PUR 20563 HD △	75 cm	103 cm	122 cm	630 litres



Product no.	Height	Width	Length	Capacity
20270 PUR 20687 HD △	86 cm	100 cm	120 cm	700 litres



Product no.	Height	Width	Length	Capacity
20170 PUR	89 cm	120 cm	150 cm	960 litres



Product no.	Height	Width	Length	Capacity
20173 PUR	88 cm	117 cm	147 cm	930 litres



Product no.	Height	Width	Length	Capacity
20176 PUR	88 cm	117 cm	199 cm	1250 litres

See You in Hall 4,
Stand 6127-6
SEAFOOD PROCESSING EUROPE
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Icelandic origin adds value to branded seafood



Promote Iceland is a public-private partnership established to improve the competitiveness of Icelandic companies in foreign markets and to stimulate economic growth through increased export. Promote Iceland handles publicity for Iceland

Responsible Fisheries (IRF). Gudný Káradóttir is Director at Promote Iceland and Marketing Manager for IRF.

'In overseas marketing we work on the basic principle that image and reputation has a direct effect on people's interest in doing business. The origin of a product has an increasingly important value in the eyes of consumers, and that's the strategy that we are relying on in promoting seafood overseas. The vision is that Icelandic seafood has an image of being outstanding and sought after on foreign markets due to its quality and freshness that in turn have their origins in responsible management and unspoiled ocean,' she says.

Origins and responsible fishing ...

'Purchasers of Icelandic seafood demand traceability. The Icelandic management system makes it possible to manage fisheries with a highly transparent regime of

monitoring and registration. Responsible fisheries management, sustainability and demands for certification are crucial for certain markets and Icelandic producers have been able to meet these demands,' she adds. The Iceland Responsible Fisheries logo of origin, alongside the relevant branding and certification of responsible fisheries are all tools in the marketing and promotion of Iceland's seafood. Despite a relatively short background, the logo of origin is used by many producers and buyers/importers in foreign markets, particularly in a business to business environment.

... for future generations

'The primary message is that Icelandic seafood is pure and unspoiled healthy seafood, produced with a respect for nature and with the needs of future generations among its guiding principles. We believe that putting this message across in a positive way is a powerful tool and increases an understanding of Iceland at a time when competition with other countries for attention is increasingly tough,' Gudný Káradóttir says.

Visit our websites:

www.islandsstofa.is

www.responsiblefisheries.is





ENNEAM / SIA / NM66156

> Efficient and environmentally sound

March 18 marks a turning point in sea freight service to and from Iceland, when Samskip opens a route connecting rural Iceland directly with markets in the UK and mainland Europe.

We are proud to offer customers in Iceland and elsewhere the efficiency and environmental benefits that come with their products reaching customers more directly.

samskip

Together we make it happen

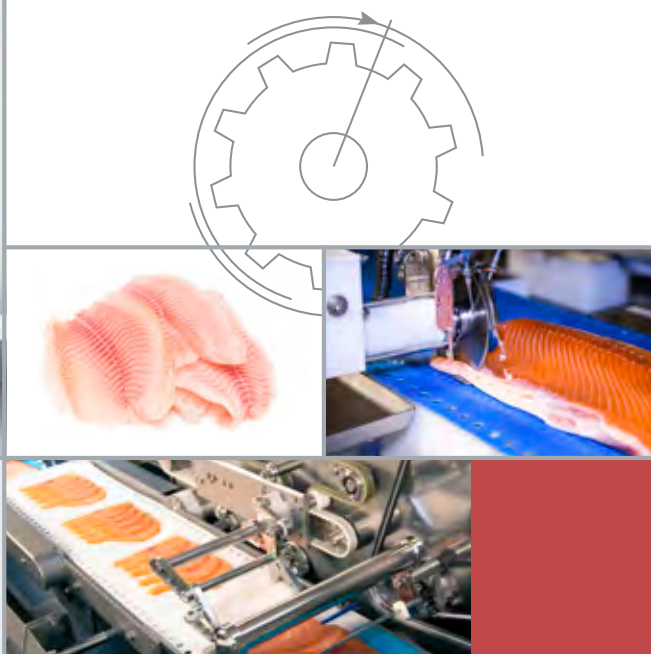
Ten companies behind Green Marine Technology

Ten companies, all active within the Iceland Ocean Cluster, recently signed an agreement to take part in the co-operative Green Marine Technology project. This is the result of work carried out by companies within the cluster, and behind it are 3X Technology, Dis, Marport, Naust Marine, Navis, Polar Fishing Gear, Promens, Samey, Thorlce and Trefjar.

All of these participating companies offer solutions for the international market that are outstanding in terms of green technology and support the enhancement of the environment. The technical solutions offered are based on a range of concepts, including



President of Iceland, Ólafur Ragnar Grímsson, addressed guests at the launch of the project.





Representatives of the companies involved in the Green MarineTechnology project.

improved use of fuel, ways of reducing fuel consumption and obtaining better yields from raw material.

This new drive is set to improve co-operation between these high-tech manufacturers and to showcase the range

of outstanding technology that is available in Iceland to the world's fishing and processing industries, as well as attracting attention to the headstart that Iceland's own seafood sector has in catching and processing.

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INNOVATION THROUGH PARTNERSHIP

By linking together what **we** do best with what **you** do best,
we create innovation through partnership
to add value for you and your customers.

Step into the future with us

at **Stand 6227 – Hall 4**

Seafood Processing Europe 2013, Brussels



www.marel.com/SPE2013



Meeting the traceability challenge

Food safety and proof of origin in today's regulatory environment

In the fish industry today, traceability is essential to satisfying regulatory obligations and consumer confidence. The tightening of regulations reflects growing global concerns about legitimate fishing grounds, correct labeling of products, and product quality. Fish processors must be able to demonstrate proof of origin, traceability throughout their value chain, and the ability to make quick recalls.

To do all this, an effective traceability system is essential. Traceability is the ability to track fish and seafood products through the seafood supply chain from harvesting to processing and distribution, making it possible to identify and address risks and protect public health.

Traceability made easy with INNOVA

With Innova Software Solutions, traceability is built into every step of the production process. Innova uses data collection points and software processes to link these processes together into one traceability chain, and communicates with other internal and external systems, such as ERP and fishery registration systems. This makes it possible to trace every product to its source, and at the same time improve efficiency and production control by automating traceability processes including quality assurance registrations, and ensuring that processors fulfill quality certification requirements and can act quickly to minimize the size of recalls.

"Traceability requirements are stipulated in regulations, in the form of source certifications, quota and compliance regulations, eco-labels and so forth," Marel Sales Manager Bjarni Bergsson explains. "But it also comes down to the end user – the customer who wants to know that their food

comes from a trusted source. Innova makes it possible for processors to earn that stamp of approval – from both regulators and consumers."

INNOVA provides total control

Marel works in close partnership with customers all over the world to fulfill their food safety and traceability needs with Innova – from Icelandic fish processors to Uruguayan beef processors – and solutions developed for one protein industry often lead to new solutions for another.

In Australia, the Innova fish landing solution enables Southland Fish Supplies to instantly identify products by vessel, species, grade and form, as well as match them to customer orders. In Norway, Innova production management software helps Bremnes Seashore ensure that every one of the 35,000 fish processed daily is dispatched to its correct destination around the world, on time, with all the correct paperwork in place and to exact customer specifications. "Innova provides us with total control," says Bremnes Logistics Officer Linn Hege.

Do you want to automate traceability for your business? Visit Marel at Seafood Processing Europe, April 23-25, **Stand #6227, Hall 4 or go to www.marel.com/traceability.**



Fresh Catch brings you the catch of the day—everyday

Toppfiskur—Fresh Catch Every Day provides freshness, quality and fast delivery on haddock and cod products, fresh, frozen or salted.

With over 30 years' experience supplying some of the largest retailers in the UK and France, Toppfiskur purchases all its products from local fish markets and independent local fishermen.

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Toppfiskur, Fiskislod 65, 101 Reykjavik, Iceland
Contact: laufey@toppfiskur.is, tel: +354 821 8151

Your Business is Always on Our Mind

- Serving the Seafood Industry since 1904

22



Members of Íslandsbanki's Seafood Team, from left to right: Runar Jonsson, Head of the Seafood Team, Timothy Spanos, Head of International Lending, and Vilhelm Mar Thorsteinsson, Managing Director of Corporate Banking.

Íslandsbanki offers comprehensive financial services to individuals, households, companies and professional investors. Building on a heritage of serving Iceland's core industry, Íslandsbanki has developed a recognized expertise within the Seafood sector. The bank has put together a dedicated team of experienced professionals with a deep understanding of the sector. Íslandsbanki and its predecessors have worked closely with the Seafood industry for over a century, having financed Iceland's first motorized trawler in 1904.

In addition to providing financial services to the Seafood industry, Íslandsbanki has published numerous well-received reports on key markets and species, providing insight into the critical issues affecting the

industry, both within Iceland and internationally. Furthermore, Íslandsbanki's Seafood Industry Dashboard provides industry participants with a convenient, online resource for comprehensive data about the industry.

Globally, seafood consumption has never been greater, reaching an average of 18.5 kg per person in 2009, an increase of around 2.7 kg since 2000. FAO estimates that worldwide seafood consumption will continue to increase to a level of 19.6 kg per person by 2021, highlighting the increasing importance of seafood as one of the main sources of protein in the human diet.

Íslandsbanki expects to see continued consolidation within the Seafood industry, as demand for seafood increases while at the same time the resource remains fixed. Due to the limited global resource, aquaculture is forecast to have an even greater impact on seafood supply in the future. M&A activity has regained momentum after falling significantly in 2008 and 2009, and is likely to increase in coming years. Íslandsbanki sees great opportunities within the industry and looks forward to assisting seafood companies to grow their businesses.



Íslandsbanki utilizes its expertise to provide valuable service to Seafood industry players and investors in the sector.

For Íslandsbanki's Seafood publications and Seafood Industry Dashboard, visit www.islandsbanki.is/seafood

Beitir puts more hooks in the water

'The last three years have been the best yet, and that's down to the success we have achieved by marketing our products overseas. Around 60% of our production is now exported, mostly to Norway. What we specialise in is developing and producing longline gear, and it's a fact that much of the longline technology used in Iceland has come from Norway,' said Beitir managing director Hafsteinn Ólafsson.

Custom-made solutions

Beitir is best known for its random baiters, line haulers and bait cutters for boats between 6 and 100gt, but the company also produces an array of equipment tailored to customers' requirements. Among the new solutions it has developed are a scrubber for longline haulers that cleans off the hooks better than has been possible before, and a slave hauler for trap fishing which has been developed with the Norwegian market in mind.

'The Norwegians are gradually coming around to the idea that with our gear they can work more hooks with a smaller crew, and catch more, which makes them simply more profitable. There's a big market there for us and plenty of opportunities,' Hafsteinn Ólafsson said.

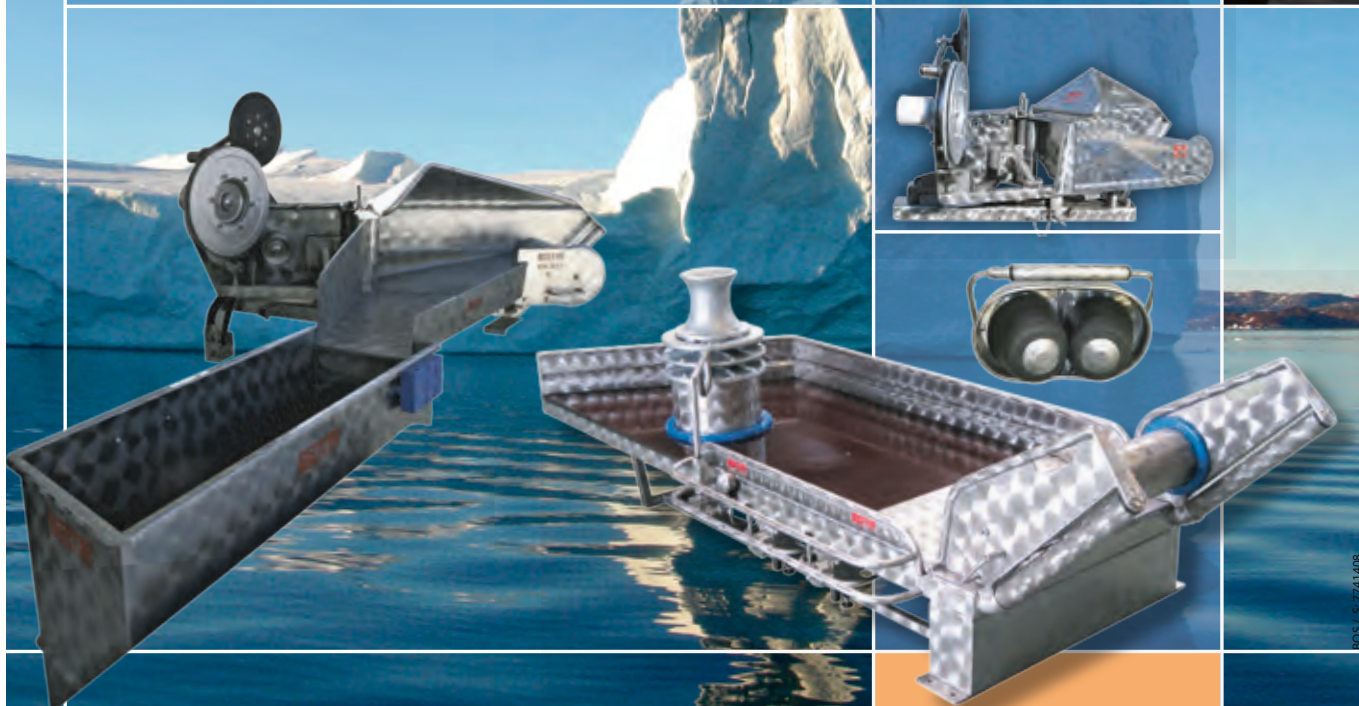
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Stainless steel, plastic and aluminium

We have 25 years of experience in producing equipment for smaller boats, including line haulers in three sizes, end rope haulers, shooting chutes, bleeding bins with rising floors, random baiters, hydraulic and electric bait cutters, washing tubs, net clearing tables and net stacking cones, crabbing equipment, handrails, chutes and flaps, plus equipment tailor-made to the customer's requirements.

BEITIR

Jónsvör 3, 190, Vogar, Iceland,
Tel.: (+354) 424 6650,
Fax.: (+354) 884 2845,
E-mail: beitir@beitir.is,
Website: www.beitir.is



Bioactive cosmetics and dietary supplements from by-products?

By-products that are the result of seafood processing can range from shrimp shells, heads, tails or offal, and there can be significant values that can be extracted from them. A shrimp's shell is its defence; marine organisms have developed their own materials and mechanisms as the environment they live in can be a hard and ruthless one. For these reasons, they build up their own defences to deal with the conditions they live under. Hólmfríður Sveinsdóttir is a nutritionist at Food and Biotech R&D Company Matis.

The effectiveness of bioactive materials

'These materials have a level of bioactivity that can enhance our health. These are antioxidising substances that reduce blood pressure, cholesterol and blood sugar and which can also protect us against the sun's ultra-violet rays,' she says and points out that research is needed to

confirm the benefits of bioactive materials, and that calls for funding.

There has already been much progress in fishing vessels delivering by-products to shore. On board larger vessels where there tends to be more space available, it is possible to separate and keep roes and livers and also to keep milt. This means that use is made of practically the entire fish.

Emphasis on quality

To make it possible to make full use of the by-products, handling of cod has to be perfect from the moment it comes on board the catching vessel. Sigurjón Arason, chief engineer at Matis and professor at the University of Iceland, says that following the right procedures for bleeding and cooling the fish are the factors that make the difference in landing quality raw material.

TRACEABILITY

From source to shelf

With Innova Software Solutions, fish processors can track and trace every step of the process, from source to shelf.

Our production management software is built into, and records, every product movement throughout all production processes from reception to dispatch.

Live demonstrations at Seafood Processing Europe, Hall 4, Stand 6227



www.marel.com/traceability



INNOVA
Empowers food processors

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THE FISH STORY FLYES

**Seafood is our heritage,
our livelihood and our future.**

**Conservation and sustainable use of
marine resources is at the very heart
of fisheries management in Iceland.**

The Iceland Responsible Fisheries programme highlights the origin of seafood products from Iceland and well managed fisheries in Icelandic waters.



From Maritech to Wise:

A new name and a certified solution

26

Springtime is full of adventures and great opportunities. The biggest news from Maritech ehf. is that the company is currently being rebranded and has now changed its name from Maritech ehf. to Wise ehf. The daily business will remain the same but this is being done to strengthen the Wise brand name and to align more closely with our subsidiary company, WiseDynamics in Halifax, Canada.

The company has been using the Wise brand name for several years for Wise Analyzer, a data analytical tool and WiseFish, a seafood software solution. Now the whole product line is combined under the Wise name.

WiseFish certified by Microsoft

WiseFish NAV2013 was recently certified for Microsoft Dynamics. This outstanding achievement means that WiseFish has met Microsoft Corporation's highest standard for partner developed software solutions.

'We are thrilled to get this acknowledgement. This is a great opportunity for us to introduce WiseFish better to the world as a Microsoft certified solution for the seafood industry,'

says Jon Heidar Palsson, VP Sales & marketing.

Offering a comprehensive set of industry specific functionalities, WiseFish covers the whole seafood value chain from fishing and aquaculture through production to sales and distribution. Whether your company is involved in every step of the seafood value chain, specialized in particular steps, or a combination of both, WiseFish is suitable for all types and sizes of seafood businesses.

WiseFish combines the power and reliability of a world class accounting and ERP system with an out of the box seafood solution, custom built for your industry. Manage your G/L, accounts receivable/payable and product costing at the point of transaction to ensure reliability and ease of data entry.

- » Built for Microsoft Dynamics NAV 2013
- » Based on 20 years of development and experienced seafood experts
- » References include some of the biggest seafood companies in the world
- » Sold worldwide in local versions/ supported by partners where needed
- » Connections to Marel, Innova system





- » Connects with new product Wise Peripherals
- » Hand held solutions for Smart-phones and tablets
- » New Wise Analyzer plugins and OLAP Cubes

WiseFish integrates production planning, quality control, productivity calculations, and inventory management as well as offering complete product traceability.

Wise Analyzer 4.0

Wise has also put a lot of effort into developing and improving the Wise BI solutions and has recently released a new version 4.0. of Wise Analyzer, analytical tool, which is now available for trial and upgrades.



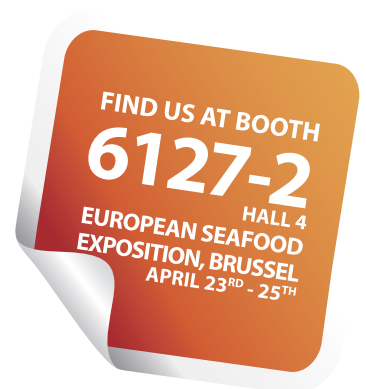
Wise Analyzer 4.0 provides an array of features to monitor and analyse information for managers in real time, in a true business intelligence environment. Wise Analyzer is designed specifically for processing and dissemination of valuable information, both directly from Dynamics NAV/AX SQL Database and from OLAP Cubes.

New functionality and features include:

- » Visual Query Builder for ad hoc reporting
- » Report Builder with pre-defined templates
- » Faster engine and improved interface
- » More powerful and user friendly Pivot grid tables
- » Easier and more flexible ways to filter data
- » More powerful graphics

Visit our websites:

www.wisedynamics.com
www.wise.is



Iceland gets 40% more value from every kilo of cod

Iceland's fisheries management system is one of the main reasons why Icelandic producers are able to extract significantly higher values from every kilo of cod landed than is achieved in Norway, one of the world's most advanced fishing nations. This was mentioned in a lecture by the head of the Norwegian Seafood Council at the Seafood Conference Iceland held in Reykjavík last year, and the difference is as much as 40%, according to a report by consultancy McKinsey & Company, which has prepared its Charting a Growth Plan for Iceland report that takes an in-depth look at Iceland's economy and its potential.

Streets ahead on productivity

The report describes how Iceland's fisheries lead in terms of productivity and efficiency, stating: 'Compared to Norway, the Icelandic fishing industry is highly productive. Gross value added per worker has followed the same trend over the past decade, but remained above the Norwegian level. The positive development of the fishing industry's gross value add in both countries seems to have been partially driven by increased capital intensity, indicating better utilization of capacity and a higher level of technology adoption. Iceland performs better on input utilization, with a 57 percent yield on their cod catch



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April 23-25,
Stand #2131, Hall 11





Export value:	EUR 432 million
Total catch:	190 t. ton
Total production:	108 t. ton
Yield:	57%
Value per kg caught:	2,3 EUR/kg



Export value:	EUR 576 million
Total catch:	339 t. ton
Total production:	139 t. ton
Yield:	41%
Value per kg caught:	1,7 EUR/kg

Overview of utilization and value from cod catch.

Calculations based on 2009 figures.

SOURCE: Statistics Iceland; Statistics Norway; Matis; McKinsey analysis.

compared to 41 percent in Norway. This translates directly to higher value per kilogram caught for Icelandic fisheries.' (Charting a Growth Plan for Iceland, page 64).

Integral drive for quality

This report was repeatedly quoted at the Seafood Conference Iceland, notably by Terje E. Martinussen, chairman of the board of the Norwegian Seafood Council. He laid

out just why there is such a difference between the two nations. 'The Icelandic fisheries management system has an integral drive for quality built into it. You sell fresh fish at top prices and operate larger vessels while we have a smaller fleet fishing for cod that catches the bulk of its fish in a short period. If there is anything that Iceland should be addressing, then that would be product development.'

CONTROL AND MONITOR

your filleting and trimming process

The Innova Filleting and Trimming solution empowers you to improve performance by gaining total control over yield, throughput and labor efficiency throughout your production.

Live demonstrations at Seafood Processing Europe, Hall 4, Stand 6227



www.marel.com/filletingandtrimming

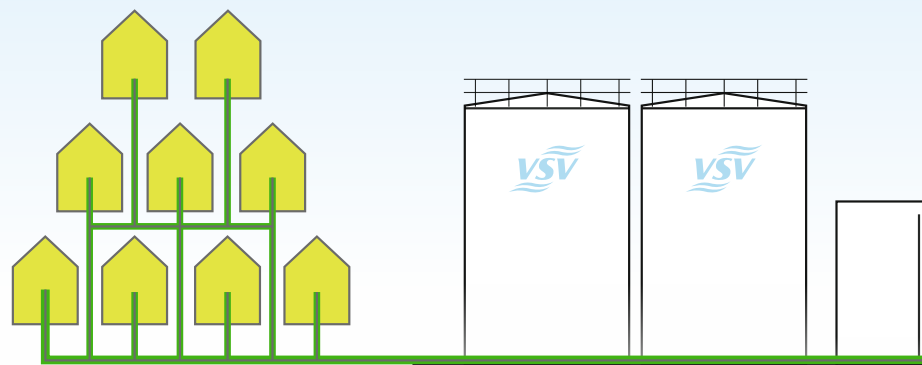


INNOVA
Empowers food processors





A resourceful use of resources



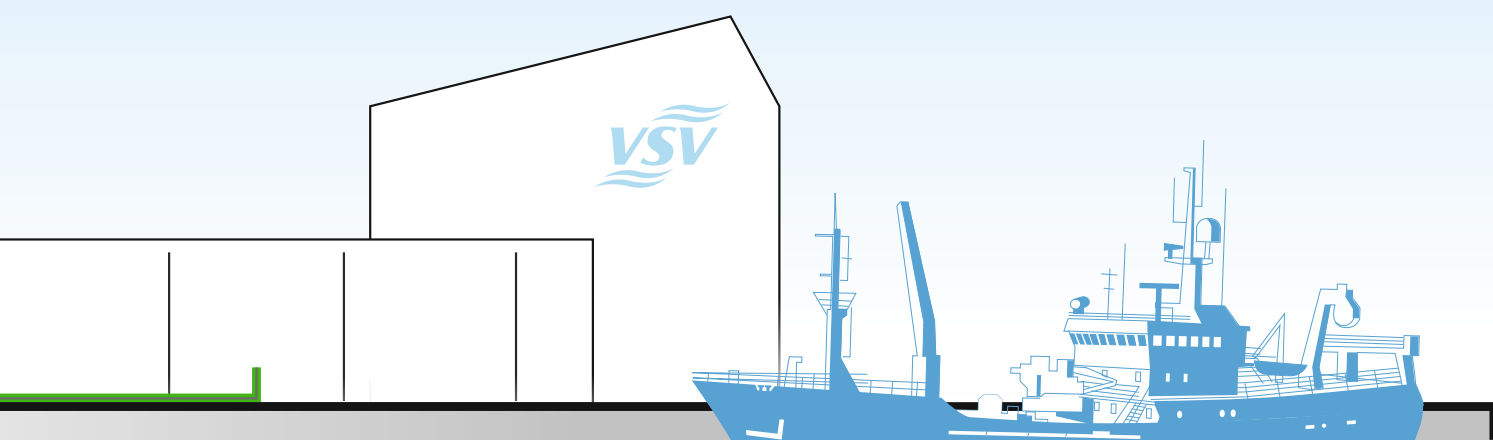
Half of the homes in the Westmann Islands get their heating and hot water from the fishmeal plant run by VSV, the community's largest company and one of Iceland's leading seafood producers.

Switching to the use of natural hot water reduced the use of fuel by 50%, also cutting emissions of carbon dioxide (CO₂) and sulphur dioxide (SO₂).

In 2002 VSV completed a programme of replacing the fishmeal plant's equipment and added a steam dryer, the largest one in Iceland in use by a comparable company. At the same time equipment was added making it possible to utilise the excess energy left over from the meal drying process.

To begin with this was used to heat VSV's own buildings, but since 2003 the fishmeal plant has been connected directly to the Westmann Islands' municipal hot water system, so water already heated to 75° C flows via a closed system from the factory to around half of the homes on the island.

The heat energy provided by the fishmeal plant to the community is equivalent to 5mW at full production, but is normally around 3 to 3.5mW.



The islanders aren't renowned for following in the footsteps of others, and this addition to the municipal heating system is no exception. January 1973 saw the Heimaey volcanic eruption. Volcanic activity is nothing unusual in Iceland, but this was the first eruption in an inhabited area, in this case a community of 5200 people. Before it was over, 400 houses had disappeared under the ash and lava, while the islanders were swiftly rescued as most of them left.

Rebuilding began immediately, with the heat from the new lava fields used to keep the town warm as the world's first and only lava-powered municipal heating system was designed. This pumped water into the lava to be heated and back through a closed system into most of the houses. Between 1977 and 1988 this supplied hot water to most homes on the island until the lava cooled too far for it to be continued.

The Westmann Islanders were able to turn the tables on nature, using the power left by a natural disaster to put warmth into the radiators and keep household fuel bills down!



Staying stable with Foss tanks

Hornafjörður engineering company Vélsmidjan Foss is busy with an order for anti-roll tanks for two of HB Grandi's pelagic vessels, Lundey NS-14 and Faxi RE-9. HB Grandi is one of Iceland's two largest seafood companies and the contracts were signed early in the New Year for the new anti-roll tanks to be fitted as the boats return to port after the capelin season. Vélsmidjan Foss had already supplied an anti-roll tank for freezer trawler Venus HF-519, also part of the HB Grandi fleet.

'It's a pleasure to have an order like this from HB Grandi. Anti-roll technology makes a big difference for a fishing vessel, both for the crew's wellbeing and not least for the whole catch handling and production process. This is certainly applicable to the pelagic vessels that catching increasingly to land fish to be frozen ashore for human consumption. So it's important to ensure

that quality is maintained by minimising any movement of the catch in the tanks,' said Vélsmidjan Foss's managing director Ari Jónsson.

The anti-roll tanks are located at the aft end of the foredeck of each ship, and each anti-roll tank is fitted with a system of valves and a Stability Watch management system, developed by Verkís, which manages the tanks' activity.

'The tanks are put together here on our workshop floor, after which there's the job of fitting them on board the vessels. We're pleased to have landed this order and looking forward to seeing what effect they have on the these vessels' seakeeping,' Ari Jónsson said.

In co-operation with naval architect Stefán Gudgeirsson and engineering consultant Verkís, Vélsmidjan Foss has established a



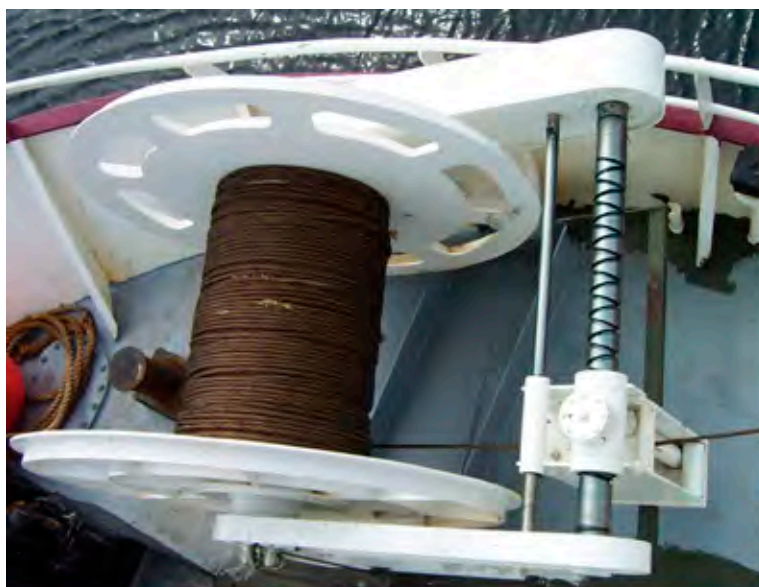


Vélsmidjan Foss has already supplied an anti-roll tank for freezer trawler Venus HF-519, a part of HB Grandi's fleet.

new company, Rolling ehf, to handle the production and sales of its anti-roll tanks and equipment. As well as having sold anti-roll equipment to Icelandic vessels, a system has also been sold to a customer in Australia and Ari Jónsson said that the sale to the other side of the world demonstrates just how far the company has come in developing and constructing effective anti-roll technology for fishing vessels.

'The tanks we manufacture are active tanks,' Ari Jónsson explained. 'They work in such a way that a volume of water is pumped into them, depending on the vessel's loading condition. The system's computer senses the vessel's movement and sends the information to the management system. This processes the data and sends commands to the hydraulics to open and close valves to slow the movement of water in the tanks, which effectively dampens the ship's motion.'

33



Operator Panel

Combi-Winch

The winches are compact and light compared to their power. The operator panel shows pressure in the system, velocity, length of wire/rope in the sea etc.

Vélsm. Foss ehf.

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ari@fossehf.is

Promens tubs a major link in the quality chain

'We're aware of a serious interest and a growing debate over quality management, looking at those issues that can help seafood producers improve their revenues. The key word is chilling, and then more chilling. The development we have put into insulated tubs and innovation in this field has helped the industry reach those goals,' says Sævaldur Gunnarsson, sales manager at Promens.

Better handling, better cooling

'Producers in Iceland have been very successful in improving the way raw material is handled and their reward for this has been on the open market. There are producers here who have put a great deal of effort into better handling and chilling of their raw material all the way through the production process. Then there are others who have significant opportunities to make progress by changing their methods and chilling their fish better. We are aware of the same way of thinking, both at home and abroad; everyone wants to boost the value of what they are landing. That's where the real opportunities are,' he says.

Promens has been developing a new lid for its 340, 460 and 660 litre tubs that will improve storage of offal, livers and other by-products.

A new type of lid for Sæplast tubs has been developed to make it easier to collect and store by-products such as offal and livers.



This lid has now been introduced to the market. It functions as a conventional lid with bungee fasteners, or welded on if a tighter seal is needed. Promens is well-prepared for additional production.

'Using the new rotary machine that we commissioned last autumn, the factory's production capacity increased, so that we are better placed now to meet our customers' demands,' Sævaldur says.

Diverse product catalogue

There is plenty to choose from in the Promens product line with tubs designed for both large and small vessels as well as production ashore and aquaculture.

'Our tubs fit right into production on land, but our largest market has always been the fishing fleet, which is where the basis of quality seafood is laid. Proper handling makes a huge difference to the shelf life of the product, notably whether or not the fish is of good enough quality to be shipped by sea instead of by air. People are increasingly seeing how closely all the aspects of the value chain are bound together and the whole process from catching to the consumer needs attention at every stage,' says Sævaldur Gunnarsson.

Visit our website: www.promens.is



Containers and pallets

Cold is Gold!

To maximise product quality it is vital to use correct handling from the first moment.
Using the right products separates the excellent product from the good.



One of the key challenges facing food producers is to get their produce to the customer as freshly as possible.

In cooperation with scientists and designers, we at Promens have emphasised our focus on producing high quality containers that maintain produce at low temperatures better than any others!

It is vital when it comes to freshness to chill the produce immediately and to maintain at a constant low temperature to achieve top prices for the producer and high quality fresh food for the consumer. A quality that is lost is never re-gained.

It is cold hard fact that Saeplast containers deliver in these areas and can be used for everyone's benefit from processor to consumer!





Your Business is Always on Our Mind

Our goal is to make sure your business gets the financial services it needs to be successful. We go the extra mile to understand the challenges and opportunities facing your business and work closely with you to provide financial solutions that will help your business to grow.

At Íslandsbanki, we have put together a team of experienced professionals with a deep understanding of the seafood industry. Building on a heritage of servicing Iceland's core industry, Íslandsbanki has developed a specific expertise within the seafood sector since financing the first Icelandic motorised vessel in 1904. We utilize that experience to help leading industry players succeed in a competitive environment.

Expertise Grows from Enthusiasm.

Ragnar Gudjonsson has more than 40 years experience in the financial services industry.

Ragnar is a Business Manager in Seafood Industry at Íslandsbanki.

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