




FEED-X



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Knowledge Transfer Programme

Project X FEED-X Knowledge Exchange

Programme design



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Problem and Opportunity

The problem: Feeding the world's growing population under conditions of climate change may be the biggest challenge humanity has ever faced. A significant, and often overlooked, issue in the food system is the scale and inefficiency of feed production for livestock, where animals are fed more protein than the protein they gain through growth. This has a huge cost to the planet and climate change: 1bn tonnes of feed is produced globally, accounting for over 40% of total plant protein grown (e.g. soybean) and 16% of global fish capture. While aquaculture companies have reduced their dependence on fishmeal since the 90s (65% to 16%), fishmeal has been replaced by soybean protein, which is a big driver of deforestation (17 to 46 million hectares between 1990-2010 in South America¹).

The need: The next 11 years leading up to 2030 is the most critical time humanity has ever faced. To reduce the ecological footprint of the feed industry we need a systemic shift: from feed pellets containing fish, soy protein and fish oil as the source of Omega 3, to sustainable sources including algae and insects as alternative protein sources. Work is being done to innovate and adopt new approaches, technologies and solutions, but change is not happening quick enough to address the climate change and biodiversity crises we are facing in a timely manner. There are a number of barriers to the fast and scaled adoption of the most appropriate (sustainable, efficient, effective) solutions. The Project X model addresses each of the barriers, enabling change at the pace the planet needs it.

The opportunity: Skretting, representing 35% of the salmon industry and 10% of the shrimp industry feed production (£4.5bn procurement power), expressed an economic and reputational need to source alternative Omega 3 solutions. Project X has already obtained *and contracted* advanced market commitment from Skretting to identify and transparently test, at scale, alternative sustainable feed solutions for the aquaculture industry – FEED-X. Skretting also committed to supporting FEED X to shift 10% of the feed industry (representing 107 tonnes) through to sustainable purchasing, focusing primarily on alternative sustainable protein and oils. However, to get this broader industry adoption, we need to engage other players along the value chain in addition to the lead corporate adopter, Skretting. This will be through the process of knowledge exchange and retailers, supported by IKEA.

For FEED-X, we have already successfully completed stages 0-4 – Search and Select and are defining the test journeys for the 10 selected challenger innovations where 7 will move into Stage 5 testing solutions with the Lead Corporate for FEED-X – Nutreco-Skretting² (“Skretting”) and three already tested by Skretting, will be technical validated to ensure the value chain has confidence in the results. The knowledge gathered (of the supply chain pressure points, where sustainable interventions would be most successful, market acceptability, etc) awakened the interest of retailers, such as Ikea, Sainsbury's and Tesco, which are key to wider industry adoption. Ikea is an active lead corporate in the programme and has contributed both economic and in-kind resources³. We are in conversations with interested insurers and other financiers who want to play a role in the new supply chain (e.g. funding sustainable innovation or insuring the supply chain). We have secured funding of c.£2.2m for FEED-X (from various funders, including WWF-UK and EIT Climate-KIC)

Why Retailers

- Retailers play an important influencing and purchasing role in the adoption of new solutions into value chains.
- Without a clear and risk mitigated set of messaging and actions or a clear and reliable independent position, many retailers have found it hard to take leading position on key step changes in sustainable supply chains.

¹ WWF, 2014

² <https://www.skretting.com/en/settings/news/general-news/feed-x-project-panel-meet-in-london/>
https://www.skretting.com/en/sustainability/ingredients/novel-raw-materials/part-5-introducing-feed-x/?utm_source=linkedin&utm_keyword=rawmaterial%2Csustainability&utm_medium=Skretting

³ in discussions with IKEA to extend programme support to other protein sources, including sustainable beef and chicken

- Project X is convening a retail consortium around this challenge to enable the willing retailers among them to take a leadership role in each of the industry value chain challenges Project X works on over the next 10 years.
- The pilot for this consortium will focus on alternatively fed products that are more sustainably produced, in line with the Feed X pilot programme for Project X.

Why Engagement with Other Communities

We also look at the insurability potential of the new alternatives to reduce the risk of scaling at the appropriate price points.

- We reduce the risk of trading, accelerating the demonstration (real life environment) of independently assessed sustainable alternatives. We reduce the risk of trading by providing independent, objective and transparent analysis of the performance of the sustainable alternatives – 7 perspectives (economic, environmental, social, ethical, nutritional, value chain adaptability, legal / policy)
- We reduce the risk of trading by identifying the best innovations able to address the key challenges of our planet and the needs of the corporate, within the approved categories.
- We reduce the risk of trading by mobilising the first commercial exchange of value between buyers and suppliers of sustainable alternatives – starting with low complexity / low impact test, moving to a large scale procurement for successful and externally validated innovations
- We reduce the risk of trading by mobilising the funds for both innovators and buyers as well as the commercialisation, ensuring early market commitment to procure.
- We reduce the risk of trading by providing investors and financiers with a low risk pipeline of innovations with guaranteed access to market
- We reduce the risk of trading by adding credible and novel insurance models into the programme

Finance	Insurance	Thought Leaders	Experts - Researchers	Purchasers	Buyers
Finance and invest in approved categories, provide CAPEX and OPEX investment to enable the 10% shift at volume through investing in the FEED-X Fund	Insure approved categories, insure against climate change impacts, insure CAPEX, OPEX required to shift the 10% of industry	Retailers lead Food producers, consumers NGOs – certifiers lead opinion Farmers lead farmer associations, market Feed Producers lead suppliers	Quality assurance Transparency of the process Objectivity of the assessments Independence of the results	Test options, verify results, adapt production processes and operations	Shapers of the market Locally significant players Global volume players
Improved risk profile & appetite for a new investment category	Improved risk assessment & appetite for a new insurance category	Clear evidence of leadership and increased understanding of risks of adoption and social acceptability	Clear evidence of academic research creating traction in industry & understanding of risk	Clear set of recommendations to focus procurement R&D strategies	Clear set of recommendations to focus supply chain strategies

Why it is timely: Fish consumption provides 3 billion people with 15% of their average intake of protein. Europe constituted 35% of the seafood market in 2007, but only 10% of world population – highlighting the potential in other regions to increase per capita consumption. Based on expected income growth, there will be a seafood deficit of around 79 million tonnes by 2030. Aquaculture could be an alternative to satisfy the

increased demand for fish proteins⁴. However, aquaculture needs to be (a) healthy/good for human consumption (b) sustainable, so as not to further deplete the planet's ecosystem.

Request Project X is seeking support for the cross-cutting Knowledge Exchange UK component of FEED-X, which will identify the barriers and opportunities for industry-wide adoption of sustainable feeds, using a UK retail consortium to help 'pull' market adoption across the value chain. This fits well with Innovation in Alternative Approaches to Food or transformation of the food system.

The full Knowledge Exchange programme will run from Jan 2020-Dec 2025. However for 2020 to 2022 it will cost an estimated £1 M in total.

Goal

To transform 10% of the animal feed industry (107 million tonnes of feed) by 2025.

Objective

To use the evidence from shifting 10% of the aquaculture feed industry as a way to create the market pull for other species

The Work Plan

Funding will (a) allow us to implement a stakeholder led engagement design, set up and run a Sustainable Alternative Feed Demonstration Platform, set up a Retailer Innovation Consortium, pilot a Knowledge Exchange process both upstream and downstream to take us from shifting the sustainability of aquaculture feed (e.g. Salmon and Shrimp) to that for multiple species, and secure broader industry adoption (compress time to transfer knowledge, accelerate dissemination of know-how and achieve scale):

Value Chain Stakeholder Led Engagement and Communication

Objective is to influence the value chain actors with evidence

- A. Task 1.1: Develop communications engagement and strategy plan with key retailers, value chain influencers and implement engagement process (3 events per year) that supports the shift of 10% of the feed industry, from aquaculture to multiple species and design strategy to engage them collaboratively
 - Activities: map key value chain influencers, retailers, financiers, insurers and influencers in key markets, explore food and climate events to capitalise engagement, develop and implement social media approaches and plans.
 - Outputs 1.1:
 - Communications, engagement and strategy plan
 - Social media plan
 - Communications materials including photos, designs etc
- B. Task 1.2: Value chain assessment & Problem definition (aquaculture to animal production): Problem is defined from an independent assessment of the risks, opportunities and gaps in the value chain as well as from the perspective of those within the value chain, upstream (raw material suppliers) and down stream (farmers) – combined these define the initial categories of interest for other species.
 - Activities: Expert interviews, share knowledge
 - Outputs 1.2:
 - Summary value Chain & Value Chain Adaptability and problem definition assessment for other species
- C. Task 1.3: Social acceptability assessment – Category de-risking, search & selection: 6 dimensions of Risk are understood using a framework defining categories of innovation and these exist for aquaculture. The integrated results need to be shared with various industry stakeholders. To shift from aquaculture to other species other categories of innovation need to be explored. The 3 key dimensions or lenses to expand for this are Nutritional, Environmental and social or user acceptability. The social acceptability assessment

⁴ Source: PriceWaterhouseCoopers Market readiness report (2018)

combines consumer perspectives and that of market leaders and influencers of. The results are then combined to give an overall assessment of risk. User acceptability considers the views of farmers to ensure they have no issues with using the feed

- Activities: Engage finance and insurance communities, Influencer interviews, Event attendance and peer review, share knowledge
- Outputs 1.3: (new categories for Chicken, Pork, Beef & Pets)
 - Nutritional performance – new categories
 - Environmental performance – new categories
 - Social/User acceptability – new categories

Sustainable Alternatives Feed Demonstration Platform

Objective is to harness and create value by facilitating exchanges between two or more interdependent groups, usually consumers and retailers on their experiences with sustainable alternative feed solutions.

D. Task 2.1. Retailer Innovation Consortium set up: Retailers can play an incredibly important role in the value chain as they are the customer interface; once the right solutions have been technically validated and verified a collective or independent effort for communication to customers can start to be defined. As early as Jan 2019 corporates can be engaged.

- Activities: Design workshop, initial panel discussion attendance, peer review and communication and engagement plan at 3 events per year
- Outputs 2.1:
 - SAFDP set up
 - RIC approved social media plan
 - Event reports

E. Task 2.2. RIC Commitments for Aquaculture (Salmon and shrimp): comprehensive engagement effort with retailers based on findings from stages 5, 6 and 7 for salmon, shrimp and aquaculture with a commitment to sign up to shifting 10% of purchasing to more sustainably fed salmon and shrimp.

- Activities: Engaging with social media and press, retailers discussing the results of technically verified results for alternative feed ingredients, retailers making a public commitment to procure sustainably fed fish and shrimp
- Output 2.2:
 - Summary of verified results for 3 sustainable feed ingredient alternatives for Salmon and Shrimp
 - Baseline assessment
 - Social media impact report
 - Signed commitments

F. Task 2.3. RIC commitments for Other Species (Chicken, Pork and Beef): Retailer innovation consortium participation is expanded, comprehensive engagement effort with retailers based on category de-risking findings from stages 0-4 for other species (Chicken, pork and Cattle), engagement based on findings from stages 5, 6 and 7 for other species, a commitment to sign up to shifting 10% of purchasing to more sustainably fed animal products; contributing to shifting 107 million tonnes of feed

- Activities: social media posts, press releases, sustainable purchasing commitments signed and reported on, engaging with the results from stage 1-4, engaging
- Outputs 2.3:
 - Retailer road map
 - Summary of verification and validation results for other species
 - Summary of de-risking for other species
 - Impact assessment

Knowledge Transfer Promoting Market Access

Objective to increase knowledge and understanding of the adoption of alternative feeds into industry and engage 10% of the secondary market feed industry representatives,

G. Task 3.1. Knowledge transfer stakeholder led exchange platform set up: (Q2 2020) (15 K): Dashboard that can track and demonstrate progress.

- Activities: set up platform, engage key actors (finance, insurance, retailers, researchers, producers, buyers, influencers)
- Outputs 3.1:
 - Platform set up

- H. Task 3.2. Knowledge Transfer for market adoption: Once the selected alternative feed ingredients have been tested with the lead corporate producer, the broader industry will be engaged to adopt the solution for industry wide adoption. This part of the programme is to educate and influence downstream activities: get a selective group of meaningful value chain stakeholders to engage in collective action (including taste testing, engagement with the public and purchasing) and joint commitment to shifting 10% of feed.
- Activities: 2 x panel discussions and peer review Industry showcase event (taste testing), influencing actions.
 - Outputs 3.2:
 - Show case events report
 - Consolidated results report
 - White paper on SME performance
 - Certification for performance
- I. Task 3.3. Knowledge Transfer for promoting sustainable procurement: As of 2019, a clear position on the right solutions will have been selected; this empowers retailers to encourage and positively influence their supply chain, through advocacy and commitment to procurement. This part of the programme to educate and influence upstream activities: engage mainly with farmers and ingredient suppliers to get buy-in (also start engagement with and between broader stakeholder groups, e.g. financiers and researchers, farmers and financiers, regulators and retailers). Share the transferable knowledge of from the company baseline assessments, impact assessments and performance assessments of additional new ingredients.
- Activities; technical validation, verification and scale validation for challenger alternatives, potential opportunities for thought leadership, purchasing sustainable products.
 - Outputs 3.3:
 - Verification for 10 innovations
 - Consolidated results report
 - White paper on SME performance

Management

The above will require legal, events and marketing expenses to: (i) convene meetings, 3 round-table, gatherings, (ii) publish reports, (iii) form a UK retailing innovation consortium, (iv) develop broader communication strategy and (v) secure contractual sustainable purchasing decisions by Retailer Innovation Consortium once the testing phase by Skretting is successful. This programme will also pay a contribution per year towards the project manager's salary, towards the communications advisor and towards the community engagement manager salaries. This will be complemented by pro bono resources from WWF expert advisors, from Skretting and from Ikea, as well as delivery support from our strategic partners, including WWF, UNEP, EIT Climate KIC, Cambridge University.

- Activities: quarterly project updates with corporate leads and strategic partners, reporting to donors, internal communications, facilitating and coordinating activities, convene meetings, panel discussions and events, facilitate and coordinate outputs, secure contracts, secure contractual sustainable purchasing decisions.

Knowledge Exchange will be fully integrated within the FEED-X programme: each activity will be mapped, designed and managed with Gantt charts, periodic evaluations, feedback and other appropriate project management tools, by the Project Manager Dean Faithfull – and with expert support and inputs from all the people in the team and strategic partners.

Communications

Communications is a critical aspect of the knowledge transfer programme. Once the key technologies or innovations have been selected to progress and can be made public, it will be important to manage consumer communication proactively, so that consumers are made aware of the problem, are open to solving the problem and recognise that the proposed solution can bring them a clear benefit (healthy, safety, value). However it needs to be noted that

“With consumers, they don’t want to think about what their fish is eating, so make it as natural, simple and safe as possible for them.

With the new feed sources, it’s the farmers and stakeholders that have it on their radars” (Expert)

The scale of the problem needs to be told- the context of the feed problem in the overall impact of agriculture. There is a need and desire to want to challenge the current understanding of the problem i.e. emissions from ruminants and the perception of risk.

The purchaser of sustainable products the communications needs to address the following

- Reputational risk of doing nothing
- Ease of doing something
- Reward for acting
- Not rewarded for making bad decisions

Aquaculture farmers are the consumers of feed – RETAILERS are the buyers of fish/shrimp products [NGOs influence retailers] – Consumers are the ultimate buyers – but they trust retailers and NGOs

Who do we want to influence with our communications and engagement activities

- Governmental bodies
- Certification institutes
- NGOs (ASC/MSC)
- Compound feed formulators /feed processors – aquaculture farmers – end consumers
- Sector associations
- Consumers – Demand the change/trends in the market this leads changes in industry via; producer, processor and retailers – innovators meet this change

How: This will be through involvement, awareness, knowledge and messages that needs to involve others, and show the benefit for industry stakeholders. Specifically for key ecosystem stakeholders events will also be strategically chosen.

- Policy makers and legislators – policy recommendations brought to EU, EU members states, US federal governments – start policy dialogue – bottom up from companies and citizens.
- For industry stakeholders – make the data accessible on which ingredients have market access and which ingredients maybe don’t, but could be profitable and environmentally sound.
- Trickle down effect from EU and US to other countries with lower standards who want to compete in the market and bottom down transfer of knowledge from industry stakeholders to policy/legislation markets (or vise-versa)

Why do we believe this approach is the right one:

Our approach and activities have been tried and tested at RBS and Cummins. With FEED-X, we aim to take them to the next level and ensure 10% of industry-wide adoption. The Knowledge Exchange programme is crucial, as it underpins the systematic 9-stage approach of Project X. The complexity of getting value chain support requires the right people and the correct interventions: Knowledge Exchange’s credible design ensures early engagement with key stakeholders, led by the retail consortium, but also engaging with financiers, insurers, farmers, suppliers, regulators, associations, non profits and feed companies, to understand the sustainability risks and opportunities, coordinate purchasing, testing and sharing results. Adaptive management will be built in to enable stakeholder feedback and influence on activities, so that the programme stays relevant and does not suffer from participation fatigue. So, when FEED-X is at stage 9 (industry roll out), we are able to achieve the 10% industry shift to sustainable feed. Sustainable Alternative Feed Demonstration Platform is an approach that creates value by facilitating exchanges between two or more interdependent groups within the value chain of the industry of focus, including consumers, retailers, caterers, hoteliers and producers.

Outcomes

a) Outcomes	b) Progress indicators	c) Targets	d) Means of verification
Value Chain Stakeholder Led Engagement and Communication			
1. The aquaculture/livestock feed industry are actively engaged and sharing critical independently verified knowledge transparently within the FEED-X programme	1a. # stakeholders sharing key documents resulting from the FEED X 9 stage process 1b. # stakeholders actively participating in knowledge exchange events and sharing experiences 1.c. # stakeholders proactively involving their relevant networks for peer review and exchange process	1a. 20 by 2020 1b.10 in 2020 and 15 by 2021 constituting at least 10% of industry 1.c. 6 in 2020 and 6 in 2021	1a. Documents shared 1b. Participant lists 1.c. Peer review lists
2. Key actors are communicating the success of the FEED-X programme	2.a. # press releases produced by key actors promoting the programme 2.b. # social media actions generated from posts 2.c. # key actors promoting the FEED-X programme through various channels	2a. 2 by 2020 and 4 by 2021 2b. 20 social media actions in 2020 and at least 40 by 2021 2c. 5 key actors promoting FEED-X by 2020 and at least 10 by 2021	2a. press releases generated 2b. social media posts/statistics 2c. Social media examples, press clippings

Sustainable Alternatives Feed Demonstration Platform			
3. Enabling communities engaged with the salmon and shrimp as well as other species value chain stakeholders across the UK engage in coordinated action to support alternative feed initiatives	3a. # Stakeholders participating in the retail innovation consortium, finance community and insurance community to support de-risking process 3b. # Consortium members committing to demonstrable actions contributing to shift to sustainable sourced food– ie sustainably feed salmon and shrimp, containing novel ingredients	3a. At least three UK members by 2020 and three with global or regional reach by 2021 3b. At least three retailers commit to joint action	3a. Consortia documentation 3b. Commitment to Collective Action and demonstration
4. Road map to shift 10% of the feed industry to increase sustainable purchasing of sustainably fed meat products including shrimp and salmon products fed on alternative and more sustainable ingredients	4a. # UK retailers and value chain stakeholders identified that contribute to the 10% of the FEED industry shift 4b. # UK retailers committing to shift to purchasing sustainably fed animal products (including shrimp and salmon)	4a. At least 3 UK retailers 4b. At least one retailer with volume in the market (near 10% of the UK market)	4a. Road map document 4b. Commitment to sustainable purchasing

Knowledge Transfer Promoting Market Access			
5. Market adoption for sustainably fed food is promoted by value chain stakeholders through events and demonstrations	5.a. # of knowledge transfer events 5b. # demonstration events promoting alternative sustainably fed meat and seafood products	5a. 3 events in 2020 and 3 in 2021 5b. 1 demonstration event 2020, & 3 in 2021	5a. Event invites, & photos 5.b. Events promotional material, photos

<p>6. Scale up commitments by key actors to the FEED-X programme contributes to shifting 10% of the feed industry, circa 107 million tonnes</p>	<p>6.a. # tonnes committed to buying of feed produced with alternative innovator ingredients 6b. # of tonnes of food waste/food by product that would be diverted to the production of alternatively produced feed ingredients 6c. # of Sustainable \$s committed to fund actions (i.e. technical validation, scale validation, investment in selected innovations or hold promotional events)</p>	<p>6a. in 2021 there is a commitment to buy at least 10 tonnes of alternative ingredients, 6b. At least 20 tonnes by the commitments made in 2021 6c. 2.5 million \$ committed in 2020, and 5 million \$s committed in 2021</p>	<p>6a. Letter Of Intent signed 6b. impact assessment 6c. Global report</p>
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Impact

The funding of the cross-cutting Knowledge Exchange UK component of FEED-X will allow to deliver the results detailed above which are critical to achieve FEED-X ultimate goal: to transform 10% of the entire animal feed industry (107 million tonnes of feed) by 2025.

The fund will mainly contribute to four SDGs:



- SDG 2 Zero Hunger, (2.4 ensuring sustainable food production systems), by measuring aquaculture feed converted from unsustainable to sustainable.
- SDG 12 Responsible Consumption and Production specifically: SDG12.3 (reducing food waste) which will be measured by the tonnes of food waste used by the innovations; and SDG12.6 (encourage companies to adopt sustainable practices) measured by the number of companies submitting expressions of interest for sustainable solutions and procurement \$ for the new challenger ingredients.
- SDG 14 and 15: FEED-X also seeks to quantify the projected environmental impact of replacing feed ingredients on reduced deforestation and pressure on fish stocks, therefore contributing to SDG15, deforestation avoided and SDG14.4 reducing illegal unregulated and unreported fishing.

FEED-X Results Framework is in line with the impact investing industry best practices (e.g. use of IRIS+, etc) as well as more “traditional” MEL (monitoring, evaluation and learning) approaches. A MEL system will be in place to monitor progress in the achievement of the development results and actual contribution to the SDGs during FEED-X implementation and upon completion. Project X will prepare progress/ update reports and a final completion report.

Project X is currently preparing a case study to be published by the GIIN (Global Impact Investment Network). The case will show how FEED-X is aligned to the GIIN core characteristics of impact investing and how its impact framework has applied IRIS+ and the IMP principles to measure results as well as FEED-X learning and continuous improvement approach. The case is currently under preparation.

Risks

1. UK and Global retailers processes and risk aversion delay timing for adoption. Mitigated by the fact that we are addressing a problem the market has already identified. Ikea and Skretting already involved. An additional mitigation factor is our strategic partnership with WWF. Their network is directly engaged with major retailers, globally.
2. Innovators and SME providers of sustainable feed solutions cannot meet the level of demand, i.e. cannot grow the business quickly enough or produce sufficient volume to meet rapid increase in orders. Mitigated

by engagement with funders to finance expansion of innovators based on purchasing contracts in place. The mobilisation of finance to test and scale is part of the model.

All of the above would result on delaying the adoption of sustainable purchasing by UK retailers. Knowledge Exchange's purpose is exactly to identify and minimise barriers to adoption, so none of the above risks would mean failure. Because this is a market-pull, i.e. feed producers and retailers are actively seeking sustainable solutions, we don't perceive a risk of retailers not adopting proven sustainable solutions.

Sustainability

Knowledge Exchange is the first (and crucial) enabler for the broader scaling up and industry adoption. It supports de-risking and secures early commitment to sustainable purchasing from the value chain and then continues until the scale-up (10% of industry) is successful. Since it is based on market demand, once risk is decreased and benefits proven, wider adoption should happen.

Such a transition is key to both reducing the increase in greenhouse emissions and reducing further deforestation.

“At Skretting, we have seen that the biggest limitation in implementation of novel ingredients is scale. FEED-X allows a game-changing discussion to mobilise the necessary resources, and highlights why we're involved in the project – we can make a real impact to global sustainability. And of course we see a direct link with our mission of Feeding the Future.” **James Rose, Skretting**

“I am excited about the number of high quality feed solutions that have been submitted for evaluation and I am looking forward to see which innovations will be selected for commercialisation. In the IKEA Food business we believe initiatives like the FEED-X challenge can strongly contribute to the transformation of the global aquaculture sector and help mitigate the negative impacts that salmon farming can have on the climate, environment and biodiversity.” **Christoph Mathiesen, Sustainability Developer, IKEA of Sweden**

“When WWF, the leading conservation organization in the world, becomes involved in a project like FEED-X, it's motivation is the radical change that can impact an entire global industry. And while these type of initiatives usually take a long time to become a reality, what we've seen through the project development has definitely impressed us. The level of commitment and innovation from the finalists is a clear contribution to the ongoing shift of global feed production to sustainable sourcing in the face of a climate crisis. And this is just the beginning. FEED-X is setting the standard for industry collaboration and innovation, and we believe other sectors will follow in its footsteps.” **Cristina Torres, Marine Program Coordinator for WWF-Chile**

“The approach Project-X has developed in the FEED-X initiative is essential for the transformation of climate-detrimental value chains. We are proud of supporting this initiative essential for the sustainable development of agriculture, aquaculture and of our planet.” **Daniel Zimmer, Theme Director Sustainable Land Use, EIT Climate KIC**

Timeframe

Duration

UK Pilot

The UK funded part of the FEED-X programme will be for 24 months, 2020 to 2021 and serve as a pilot for a global equivalent Knowledge Exchange programme. The full knowledge exchange aims to engage the wider value chain and achieve wider industry adoption (i.e.10% of the feed industry, representing 107 tonnes of feed) by 2025.

Global Knowledge Transfer

Parallel to the pilot with UK retailers, we have a commitment to fund the non-UK component of Knowledge Exchange over the same period. We also expect that the grants from these two years will serve to de-risk further funding (from corporates) to further roll out the work into industry-wide scale and beyond 2021. In addition, in the future we expect some income-sharing from sustainable procurement from Nutreco-Skretting, which should help sustain this programme further. The pathway to shifting 10% of the feed industry will be mapped out by one of the deliverables of the programme and this will identify a clear pathway for the programme to meet its 2025 target of 107 million tonnes of feed for sustainable fed livestock and seafood.

Approximate Timelines	Shift 4 to 20 M tonnes			Shift remaining 87 M tonnes		
	2020	2021	2022	2023	2024	2025
Value Chain Stakeholder Led Engagement and Communication						
FEED-X (aquaculture to animal production)						
Task 1.1: Develop communications engagement and strategy plan	Demo					
Task 1.2: Value chain assessment & Problem definition		Cycle 1		Cycle 2		
Task 1.3: Social acceptability assessment – Category de-risking, Search & select		Cycle 1		Cycle 2		
Sustainable Alternatives Feed Demonstration Platform						
Task 2.1. Retailer Innovation Consortium set up						
Task 2.2. RIC Commitments for Aquaculture (Salmon and shrimp):	Demo					
Task 2.3. RIC commitments for Other Species (Chicken, Pork and Beef):		Cycle 1			Cycle 2	
Knowledge Transfer Promoting Market Access						
Task 3.1. Knowledge transfer stakeholder led exchange platform set up:	Demo					
Task 3.2. Knowledge Transfer for market adoption:	Demo	Cycle 1		Cycle 2		
Task 3.3. Knowledge Transfer for promoting sustainable procurement		Demo	Cycle 1		Cycle 2	

The Team

Marcela Navarro, CEO: *practical expertise, IP and networks*

- Twenty years of practitioner experience in value chain, sustainability and finance.
- Created the market pull model (Core of the Project X Model) that was successfully tested and deployed in risk averse industries – finance and engineering. The model has generated demonstrable results at an environmental, economic and social level. Transferred IP to Project X
- Public recognition: 2015, Business Green Leader of the Year for her work on supply chain and adoption models, 2014 and The World of Difference awards for her work on supplier inclusion.

Steve Evans, Chair: *knowledge, contacts and industry networks*

- Thirty-year career, in industry and academia, integrating sustainability into design and manufacturing practices. Brings significant networks and knowledge for this project.
- Steve is Director of Research in Industrial Sustainability at the University of Cambridge's Institute of Manufacturing and Director of the Centre for Industrial Sustainability.

Karen Lawrence, Senior FEED-X Researcher and Programme Director: *research, programmatic and implementation expertise and WWF liaison*

- Twenty years experience designing and implementing natural resource management plans linking biodiversity conservation, stakeholder engagement processes, community livelihoods in forestry and fisheries – and sustainable finance mechanisms.
- Prior programme design and impact advisor for WWF, Karen developed monitoring methods and multi-stakeholder engagement – skills required for FEED-X

Dr. Piers Hart, Global Aquaculture Lead, WWF UK Feed-X Technical Working Group: *advisory role and aquaculture expertise*

- Dr Hart will advise the Knowledge Exchange programme. He has c.40 years' experience in aquaculture working in the commercial sector, government, research, lecturing, consultancy and the NGO sector in both Australia and the United Kingdom. Expertise in salmon farming and sustainable aquaculture. In addition to WWF, Dr Hart is a Director of SARF and is on the Steering Group for the ASC Feed Dialogue.

Dean Faithful, Project Manager (part time): *management of Knowledge Exchange programme*

- Project manager of the Knowledge Exchange programme and support on monitoring, evaluation, feedback, and reporting.
- Experience in project management, Science communication and multi-party engagement in both the commercial and the NGO sectors.

Community Engagement Manager (to be recruited, part time): *support multi-party engagement*

- Role to ensure the various parties get things done, relationship management with the innovators, and stakeholders to support with event/gathering organisation

Communications advisor (to be recruited, part time): *communications strategy, dissemination of findings in value chain*

- Thought leadership and knowledge sharing reports, communications strategy to retailers and across value chain

Costs

	2020	2021	2022
Outputs 1.1: Communications, engagement and strategy plan Social media plan Communications materials including photos, designs etc			
Outputs 1.2: (new categories for Chicken, Port, Beef & Pets) Summary value Chain & Value Chain Adaptability and problem definition assessment for other species			
Outputs 1.3: (new categories for Chicken, Port, Beef & Pets) Nutritional performance – new categories Environmental performance – new categories Social/User acceptability – new categories			
Outputs 2.1: SAFDP set up RIC approved social media plan Event reports 3 events in 2020, 3 in 2021 and 2 2022			
Output 2.2: Summary of verified results for 3 sustainable feed ingredient alternatives for Salmon and Shrimp (3) Baseline assessment Social media impact report (3) Signed commitments and their follow up (2)			
Outputs 2.3: Retailer road map Summary of verification and validation results for other species Summary of de-risking for other species Impact assessment			
Outputs 3.1: Platform set up			
Outputs 3.2: Show case events report Consolidated results report White paper on SME performance Certification for performance			
Outputs 3.3: Verification for 10 innovations Consolidated results report White paper on SME performance			
Personnel Project Manager (contribution) Communications Advisor (contribution) Community engagement manager (contribution)			
Totals	310K	340K	330K

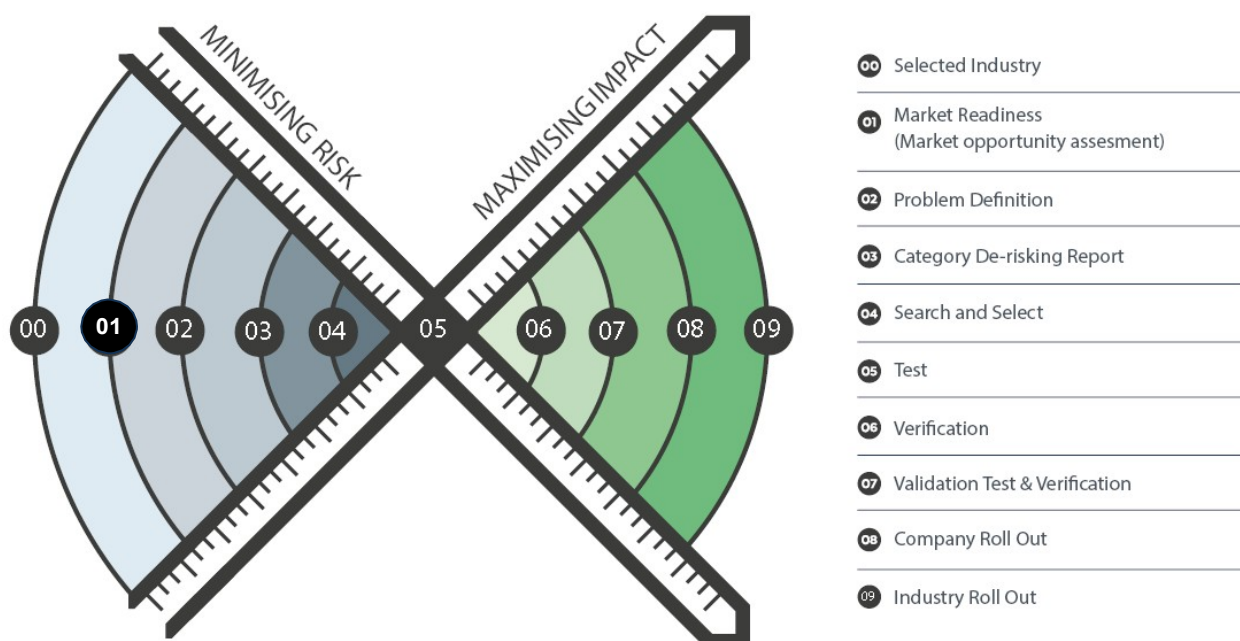
Appendix

The Organisation

Project X was incubated in WWF in 2015 to enable value chain transformation by increasing the speed and scale at which entire industries transition in their sustainability agendas. Since February 2018 Project X has been established as a social enterprise that still works closely with WWF.

Our mission is to transform the sustainability performance of ten industry value chains most responsible for biodiversity decline and climate change impacts, in ten years. We work on the premise that no single organisation or sector can tackle industry-wide change on their own. Project X has taken a leadership position to bring together the relevant corporates, financiers, insurers, innovators, NGOs and scientists (and, in the near future, governments and regulatory bodies) to collaborate and transparently generate and adopt replicable and scalable solutions, fast.

We provide a solution, which is scientifically researched, reviewed and tested, and which offers systemic impact, thus embedding long-term sustainability in it. We do this through a proven market-pull approach with a number of core activities, detailed here:



Minimising Risk (stages 0-4) – We first secure advanced commitment from a lead corporate to procure sustainable solutions at scale. We then invest heavily in independent analysis experts to unpick the value chain and examine diverse risks to the adoption of various sustainable solutions. A short-list of solution types suitable for pilot testing is identified and those providers are invited to pitch their solutions to a selection panel. This is all undertaken transparently to ensure industry-wide buy-in and consensus on the most appropriate and sustainable solutions.

Maximising Impact (stages 5-9) – We short-list the highest performing solutions, which are tested at scale by the lead corporate, with ensuing results demonstrated and independently verified. The lead corporate is given first mover advantage on the evidenced solutions, following which we collate expressions of interest from other interested corporations. Advance market commitment from corporations accelerates the price performance of the sustainable solutions to further encourage industry-wide adoption.

Knowledge Exchange – Cross-cutting the whole programme is a module of Knowledge Exchange, which engages the wider value chain early in the process. This enables Project X to understand the problem from various perspectives along the value chain, uncover sustainability risks and opportunities, promote results,

coordinate testing of the solutions at different sections of the value chain and share learnings, thus accelerating wider adoption and shift 10% of the industry. We aim to roll out industry adoption as soon as the lead adopter is up and running, so that companies representing 10% of an industry (i.e. with enough significant purchasing power to pull the market through sustainable procurement) can adopt solutions *previously determined, tested and demonstrated by the lead corporate adopter.*

Key Milestones –

- a) 2015-16 – combining experience from the two co-founders, respectively of (a) research, networks and expertise from WWF and of (b) innovation and sustainability practical application through supply chains, with significant representatives in the financial and industrial sectors (RBS and Cummins).
- b) 2017 – Signing programme contract with Lead Corporate for FEED-X. FEED-X is explained in Section 3 below.
- c) 2017-2018 – fundraising for both pilots (raised commitment of £3.5 million in total from funders such as EIT Climate-KIC, Ikea, WWF, Gavi and private donors)
- d) 2018 – Final agreement with WWF for Project X Global spin off.
- e) 2018 – signing letter of intent with K-CEP for Gavi-X. Gavi-X is a partnership with Gavi (the Vaccine Alliance) and the Kigali Cooling Efficiency Programme (K-CEP) to accelerate the scale of clean, efficient and affordable solutions into the vaccine cold chain.
- f) 2018 – progressing the pilots (Gavi-X is at stage 1 of our 9-stage process and FEED-X is at stage 3 about to start stage 4&5).
- g) 2018 – Formalising strategic partnerships with relevant stakeholders including WWF, EIT Climate Kic, University of Cambridge, UNEP – One Planet, Thomson Reuters
- h) 2018 – initial contacts with retailers and corporate partners along the value chain, such as Ikea, Tesco and Sainsbury. WWF connecting us with relevant local players – ie WWF Australia, connecting Project X with Aldi, Coles and Woolworths, WWF Switzerland connecting us with Migros and Coop
- i) 2019 – Signing contract with IKEA (category de-risking report and review)
- j) 2019 – 83 innovator applications to the FEED-X programme, 20 plus judges assessed 61 longlisted candidates, selected the top 17 and during a dragons den approach further selected the best 10 to take forward to testing phases in the programme.

Track Record

Our methodology has been successfully applied in Cummins (engineering co) and RBS (bank), as follows:

<p>Who: RBS (23rd largest bank in the world) What: Developed RBS Innovations Gateway in 2014 Objective: to facilitate the sharing of under-utilised assets, focused on Environmental Supply Chain Innovation whilst increasing procurement from under-represented suppliers</p> <ul style="list-style-type: none"> • Encourage innovation and testing • Amplify community benefits • Reconnect the bank with society post 2008 <p>Results:</p> <ul style="list-style-type: none"> • Gateway is in 7th programme cycle • Tested up to stage 7/7 of model <p>Proof of concept completed w/ evidence (200m litres water saved, 40k tonnes of carbon reduced and £7.5m savings when rolled out in the bank's state)⁵</p>	<p>Who: Cummins (Fortune 500 engineering co) What: Setup Cummins Environmental Gateway in 2015 Objective: to achieve economic, environmental, supplier inclusion and innovation objectives Results:</p> <ul style="list-style-type: none"> • Gateway programme in its 2nd Programme cycle. Launching in Cummins Head Offices and US Sites in Colombo, April 2019 • Tested up to level 7/7 of model • Programme received global Cummins Innovation and Environmental awards. Now included in Goal Tree of Global VP Procurement, the Growth Committee and Global Environmental Committee • Company-wide roll out to community and distributors during 2019 (post validation results) • Company in talks about taking the model from non- core resource efficiency into core engine innovation • Proof of concept results generated savings of \$640k⁶
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⁵ <https://www.edie.net/library/Business-Cubed--Cummins--new-strategy-that-aims-to-de-risk-the-innovation-market/6717>

² <https://www.edie.net/news/8/Cummins-embeds-new-innovations-to-reduce-key-environmental-footprints/>

Knowledge Transfer

What is Knowledge Transfer: As part of the process of developing this proposal, research partners explored key questions on what did knowledge transfer mean and what would it look like in practice. They clarified the following points:

- Understand what is knowledge and what knowledge is not
- Knowledge enables the adoption of innovation at scale
- What level of knowledge is known by whom at what point in the value chain – who are the key decision makers (enabler) in the value chain that enable adoption of innovation at scale – what level of knowledge and about what, does each value chain enabler need to know to given them the confidence to shift the category at scale now.
- Map the knowledge gap – need to know the minimum knowledge required at each intervention point in the value chain – trust that risk has been adequately addressed- so there is confidence to shift to a more sustainable category from Fish meal/fish oil and Soy protein concentrate
- Knowledge is key to addressing and unlocking the barriers within the value chain and reduce the time to scale.
- Identify the incentives and disincentives in the system and provide the adequate level of knowledge to enable incentives and eliminate or reduce the disincentives – traffic light

Knowledge – What is it

- Facts, data, know-how, experiences
- Trends, Preferences, research, connecting, observation, perspective, differences, constraints
- Data, representativeness, use of indicators, quantified impact
- Projection to the future
- Assumptions are clear
- Simplicity – traffic light
- Independent, credible, different point of view, additional, easy to digest
- Systemic/treated without bias or with being explicit about decisions made about inclusion
- **Knowledge for adoption:** needs a comparison with the state of the art to visualize change and show the improvement of applying new knowledge
- Give the root cause of the problem and what new knowledge allows us to do differently
- Application- giving examples
- **Knowledge with a purpose:** its has power and to talk with content on the facts, rather than arbitrary assumptions. Key message for communication, easy to understand and transfer further
- Targeted information, specific focus
- Knowledge is an opportunity not a threat

What is knowledge from FEED X perspective

- Constructive, transparent, awareness, consumer trends, other way around, obscure nothing, new is an enrichment, awareness, message what is the benefit of the innovations
- *Shock 1: Have to understand the “problem of feed” as having impact on deforestation/environment and GHG gases.*
- *Shock 2: Need to understand about protein conversion*
 - *“how is it that we feed animals proteins and they eat more than they grow?”*
 - End consumers in particular, but these Shocks need to be understood by the whole supply chain
- We want to transfer the “shock” of this knowledge – Shock translates to action by the market
- Risk is known – it is not a barrier – finance, insurance, purchaser/buyer (retailers, farmers, feed producers, suppliers)
- Talking to retailers, farmers, suppliers- we need to transfer knowledge at every stage of the FEEDX programme, timing so that confidential information is shared after a period of time
- Retailers are in-between the public and the rest of the supply chain – they are key to transferable knowledge and creating a market awareness with consumers.