AUSTRALIAN DESIGN COUNCIL

DESIGN IMPACT CASE STUDY

FOOD AND AGRICULTURE SECTOR

Sea Forest

Triabunna, Tasmania

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SEA FOREST

Sea Forest exemplifies how a design-led approach can drive technological innovation, commercial success, and environmental impact.

By integrating design thinking into its core strategy, the company has successfully transitioned from scientific discovery to market-ready solutions.

Its structured approach to problem-solving, emphasis on empathy, and commitment to sustainability position Sea Forest as a leader in the emerging climate tech industry.

As it continues to scale, the company’s focus on design maturity will remain a critical driver of its success and long-term global impact.

SEA FOREST VIDEO CASE STUDY



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SEA FOREST
DESIGN PROCESS MATURITY

DESIGN PROCESS STAGES	KEY LEARNINGS
1. Define	The define phase began with the identification of a global environmental challenge - methane emissions from livestock, which contribute significantly to agricultural emissions. Recognising the potential of asparagopsis, a red seaweed species, to mitigate these emissions, the company set out to scale this innovation from a research concept into a commercially viable product. This required an understanding of the broader ecosystem, including livestock feeding systems and farmer behaviour, to ensure seamless integration into existing agricultural practices.
2. Empathise	Empathy played a crucial role in the company's approach, particularly in designing for farmers who would ultimately be responsible for adopting the solution. Rather than imposing radical changes, Sea Forest prioritised minimal practice change, ensuring that its methane-reducing feed supplement, sea feed, could be easily incorporated into existing diets without disrupting feeding routines. This user-centric approach extended to consumers as well, necessitating effective communication strategies to raise awareness and build confidence in the product's benefits.

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DESIGN PROCESS MATURITY

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3. Ideate	The ideation phase was informed by scientific collaboration and iterative problem-solving. CSIRO's initial research on feeding seaweed to livestock highlighted the potential for methane reduction, but a critical gap remained—scaling production of the seaweed itself. Sea Forest recognised this challenge and sought partnerships with three universities, leveraging a structured approach to separate research challenges and accelerate breakthroughs. Weekly research meetings created a knowledge-sharing platform, fostering continuous iteration and improvement.
4. Evaluate	Prototyping and testing involved an interdisciplinary approach that combined biology, chemistry, engineering, and design. Observing the natural behaviour of asparagopsis was crucial in understanding how to replicate its reproductive cycle in a controlled environment. Designing an industrial system for scalable seaweed cultivation required balancing biological requirements with engineering constraints, ensuring cost-efficiency and practical application. By maintaining flexibility and eliminating unnecessary constraints, the company was able to tailor its design solutions to evolving insights.

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DESIGN PROCESS MATURITY

DESIGN PROCESS STAGES	KEY LEARNINGS
5. Launch	Execution saw the seamless transition from scientific research to real-world application. By working directly with farmers and industry stakeholders, Sea Forest ensured that its product proposition aligned with agricultural practices, facilitating adoption at scale. Beyond production, the company invested in consumer awareness, collaborating with corporate partners to communicate the environmental impact of its product effectively. Workshops and cross-disciplinary design efforts were integral to simplifying complex scientific messages, demonstrating the multifaceted role of design in every aspect of the business.

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EMBEDDING DESIGN TO DELIVER IMPACT

DESIGN IMPACT PILLARS	KEY LEARNINGS
1. PEOPLE AND CULTURE Designing to improve the quality of life for society and citizens and to acknowledge and shape culture in a respectful and inclusive manner.	At the heart of Sea Forrest's innovation is its commitment to farmers and consumers. By embedding design thinking into its approach, the company ensures that farmers face minimal disruption in adopting its methane-reducing feed. This user-first mindset fosters higher adoption rates and industry acceptance. Additionally, its collaboration with the broader design community facilitates clearer communication of scientific advancements to consumers, empowering informed decision-making and driving positive behavioural change. The company's design-led approach extends to cultural impact, recognising the importance of collaboration, knowledge-sharing, and cross-disciplinary innovation. By working closely with farmers, researchers, and industry partners, Sea Forrest fosters a culture of shared learning and collective problem-solving. The commitment to sustainability and responsible innovation reflects a broader shift towards ethical business practices, aligning with global efforts to mitigate climate change while maintaining agricultural heritage.

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EMBEDDING DESIGN TO DELIVER IMPACT

DESIGN IMPACT PILLARS	KEY LEARNINGS
2. PLANET Designing for Environmental Sustainability and Circularity.	Sea Forest is at the forefront of climate technology, directly addressing methane emissions, the second most abundant greenhouse gas in the atmosphere. By commercialising asparagopsis-based feed supplements, the company contributes to global sustainability efforts, reducing the environmental footprint of livestock farming. The emphasis on regenerative aquaculture and industrial scalability underscores a broader commitment to environmental circularity and ecological balance.
3. PROSPERITY Designing for Commercial and Economic Return.	Sea Forest's innovation is not only environmentally beneficial but also commercially viable. By pioneering an entirely new industry for Australia, the company has created economic opportunities along the value chain—from seaweed cultivation to livestock integration. The market potential for methane-reducing livestock feed supplements is vast, positioning the company for long-term growth. Strategic partnerships with research institutions, corporate stakeholders, and agricultural networks further enhance its competitive advantage.

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We champion the power of design capability to deliver meaningful impact that fuels economic growth, strengthens communities, and shapes a more sustainable and prosperous Australia.

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