

**FINAL REPORT** 

# National Hatchery Network Implementation Plan



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For: Australian Sustainable Seaweed Alliance

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FRDC Project 2022-132

**National Hatchery Network Implementation Plan** 

FRDC Project 2022-132

2023

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In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.

## **Acknowledgements**

Thanks to the ASSA Board and industry participants who provided valuable input.

'The reason we are all working on this is to make a difference, to find a solution to the climate crisis, and we all need to work together to get there as fast as possible'.

Stakeholder interview May 2023

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### 1. Introduction

The Federal Government has committed to an \$8 million Seaweed Industry Development grant that will support ASSA to establish a National Hatchery Network (NHN) for *Asparagopsis* and deliver other supporting projects to grow the industry and achieve significant livestock emissions reductions over the next decade. The budget allocation for the grant is provided for activities to occur from 30 June 2023 – 30 March 2025 and will be managed by FRDC.

The budget allocation for Program 1.4 Fishing Industry – Development of Australia's Seaweed Farming was announced in the October 2022 Federal Government budget and is shown in Table 1.

Table 1 Budget Allocation for Program 1.4 Fishing Industry – Development of Australia's Seaweed Farming

FY 2022 - 2023	FY 2023-2024	FY 2024-2025
\$2,400k	\$3,600k	\$2,000k

Grant Guidelines were released by the Australian Department of Fisheries and Forestry in January 2023. Key sections that provide some context for the Grant expenditure are the intended outcomes of the grant and the eligible activities.

The intended outcomes of the grant are:

- develop a national hatchery network to support current and new entrants into the industry and
  accelerate the development of a sustainable seaweed aquaculture industry in Australia, with a
  focus on *Asparagopsis*, to be led by ASSA,
- support research, development and extension (RD&E) activities that will enhance the commercial viability of seaweed farming, and
- attract investment to the seaweed industry to enable ongoing development.

Eligible activities, through the provision of funds to ASSA and its selected partners, will be used to establish a NHN and a policy reform working group, employ an RD&E investment co-ordinator and undertake an R&D gap analysis.

The process of establishing the NHN will include elements such as:

- establishing people and technical R&D capability relating to seaweed, especially
   *Asparagopsis*,
- developing licencing agreements with intellectual property holders of existing Asparagopsis
  hatchery techniques,

- further development of hatchery and breeding techniques and technology,
- production of hatchery protocols and manuals,
- training and knowledge sharing activities, and
- undertake necessary governance, finance, HR, communications and stakeholder engagement activities associated with the national hatchery network.

The purpose of this report is to detail the implementation plan for the <u>NHN</u> to be delivered under the Federal Government Seaweed Industry Grant program. Of the total \$8 million grant, the NHN is estimated to cost approximately \$6.2 million over three financial years. Of the remaining \$1.8 million, FRDC will receive \$400k for management of the Grant with the remainder allocated to either ASSA (for R&D coordination, industry communications and policy reform) or for other R&D initiatives to be commissioned through FRDC's competitive R&D project tender system (and which ASSA may apply for). The initial program budget for the Seaweed Industry Development Grant is provided in the Table below and may be subject to some variation.

Table 2 Seaweed Industry Development Grant – Initial Program Budget

Initiative	Delivery	FY22/23	FY23/24	FY24/25	Total
	Mechanism	(\$'000)	(\$'000)	(\$'000)	(\$'000)
1A) Grant Management	FRDC	\$100	\$150	\$150	\$400
1B) ASSA Program Governance &					
Reporting, Communications and	ASSA	\$50	\$120	\$0	\$170
Stakeholder Engagement					
2. Seaweed Policy Reform – Working	ASSA	\$80	\$130	\$90	\$300
Group	710371	700	7130	750	7500
3. Markets & Products Assessments	FRDC - Tender			\$100	\$100
4. National Hatchery Network (NHN)	ASSA	\$1,920	\$3,000	\$1,260	\$6,180
5. Seaweed Farmers Licensing	FRDC - Tender	\$100		\$150	\$250
Toolkit	TRIBE TENGE	7100		7130	<b>\$230</b>
6. Pest Disease & Biosecurity Review	FRDC - Tender			\$100	\$100
7. Cultivation Technology – Grower	FRDC - Tender	\$100	\$100	\$100	\$300
Assistance Program	be render	, 100	7 200	7 200	7.500
8. RDE Investment Coordination &	ASSA	\$50	\$100	\$50	\$200
Optimisation	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	750	7100	750	7200
Total Budget		\$2,400	\$3,600	\$2,000	\$8,000

## 2. Background

The Australian Seaweed Industry Blueprint was published in 2020, highlighting the opportunity for the Australian seaweed industry to achieve \$100 million gross value of production (GVP) within five years if critical industry development activities received funding (Kelly 2020). *Asparagopsis* was identified as the species with the biggest potential and, since this time, many new companies focussing on *Asparagopsis* cultivation have been established. A review of industry needs, and ways to support seaweed farming in Australia (Kelly 2022) highlighted the benefits of establishing a NHN and a dedicated research capability and knowledge repository for the benefit of all companies and growers. An *Asparagopsis* R&D Review conducted in consultation with industry stakeholders in 2023 has again highlighted the appetite and priorities for the NHN.

There are many examples of other collaborative aquaculture hatcheries in Australia, such as Saltas, also of collaborations between organisations in other industries for the development of new aquaculture species. For example, in Europe, Hortimare is making significant progress as a kelp seaweed hatchery providing seed-stock to farmers around the continent, developing technologies to improve saleability and conducting independent research where demand does not have a direct link to knowledge and practices. For more information on this European hatchery network visit https://www.hortimare.com/. They are highly focussed on achieving consistency of seed-stock for the benefit of farmers and are beginning to expand their network to Africa and America. These cases prove that it is possible to achieve a cooperative hatchery network for the benefit of growers and shows the benefits a similar system could have for the Australian *Asparagopsis* industry. However, a national approach will be more challenging in Australia with its vast geography, leading to biosecurity policies restricting translocation of aquatic organisms between, and even within, states.

## 3. Methodology

The approach to development of the NHN Implementation Plan was informed by a detailed review of *Asparagopsis* R&D and consultation with key participants in the industry, including current *Asparagopsis* growers and research institutions with significant seaweed research projects. Additionally, the seven State Government representatives on the Australian Fisheries Management Forum Seaweed Working Group (AFMF-SWG) were asked to provide input to the review of *Asparagopsis* R&D needs. The priorities identified in the R&D reviewed have been tabulated and presented in Table *3*.

Through survey responses and interviews with those that expressed an interest in the NHN, this detailed implementation plan has been developed for the first stage (21 months 30 June 2023 - 31 March 2025).

Table 3 Asparagopsis R&D Priorities

#### Asparagopsis R&D priorities according to supply chain element

- Share existing and new knowledge, IP and know-how through training, workshops, handbooks/guides and meetings

#### **Wild Population Assessment**

- Develop standard methodologies for identifying wild populations, collecting broodstock and monitoring seasonality and maintain a database of all records
- Disseminate research findings and genetic data for development of government translocation regulations

#### Hatchery

- Deliver a focused research program to close the life cycle, produce spores and seedlings on demand
- Develop techniques for seeding substrates, growing seedlings for deployment, and transport of seedlings to cultivation sites
- Optimise seeding techniques to achieve consistent, replicable and reliable seed stock for farmers
- Develop biological contamination management techniques
- Maintain clean broodstock repository for all growers participating in the NHN
- Develop hatchery technology and equipment needs through experimentation
- Develop a Hatchery Manual and training
- Research collaborations to develop biosecurity protocols for internal handling of cultures and transport/translocation of broodstock and seeded material
- Research quality assurance practices for all stages of the hatchery process to maintain and improve health of seed stock provided to farmers

#### Cultivation

- Provide operational support and field advice for the successful grow-out of provided seed,
   in situ monitoring of deployments, and transparent reporting of production results by
   growers
- Share emerging scale-up knowledge, research findings and technology available for cultivation stage
- Assist growers to access technology collectively where possible e.g. engineering design
- Facilitate workforce development for the seaweed industry

#### Asparagopsis R&D priorities according to supply chain element

- Supply chain production cost analysis and benchmarking

#### **Processing and Product Development**

- Contribute to a carbon emissions reduction methodology

## 4. About the National Hatchery Network

The NHN will be a dedicated seaweed research capability and knowledge hub for the benefit of the Australian seaweed industry.

#### Key objectives of the NHN are to:

- establish foundational seaweed hatchery capability (infrastructure, people, technologies, and techniques) in key locations to support industry growth and accelerate industry development,
- accelerate availability of seedstock/seeded substrates,
- provide hatchery design, technology and methods guidance to seaweed growers,
- build foundational capability needed to solve the industry's emerging R&D challenges relating to hatchery techniques, strain selection and disease over the coming decades, and
- inspire radical collaboration with industry, government and research.

#### Outputs from the NHN will be:

- a Hatchery Knowledge Centre (species manuals and facility design guidance),
- clean seedstock / seeded substrates for growers (preferably based on native broodstock provided by growers), and
- communications and training on hatchery methods, emerging technology developments and optimisation techniques.

#### Benefits to industry include:

- increased access to hatchery knowledge and seed cultures will reduce start-up costs and timeframes to increase industry growth,
- increased workforce skills and experience to reduce talent shortage risks,
- optimised investment through a network model where knowledge is shared,
- expanded network of seaweed experts working on industry problems, and
- reduced risk and uncertainty for seaweed companies means more investment can be attracted to the industry.

The overall goal of the NHN is to develop and disseminate critical *Asparagopsis* hatchery knowledge, capability and seedstock to accelerate industry growth.

### 4.1. Design Principles

Key principles of the NHN Implementation Plan endorsed by the ASSA Board are for:

- ASSA to drive and manage the investment program and actively deliver core activities to
  ensure outcomes are achieved quickly and made available for industry,
- radical collaboration between industry, research and government to rapidly achieve real change,
- the NHN to be delivered in a commercial and agile way,
- avoid duplication of work and leverage existing R&D where possible,
- NHN to use existing infrastructure (aquaculture facilities),
- investments to be used as efficiently as possible by focusing it on the optimal configuration of R&D projects and research capability to achieve the desired objectives,
- increase knowledge capacity across the industry,
- create solutions that will bring more seaweed capability to the market and reduce burden on each company to employ specialist skills,
- all research and deliverables from the Plan to be made available to industry immediately through communications and training; no waiting to publish papers,
- focus on applied outcomes and capability development that are useful to industry,
- good governance of the projects associated with the R&D focus areas identified by ASSA,
   and
- inclusive industry support for companies at all different stages of development.

## 5. NHN Implementation Plan

### 5.1. Scope of NHN

A review of *Asparagopsis* R&D was conducted and included an in-depth baseline of the current R&D landscape across the supply chain and an analysis of key gaps based on industry, government, and targeted researcher feedback.

The Asparagopsis R&D Review has shown that there is a need for an Australian Asparagopsis NHN and that most growers are keen to be involved and would benefit. Considering those gaps which received most consistent comment in the surveys and interviews, and the investment already

committed through other programs in Australia, the NHN should focus on the following key activities for both *Asparagopsis armata and A. taxiformis*:

- broodstock collection advice.
- experimentation to close lifecycle,
- hatchery design and technology needs,
- hatchery protocols for production of consistent, contaminant-free cultures of *Asparagopsis*,
- seeding techniques and substrate experimentation,
- training and communications for growers, and
- knowledge repository for industry.

There are currently growers trying to establish in key regions in Queensland, South Australia, Tasmania and Western Australia working on both species of *Asparagopsis*. Other States such as New South Wales and Victoria also have grower interest however require policy and legislative changes to enable significant seaweed aquaculture to proceed and may be considered in future phases of the NHN program.

To achieve the goal to grow industry production, the NHN research program needs to have consideration towards scalability and practical outputs which support growers to achieve production volumes. Further, the NHN needs to be delivered with companies and research partners that have indicated they are willing, and available during the time frame of the project, to collaborate on hatchery processes for *Asparagopsis*. The Implementation Plan has been designed to deliver on this scope.

### 5.2. Implementation Plan

#### 5.2.1. NHN Hub Locations

Two NHN Hub locations in regional locations will be established to maximise the access to support for industry participants for *Asparagopsis* hatchery capability and knowledge.

Tasmania or South Australia – NHN Temperate Hub. This will provide hatchery development
for southern states including Tasmania, South Australia, Victoria and southern Western
Australia. The main focus for the *A.armata* Hub should be central to its natural geographical
distribution so the species is accessible and in optimal condition in the wild for as long as
possible so as to optimise the opportunity for R&D development over the short 21 month
period.

• Townsville or Gladstone, QLD – NHN Tropical Hub. This will provide hatchery development support for growers in Northern Australia (including Queensland, the Northern Territory and northern Western Australia). The main focus for the *A.taxiformis* Hub should be central to its natural geographical distribution so the species is accessible and in optimal condition in the wild for as long as possible so as to optimise the opportunity for R&D development over the short 21 month period.

A select tender process is currently being conducted to finalise the NHN Hub locations and research partners based on the following criteria:

- facility suitability, availability and willingness for what is required to be provided for the least cost and commencing immediately,
- ready access to the desired species and capacity to collect broodstock whenever required (both from the wild and/or industry),
- willingness to host and work collaboratively with ASSA staff, and
- willingness to work collaboratively with ASSA and others on R&D projects and rapidly disseminate results to industry.

It is anticipated that as the initial NHN Hubs are established and R&D program develops, there will be opportunity to conduct some focussed R&D projects that require specialist facilities or target specific regional industry challenges e.g. seasonality of *Asparagopsis* in warmer temperate environments. Therefore, other research partners will be encouraged from time to time to work with the NHN and a budget allocation will be made available for this.

#### 5.2.2. NHN Core Team and Roles

Essential to the NHN is that industry knowledge is developed and made available for industry in the short timeframe of the Grant funding (to March 2025). Therefore, it is strongly recommended that ASSA establish and lead the core technical capability, direct the program of work and engage with research partners to deliver the outcomes.

It is proposed that six core team members will be directly appointed by ASSA for the duration of the grant funded program to deliver the program outcomes as follows:

- NHN Program Director – senior leader, experienced appointment with a combination of hatchery management experience and major R&D program management and delivery track record (may be from seaweed or another aquaculture/agriculture sector). Collaborative approach and leadership experience leading multidisciplined teams. Commercially minded

- and research driven. Responsible for NHN program management, reporting, governance and relationships with research partners and stakeholders. Position will desirably be sited at one of the Hubs but can be based anywhere in Australia with some travel as required.
- Research Hub Leads (Senior Researcher x 2) Two senior researchers with significant technical experience with aquaculture hatchery set up, research and development experience (may be from seaweed or another aquaculture sector). Commercially minded and research driven. One role to be based at the Tropical Hub, co-located with a research partner and reporting to the NHN Program Director. One position based in the Temperate Hub, co-located with a research partner, and reporting to the NHN Program Director. Both positions responsible for design and delivery of research projects to achieve NHN program outcomes and might be seconded from a research industry or organisation position for the period of employment. (Tropical Research Hub Lead location tbc; Temperate Research Hub Lead location tbc)
- Research Hub Research Fellows (x 2) two early career research fellows with PhD and hands on experience in seaweed hatchery or other aquaculture hatchery development experience.
   One role to be based at the Tropical Hub, co-located with a research partner and reporting to the Research Hub lead. One position based in the Temperate Hub, co-located with a research partner and reporting to the Temperate Hub lead.
- NHN Biosecurity Advisor part time, senior biosecurity consultant expertise required to
  advise across NHN program and partners on hatchery biosecurity issues and develop
  protocols for broodstock and seedstock management, transfer and handling.

Roles will be advertised, and a swift recruitment process will take place. All roles will require some travel and Research Hub Leaders and Research Fellows will be collocated with R&D Partners at their aquaculture research facilities. The NHN Program Director and NHN Biosecurity Advisor roles can be located remotely.

#### 5.2.3. R&D Partners

Aquaculture research facilities, research expertise and office locations are required for the NHN teams in two locations. Therefore, ASSA will establish NHN Hub research partnerships under the NHN program with:

- 1 x Tropical Seaweed Research Institution, and
- 1 x Temperate Seaweed Research Institution.

The implementation plan also allows scope to engage other research providers outside of the two Hub Research Partners where specific expertise is required. This will be identified by the NHN Program Director as the program develops and specific needs are identified to diversify capability.

#### 5.2.4. Knowledge Sharing and Training

A key aspect of the NHN is the sharing of information and training of growers to assist the development of the industry. In this aspect the *Asparagopsis* NHN will be a first of its kind in Australia. An NHN industry forum will be established to run regular workshops for industry input and webinars on key topic areas and emerging research. In addition, growers will be able to access site-based training at each of the NHN Hub locations. ASSA corporate membership will access the training and information to ensure that organisations using it are Australian based and genuinely invested in developing operations in Australia. Companies with an ABN and demonstrated footprint in the Australian seaweed cultivation sector can apply to join ASSA as a corporate member and are required to pay a fee of \$2500 per year and adhere to the code of conduct. It is proposed that the information developed through this program and the training events are restricted to this group for the first two years after which point it can be made more broadly available.

#### 5.2.5. Governance

Two levels of governance, a technical panel, R&D working group and link to the existing FRDC Indigenous Reference Group are proposed with separate roles as outlined in Table 4.

**Table 4 Governance Arrangements** 

What	Scope	Who	Frequency	
Seaweed Grant Steering Committee (SGSC)	Review progress against Grant milestones Review & advise on material risks to industry development. Includes all Grant activities (not just NHN and ASSA led activities)	FRDC (co-chair) ASSA Board (co-chair) ASSA NHN Program Director DAFF DCCEWE	3 - 6 monthly - aligned to Grant Reporting timelines (Initially 3 monthly)	
	Communications/Publications review and approvals			
NHN Program Governance Committee (NHNGC)	Review progress against plan Program risks and issues and budget Review reporting to FRDC and SGSC	ASSA NHN Program Director (chair)  ASSA Board and Industry Representatives  Research Leads / Hub Leads	1 – 3 monthly. (Initially monthly moving to quarterly)	

What	Scope	Who	Frequency	
	Feedback from Project Participants	FRDC Representative		
Independent Expert	Provide strategic technical advice to ASSA on NHN	ASSA NHN Program Director (chair)	As required / annual	
Technical Panel	strategy and direction	Three - Five independent experts		
NHN R&D Working	Coordination and alignment of research partners and NHN	NHN Program Director (Chair)	3 monthly	
Group	program outputs.	All PIs of all NHN projects		
FRDC Indigenous	Provide strategic development advice to ASSA on NHN	FRDC Indigenous Reference Group	As required / annual	
Reference Group (IRG)	strategy and direction	NHN Program Director as guest attendee		

### 5.3. Implementation Plan, Costs and Timeline

Table 5 shows the high-level budget for the NHN over 21 months. A more detailed breakdown is contained in the FRDC proposals for each element.

Table 5 NHN Program Budget for 21-Month Program

Budget Item	FY23	FY24	FY25	Total
ASSA Core team, consumables, travel and admin	\$ 1,080,000	\$ 1,272,500	\$ 550,000	\$ 2,902,500
Research Partners Budget		\$1,500,000	\$1,500,000	\$3,000,000
Sub Total		\$3,080,000	\$2,822,500	\$5,902,500
5% contingency		\$150,000	\$150,000	\$300,000
Totals		\$3,230,000	\$2,972,500	\$6,202,500

Milestones, deliverables and dates are outlined in Table 6 for the ASSA components of the NHN. A detailed project plan and timeline is presented in Appendix A.

Table 6 Milestones and Payments

Milestone	Deliverables	Due Date
Signing of Agreement	Contract Executed	15 July 2023

Progress Report 1 NHN Program Management Plan IP and Due Diligence Process Update Research Partner Update (contracts in place)  Progress Report 2 NHN Progress Report Program Management Plan Update Draft Hatchery Manual Framework Knowledge Sharing Plan Update Hatchery Manual (draft) Biosecurity Protocols for Hatchery Training Plan Knowledge Sharing Forum Update  Draft Final Report NHN Final Report (draft for comment) NHN Final Report (draft for comment) NHN Final Report (draft for comment) NHN Final Report (fraid for comment) NHN Final Report (draft for comment) NHN Final Report (draft for comment) NHN Close Down / Transfer Plan / Extension Plan Hatchery Manual (final draft) Biosecurity Protocols (final draft) Training Program Update Report Knowledge Sharing Forum Update Key Messaging for Stakeholders for Project Wrap Up / Next Steps Input to Independent Benefit - Cost & Impact Analysis Extension Plan	Milestone	Deliverables	<b>Due Date</b>
IP and Due Diligence Process Update Research Partner Update (contracts in place)  Progress Report 2  NHN Progress Report 05 April 2024  Program Management Plan Update Draft Hatchery Manual Framework Knowledge Sharing Plan Update  Progress Report 3  NHN Progress Report 06 Sept 2024  NHN Program Management Plan Update Hatchery Manual (draft) Biosecurity Protocols for Hatchery Training Plan Knowledge Sharing Forum Update  Draft Final Report NHN Final Report (draft for comment) 07 Feb 2025  NHN Close Down / Transfer Plan / Extension Plan Hatchery Manual (final draft) Biosecurity Protocols (final draft) Training Program Update Report Knowledge Sharing Forum Update Key Messaging for Stakeholders for Project Wrap Up / Next Steps Input to Independent Benefit - Cost & Impact Analysis	Progress Report 1	NHN Progress Report	06 Sept 2023
Research Partner Update (contracts in place)  Progress Report 2 NHN Progress Report 05 April 2024  Program Management Plan Update Draft Hatchery Manual Framework Knowledge Sharing Plan Update  Progress Report 3 NHN Progress Report 06 Sept 2024 NHN Program Management Plan Update Hatchery Manual (draft) Biosecurity Protocols for Hatchery Training Plan Knowledge Sharing Forum Update  Draft Final Report NHN Final Report (draft for comment) 07 Feb 2025 NHN Close Down / Transfer Plan / Extension Plan Hatchery Manual (final draft) Biosecurity Protocols (final draft) Training Program Update Report Knowledge Sharing Forum Update Key Messaging for Stakeholders for Project Wrap Up / Next Steps Input to Independent Benefit - Cost & Impact Analysis		NHN Program Management Plan	
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Biosecurity Protocols for Hatchery Training Plan Knowledge Sharing Forum Update  Draft Final Report NHN Final Report (draft for comment) NHN Close Down / Transfer Plan / Extension Plan Hatchery Manual (final draft) Biosecurity Protocols (final draft) Training Program Update Report Knowledge Sharing Forum Update Key Messaging for Stakeholders for Project Wrap Up / Next Steps Input to Independent Benefit - Cost & Impact Analysis		NHN Program Management Plan Update	
Training Plan Knowledge Sharing Forum Update  Draft Final Report  NHN Final Report (draft for comment)  NHN Close Down / Transfer Plan / Extension Plan  Hatchery Manual (final draft)  Biosecurity Protocols (final draft)  Training Program Update Report  Knowledge Sharing Forum Update  Key Messaging for Stakeholders for Project Wrap Up / Next Steps  Input to Independent Benefit - Cost & Impact Analysis		Hatchery Manual (draft)	
Draft Final Report NHN Final Report (draft for comment) 07 Feb 2025  NHN Close Down / Transfer Plan / Extension Plan  Hatchery Manual (final draft)  Biosecurity Protocols (final draft)  Training Program Update Report  Knowledge Sharing Forum Update  Key Messaging for Stakeholders for Project Wrap Up / Next Steps  Input to Independent Benefit - Cost & Impact Analysis		Biosecurity Protocols for Hatchery	
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NHN Close Down / Transfer Plan / Extension Plan  Hatchery Manual (final draft)  Biosecurity Protocols (final draft)  Training Program Update Report  Knowledge Sharing Forum Update  Key Messaging for Stakeholders for Project Wrap Up / Next Steps  Input to Independent Benefit - Cost & Impact Analysis		Knowledge Sharing Forum Update	
Extension Plan Hatchery Manual (final draft) Biosecurity Protocols (final draft) Training Program Update Report Knowledge Sharing Forum Update Key Messaging for Stakeholders for Project Wrap Up / Next Steps Input to Independent Benefit - Cost & Impact Analysis	Draft Final Report	NHN Final Report (draft for comment)	07 Feb 2025
Biosecurity Protocols (final draft)  Training Program Update Report  Knowledge Sharing Forum Update  Key Messaging for Stakeholders for Project Wrap Up / Next Steps  Input to Independent Benefit - Cost & Impact Analysis			
Training Program Update Report  Knowledge Sharing Forum Update  Key Messaging for Stakeholders for Project Wrap Up / Next Steps  Input to Independent Benefit - Cost & Impact Analysis		Hatchery Manual (final draft)	
Knowledge Sharing Forum Update  Key Messaging for Stakeholders for Project Wrap Up / Next Steps  Input to Independent Benefit - Cost & Impact Analysis		Biosecurity Protocols (final draft)	
Key Messaging for Stakeholders for Project Wrap Up / Next Steps Input to Independent Benefit - Cost & Impact Analysis		Training Program Update Report	
Project Wrap Up / Next Steps Input to Independent Benefit - Cost & Impact Analysis		Knowledge Sharing Forum Update	
Impact Analysis			
Extension Plan		• •	
		Extension Plan	
Final Report NHN Final Report 04 March 2025	Final Report	NHN Final Report	04 March 2025
NHN Close Down / Transfer Plan / Extension Plan (approved)			
Hatchery Manual (final)		Hatchery Manual (final)	
Biosecurity Protocols (final)		Biosecurity Protocols (final)	
Training Program Report		Training Program Report	
Knowledge Sharing Report		Knowledge Sharing Report	
Communications Issued to Key Stakeholders for Project Wrap Up		· · · · · · · · · · · · · · · · · · ·	
Extension Plan Handed Over to FRDC		Extension Plan Handed Over to FRDC	

### 5.4. Execution Approach

The NHN program will be contracted by FRDC in several parts as follows:

- ASSA Core Team, consumables, travel and administration (as soon as possible),
- research partner for Tropical NHN Hub (within 3 months),
- research partner for Temperate NHN Hub (within 3 months), and
- other discreet projects throughout the program (when required).

In addition, ASSA and FRDC are investigating with DAFF if a portion (up to \$3 million) of the funds for research partnerships (Research Partners Budget in Table 5) could be invested through the Marine Bioproducts CRC program. This would enable the funding to potentially be leveraged against other government funds and in-kind support offered through the CRC model. However, this would require an update to the grant guidelines and current contract arrangements with FRDC. Further investigations will be progressed in parallel with commencing this implementation plan.

### 6. Conclusion

Key elements of this report endorsed by the Steering Committee are:

- ASSA Core Team, consumables, travel and administration to be progressed to contract between ASSA and FRDC – currently under assessment by FRDC,
- proceed with selection of two Hub Research Partners based on a select tender process and criteria, and
- approach to allocate some Research Partner Budget to diversify capability as the NHN program develops.

In parallel with proceeding on the above basis, further clarification is currently being sought from the Federal Government on two key areas that may influence the longer term NHN Implementation Plan:

- if and how grant funds may be used to purchase IP if determined by due diligence to be of value to the project, and
- Marine Bioproducts CRC co-contribution opportunity and conditions.

## **Appendix A – NHN R&D Program Plan**

Output	Tasks	Q1 1 Jul 23 – 30 Sep 23	Q2 1 Oct 23 – 31 Dec 23	Q3 1 Jan 24 – 31 Mar 24	Q4 1 Apr 24 – 30 Jun 24	Q5 1 Jul 24 – 30 Sep 24	Q6 1 Oct 24 – 31 Dec 24	Q7 1 Jan 25 – 31 Mar 25
NHN Program Set Up & Management	<ul> <li>Contract execution</li> <li>Program management plan</li> <li>Appoint core team</li> <li>Agree research contracts for 2 x hubs</li> <li>Detailed program planning</li> <li>Stakeholder engagement and comms</li> <li>Set up governance + TOR</li> <li>Program reporting</li> </ul>	Pgm Set Up & Initiation						
Hatchery Foundation	<ul> <li>Experimental design</li> <li>Set up hatchery for experiments</li> <li>Broodstock collection (from wild/industry)</li> <li>Biosecurity framework for translocation</li> <li>Lifecycle experimentation</li> <li>Hatchery engineering and design manual</li> <li>Workshops</li> </ul>							
Hatchery Optimisation	<ul> <li>Repeatable process for replicate strains</li> <li>Produce seedstock for field trials (to industry)</li> <li>Support field trials and feedback</li> <li>Training and knowledge sharing</li> </ul>							
Governance	<ul> <li>Project governance mtgs (mthly - qtrly)</li> <li>Grant Steer Co (qtrly - 6 monthly)</li> <li>Expert Technical Panel (annual)</li> <li>FRDC Indigenous Reference Group (annual)</li> </ul>	•	* * *	* *	*		0	• *
Key Milestones:	1) Contract Execution – 15 July 2023 2) Progress Report 1 – 6 Sep 2023 3) Progress Report 2 – 5 April 2024 4) Progress Report 3 – 6 Sept 2024 5) Draft Final Report – 7 Feb 2025 6) Final Report - 4 March 2025	<b>A A</b>				4		<b>A A</b>