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Insights from the Scottish Aquaculture Innovation Centre

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Does this sound familiar?

• Why do the same R+D priorities keep coming up?
• None of these grant proposals are really going to solve the industry bottlenecks.
• Funding is only for projects under $...$ and for .... long.
• We can only fund ...........
• Why don’t all of these groups coordinate their efforts?
• Who’s in charge?
We have lots to work with!

Industry defined outcomes

MAIC
INDUSTRY DRIVEN APPLIED RESEARCH AND INNOVATION

DMR
MANAGEMENT OF MARINE RESOURCES

CEI
STRENGTHEN LOCAL ECONOMIES

DECD
ECONOMIC AND COMMUNITY DEVELOPMENT

MTI
BUSINESS DEVELOPMENT AND INNOVATION

GOMRI
SUPPORT SUSTAINABLE SEAFOOD

BIGELOW
GLOBAL OCEAN PROCESSES

ISEANET
BUILD University CAPACITY AND NETWORKS

Island Institute
SUSTAIN ISLAND AND REMOTE COASTAL COMMUNITIES

SEA GRANT
BALANCED AND SUSTAINABLE USE OF COASTAL RESOURCES

MAA
TRADE ASSOCIATION

ARI
INDUSTRY DRIVEN RESEARCH UMAINE

HOW CAN WE CONNECT THE DOTS?
Scottish aquaculture: a case study in driving innovative R&D
The current landscape

- Contributes $2.2bn+ annually to the Scottish economy
- Supports around 8,800 jobs – many in remote and rural areas
- Provides the number one food export in Scotland; consistently ranks within top two most valuable food exports from the United Kingdom
- Through supply chain, provides demand for feed, research, engineering and downstream logistics
- An anchor industry that helps keep communities and career prospects alive
Industry ambition by 2030

- Generating $4.4bn per annum – double the current economic value
- Producing up to 400,000 tonnes of finfish
- Harvesting 18,000 tonnes of mussels and significantly increasing oyster production
- Supporting an additional 9,000 jobs, across both production and supply chain
- All of which requires around 5% year-on-year growth
Innovation as a driver of productivity

- Scottish Government invited industry and academia in key sectors to bid to gain Innovation Centre status and funding

- The Scottish Aquaculture Innovation Centre (SAIC) was established in 2014 with $13.6m public money

- Part of an $147m eight-strong programme of Innovation Centres in Scotland to drive growth in areas of key economic importance

- Connecting industry with academia and collaborating on long-standing challenges and emerging opportunities

- 87 SAIC members - 64 companies; 17 universities and research institutes; 6 stakeholder bodies
What it requires in practice

- Widespread **collaboration from all stakeholders** – industry and academia; private and public sector; trade and regulatory bodies
- Engagement across the **entire supply chain** – from feed companies and pharma, to hauliers and retailers
- **Clear focus** – four industry-identified priority innovation areas (PIAs), plus action on skills and knowledge exchange:
  - PIA 1 Addressing environmental and health challenges
  - PIA 2 Developing feeds for optimum nutrition and health
  - PIA 3 Unlocking additional capacity
  - PIA 4 Establishing health-certified Scottish mollusc spat production systems
- **Pump-prime funding** – $3.64m SAIC funding has generated **$24.67 project portfolio** in just over **two years, industry provided 65%**
Project criteria

SAIC-funded projects must:

• Be industry-led with a minimum of one industry and one academic partner
• Meet a commercial need
• Be novel with strong scientific basis
• Deliver a benefit to Scottish sector
• Drive economic growth
• Expected minimum industry contribution of 50% (in cash or in-kind)
• Have a technology readiness level typically 4-7
• All projects are also assigned a dedicated SAIC project manager
Technology readiness levels (TRL)

- TRL 1 – **basic principles** observed
- TRL 2 – technology **concept formulated**
- TRL 3 – experimental **proof of concept**
- TRL 4 – technology **validated in lab**
- TRL 5 – technology **validated in relevant environment**
- TRL 6 – technology **demonstrated in relevant environment**
- TRL 7 – system prototype **demonstration in operational environment**
- TRL 8 – system **complete and qualified**
- TRL 9 – actual system **proven** in operational environment
Project process

**Expression of interest**
Expression of interest submitted > reviewed internally > feedback to applicants > proceed to full application? Yes/no

**Full application**
Full applications submitted > reviewed by Independent Scientific Panel (ISP) > presented to SAIC Board for final decision? Yes/no

**Approval**
If approved, grant offer issued with conditions > collaborative agreement signed > project commences within six months of offer letter

**Project review**
Project completion > results reviewed by ISP and board > economic benefits and financial value to industry assessed
How can we learn from this model here in Maine?

• Learn more about the SAIC model

• Develop industry leadership in each sector

• Have a workshop involving all 12 entities and SAIC to brainstorm a new, outcome-based model for collaborative problem-solving

• Create new, multi-institutional ways to address bottlenecks to development involving all of the stages from K-12 education, new start-ups, early stage to mature industries

• Incorporate the progress we have made in fostering innovation with technology transfer, engineering, marine and social sciences into action to develop a sustainable coastal economy