Mapping the draft Study Plan questions to the revised Study Plan

This mapping identifies where the topics and questions set out in the draft Study Plan are captured in the revised Study Plan.

Phase 1: Current knowledge, concerns, evidence, risks, threats and responses and Phase 1A: Current status overview, especially industry, environment and public health

Topic Number 1: Overview of the global salmon industry – the big picture for Australia, Norway, Chile, Scotland, Canada, New Zealand Contributions to global and local demand for protein. Role in food security

Draft Study Plan question	Revised Study Plan coverage
1. What are the current global production volumes of salmon, how do these contribute to global demand for protein, particularly seafood, and how has the market share of major producing nations shifted over the last decade?	Topic 1: Global overview 1. **Global production volumes** What are the current global production volumes of salmon, how do these contribute to global demand for protein, and how has market share of major producing nations shifted over the last decade?
2. What are the primary global market drivers, including Environment, Social and Governance requirements, certification schemes like Aquaculture Stewardship Council and Best Aquaculture Practices, and consumer demand for “green” protein? 3. Are there global drivers of change that affect the industry, eg climate change – refer to UN FAO, UN Decade of Ocean Science, UN Global Compact and Regional Fisheries Bodies, UNFCCC. 4. What are the environmental and social challenges identified by the Food and Agriculture Organisation and international	Topic 1: Global overview 2. **Global market and change drivers** What global commercial, policy, trade, environmental, climate change drivers are reshaping the industry, and how?

Draft Study Plan question	Revised Study Plan coverage
NGOs as critical to 'social licence' for global protein production in general and seafood in particular. 5. What are the major health and disease risks and responses facing the global salmon industry? 6. Detail the major issues driving change in global salmon industry in the last five years. 7. What are the global directions and opportunities for innovation in the salmon farming industry in progress now?	
8. What is Tasmania's competitive advantage in a global salmon industry?	Topic 1: Global overview 3. What is Tasmania's competitive advantage globally?

Topic Number 2: Assessment of environmental values, impacts, and benefits of Salmon Farming in Tasmania and lessons from beyond Australia

Draft Study Plan question	Revised Study Plan coverage
1. What are the natural values in Tasmania affected by salmon farming? What is the current state of benthic and water column health across major farming regions (see EPA locations) 2. What are the measurable impacts on natural values from salmon farming and other human activity on ecosystems both within and upstream or adjacent to salmon farms? 3. What are the measurable impacts of nitrogen and nutrient loading on local marine biodiversity on the sea floor and water above it?	Topic 3: Ecosystems and salmon health 1. **Environmental values and marine impacts** What natural values in Tasmania are affected by salmon farming? What is the current state of benthic and water column health, and what measurable impacts (including nitrogen and nutrient loading) does salmon farming have on marine biodiversity (distinguished from impacts of other human activity in the same waters)?

Draft Study Plan question	Revised Study Plan coverage
4. How effective are current waste management protocols for hatchery sludge and marine mortalities in meeting contemporary standards?	Topic 3: Ecosystems and salmon health 2. **Waste management** Do Tasmanian waste management protocols for hatchery sludge and marine mortalities meet contemporary (international and international regulatory) standards?
5. How can terrestrial and freshwater hatchery operations impact local river systems and groundwater?	Topic 3: Ecosystems and salmon health 10. **Terrestrial and freshwater impacts** What impacts do terrestrial and freshwater hatchery operations have on local river systems and groundwater?

Topic Number 3: Health impacts of salmon farming, including: public health, ecosystem health, wildlife impacts and salmon health

Draft Study Plan question	Revised Study Plan coverage
1. What are the primary causes of salmon mortality in Tasmania, and how do current management practices compare to international welfare standards?	Topic 3: Ecosystems and salmon health 4. **Salmon health and mortality** What are the primary causes of salmon mortality in Tasmania, what are the prevention strategies and how do these management practices in Tasmania compare to international welfare standards?
2. What are the trends in antibiotic and chemical use in the Tasmanian industry, and, in addition to the environment risks in topic 1, what are the associated risks to public health and the environment?	Topic 3: Ecosystems and salmon health 6. **Antibiotic and chemical use** What are the trends in antibiotic and chemical use in the Tasmanian industry, and what risks arise (including to human health) in relation to this use?
3. How effective are current biosecurity protocols and disease prevention strategies in mitigating “mass mortality” risks?	Topic 3: Ecosystems and salmon health

Draft Study Plan question	Revised Study Plan coverage
	4. **Salmon health and mortality** What are the primary causes of salmon mortality in Tasmania, what are the prevention strategies and how do these management practices in Tasmania compare to international welfare standards?
4. What is the nature and frequency of wildlife interactions (seals, birds, skates), and are current mitigation strategies (e.g., exclusion netting) meeting best-practice standards? How do other jurisdictions mitigate against wildlife mortality?	Topic 3: Ecosystems and salmon health 7. **Wildlife interactions** What is the nature and frequency of wildlife interactions (seals, birds, skates) with salmon farming operations? 8. **Wildlife mitigation** What mitigation strategies are used and how does this compare to international practices?

Topic Number 4: Regulatory frameworks: Detailed examination of Tasmania Salmon Industry Regulation and compare with international regulations for compliance and effectiveness – best practice

Draft Study Plan question	Revised Study Plan coverage
1. How do the regulatory architectures of Norway, Chile, Scotland, Canada, and New Zealand compare to Tasmania in terms of independent oversight and enforcement powers?	Topic 2: Regulatory framework 5. **Oversight and enforcement** How do the regulatory architectures of Norway, Chile, Scotland, Canada, and New Zealand compare to Tasmania in terms of independent oversight and enforcement?
2. What specific metrics are used internationally for "environmental capacity" (e.g., nitrogen caps, biomass limits, fallowing requirements, deoxygenation standards and mitigation) and how are they triggered?	Topic 2: Regulatory framework 3. **Monitoring and disclosures** What monitoring and reporting/disclosures are required, how are these triggered, and how does this compare to other regulatory frameworks?

Draft Study Plan question	Revised Study Plan coverage
3. How transparent are the compliance and monitoring data in other jurisdictions compared to Tasmania's public reporting standards?	
4. How effective are approaches in other jurisdictions in preventing environmental harm?	Phase 2 1. **Effectiveness of current regulation** Effectiveness of current regulation in promoting objectives of the RMPS, having regard to risks and benefits and international best practice.
5. What are the mechanisms for public participation, management of stakeholder concerns, community wide aquatic literacy, and dissemination of outcomes of industry performance on social and environmental issues that have been effective in other jurisdictions or industries? And are there metrics to assess these mechanisms, particularly for stakeholder engagement and issue management, including regulatory mechanisms and those led by non-government groups?	Topic 2: Regulatory framework 4. **Public participation** How do regulatory frameworks encourage public involvement and the sharing of responsibility for resource management and how does this compare to practices in other jurisdictions?
6. How does the industry, in Australia and internationally, assess, manage and communicate with the public in the event of major farmed salmon mortality or broadscale environmental threats to farmed salmon health and are there regulation examples to draw on from other industries in Australia or internationally?	Topic 2: Regulatory framework 2. **Incident management and response** How are significant incidents reported, assessed, managed and communicated in Tasmania, and how does this compare to other jurisdictions?

Phase 1B: Economic and sociocultural costs and benefits

Topic Number 5: The direct and indirect contribution of the salmon industry to the Tasmanian economy, including: regional economies, employment opportunities and career pathways, and the industry's role in developing skills and knowledge

Draft Study Plan question	Revised Study Plan coverage
1. What is the total direct and indirect Gross State Product contribution of the salmon industry to the Tasmanian economy? 2. How is the industry's workforce distributed regionally, and what is the "multiplier effect" for local small businesses in those areas? 3. What is the industry's role in providing structured career pathways and vocational skills (Vocational and Educational Training) in regional Tasmania? 4. To what extent does the industry invest in local infrastructure or support community-based economic projects? What is the total annual investment (direct and indirect) in salmon-related R&D in Tasmania? 5. How has the industry's presence influenced the scale and international reputation of Tasmanian research institutions (e.g., IMAS, UTAS)? 6. What specific technological or scientific innovations have been developed in Tasmania as a result of the salmon industry, and are these being utilised elsewhere? 7. To what extent does the salmon industry innovation contribute to Tasmania's broader biosecurity and environmental monitoring capabilities?	Topic 4: People and communities 1. **Economic and social impacts** What are the economic and social contributions and impacts of the salmon industry in Tasmania? For example: • gross state product; • training, education and employment; • infrastructure; • research and innovation; • coastal amenity — noise, light, visual amenity and air quality; and • other sectors — e.g. local fishing, tourism and recreation.

Topic Number 6: The social and cultural benefits and costs to Tasmanian community, including the effect of industry activities on infrastructure, amenity, and Indigenous peoples' knowledge and perspectives for land and sea country

Draft Study Plan question	Revised Study Plan coverage
1. How has the growth of the salmon industry impacted regional infrastructure, particularly road maintenance and public port access? 2. What are the measurable impacts and mitigation of salmon farming operations on coastal amenity (specifically noise, light pollution, and visual landscape)? 3. To what extent does industry workforce growth influence regional housing markets and the availability of essential services? 4. What are the broader community benefits (e.g., sponsorship, infrastructure co-investment) and how are these distributed across regional Tasmania?	Topic 4: People and communities 1. **Economic and social impacts** What are the economic and social contributions and impacts of the salmon industry in Tasmania? For example: • training, education and employment; • infrastructure; and • coastal amenity — noise, light, visual amenity and air quality.
5. Indigenous perspectives on salmon industry activities – costs and benefits to sea country and indigenous communities.	Topic 4: People and communities 2. **Aboriginal values** What are the opportunities for, and impacts on, Sea Country and Tasmanian Aboriginal people and organisations?

Phase 2: Climate change, adaptive management for community, government and industry

Topic Number 7: Climate change threats, impacts and opportunities for adaptation and carbon management

Draft Study Plan question	Revised Study Plan coverage
1. What are the projected ocean temperature and dissolved oxygen trends for Tasmania's primary salmon farming regions over the next 10, 20, and 50 years? 2. How do these projections align with the biological thermal limits and oxygen requirements of Atlantic Salmon? 3. What are the likely effects of industry selective breeding program in context of climate change and thermal tolerance of Tasmanian Atlantic salmon? 4. What are the feasible opportunities for the industry to mitigate against projected ocean temperature and dissolved oxygen trends?	Topic 1: Global overview 2. **Global market and change drivers** What global commercial, policy, trade, environmental, climate change drivers are reshaping the industry, and how?
5. What is the current carbon footprint of the Tasmanian salmon industry (Scope 1, 2, and 3) compared to international protein benchmarks?	Topic 1: Global overview 1. **Global production volumes** What are the current global production volumes of salmon, how do these contribute to global demand for protein, and how has market share of major producing nations shifted over the last decade?
6. What are the feasible opportunities for the industry to participate in carbon sequestration or "blue carbon" initiatives? 7. How is the industry impacted by regulatory changes in sustainability reporting nationally and internationally?	Topic 1: Global overview 2. **Global market and change drivers** What global commercial, policy, trade, environmental, climate change drivers are reshaping the industry, and how?

Topic Number 8: Contribution of the industry to advancing scientific expertise, innovation and research capacity in Tasmania, including aquaculture science, technology, environmental monitoring, biosecurity and emerging technologies including offshore farming systems, land-based recirculating aquaculture systems, hybrid systems, circular economy innovations including value added production

Draft Study Plan question	Revised Study Plan coverage
1. What is the total annual investment (direct and indirect) in salmon-related R&D in Tasmania? 2. How has the industry's presence influenced the scale and international reputation of Tasmanian research institutions (e.g., IMAS, UTAS)? 3. What specific technological or scientific innovations have been developed in Tasmania as a result of the salmon industry, and are these being utilized elsewhere? 4. To what extent does the salmon industry innovation contribute to Tasmania's broader biosecurity and environmental monitoring capabilities?	Topic 4: People and communities 1. **Economic and social impacts** What are the economic and social contributions and impacts of the salmon industry in Tasmania, including research and innovation?
5. What are key areas for assessing emerging technologies such as the technical and financial feasibility of (a) offshore farming systems; (b) land-based recirculating aquaculture systems (RAS), (c) hybrid (RAS/Offshore) production models, (d) circular economy innovations (value-added production, downstream processing, bioproducts)	Phase 2 2. Feasibility of alternative production models

Topic Number 9: Benchmarking Tasmanian salmon industry regulation against global best practice

Draft Study Plan question	Revised Study Plan coverage
1. Based on Phase 1 benchmarking, what are the essential components of an "independent" and "fully authorised" regulatory authority for aquaculture? And would this assist the Tasmanian government, industry and community? 2. How can the Tasmanian Resource Management and Planning System (RMPS) and EMPCA be updated to better integrate aquaculture with other marine users and ecosystem protection? 3. What are the global best-practice standards for real-time public reporting of environmental and fish health data?	Phase 2 1. **Effectiveness of current regulation** Effectiveness of current regulation in promoting objectives of the RMPS, having regard to risks and benefits and international best practice.
4. What adaptive management triggers (e.g., the "Traffic Light" system) are most appropriate for Tasmania's warming coastal environment?	Phase 2 2. Feasibility of alternative production models
5. Are there features of cost recovery models operating in other jurisdictions that could be applied in Tasmania?	Phase 2 3. Appropriateness of the cost recovery model for salmon industry regulation