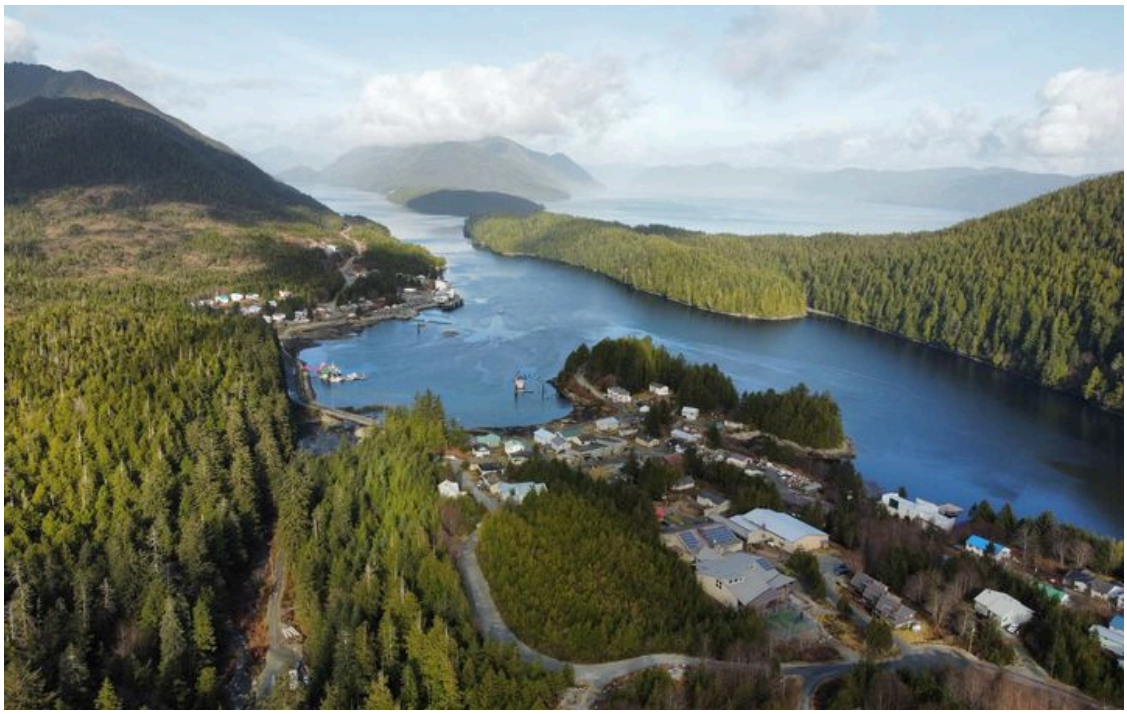
KITASOO XAI'XAIS
FINFISH AQUACULTURE

INNOVATION PLAN



Kitasoo Xai'xais Nation

Spring 2024

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CONTEXT AND EXECUTIVE SUMMARY

Kitasoo Xai'xais (KX) Nation has been updating its sustainable development model for their local finfish aquaculture sector in response to a new Department of Fisheries and Oceans (DFO) policy outlining a goal to transition the ocean net-pen industry towards reduced interactions in the environment between wild and farmed salmon. This period has been marked by significant uncertainty and concern for communities dependent on this industry. DFO has been updating its policy language and goals to better include Indigenous interests and explain its decisions. Most stakeholders and First Nations agree on the need for new incentives to drive technology and innovation to enhance the industry's sustainability and increase public support over the long term.

Kitasoo Xai'xais have continued to assert their rights and title authority in their traditional territory. They have invited DFO to engage in collaborative efforts and to gain insights into their forward-thinking approach to industry management. The Kitasoo Model*, which has been instrumental in fostering a robust and sustainable economy over the past three decades, serves as the foundation for this collaboration.

***The Kitasoo Model At-a-Glance**

A pioneering framework for sustainable finfish aquaculture, the Kitasoo Model integrates stewardship of natural resources with community-led economic development. Grounded in co-governance and cultural values, it ensures environmental health and economic vitality through innovative and adaptive management practices.

KX does not support a complete land-based transition because it would force the industry to re-locate away from the KX territory and move to more urbanized centers with accessible power infrastructure. However, the Nation is considering new technologies that are supported by "green power." The Kitasoo Xai'xais Territory is rich in potential hydro-power using watersheds with large hanging lakes close to the ocean.

This report has been compiled as a "Made-in-Klemtu" vision for the future of the salmon farm industry. Community objectives have been addressed, and there is an exploration of new technologies, along with potential metrics and indicators that are suitable and achievable within the Kitasoo Xai'xais environment.

Implementation of new innovation programs are expected to start in 2025. Initial stages will begin with feasibility research of new technologies, as well as recruiting Mowi Canada West to support technical knowledge and capacity building at KX's local salmon hatchery. Short-term priorities include fulfilling the basic siting requirements for the region through the re-activation of outstanding referrals. This includes the Sheep Pass finfish farm replacement site and the Kidd Bay fish biomass adjustment. KX will initiate

the planning and evaluation of research priorities concerning wild salmon and ocean modeling. This will be done in partnership with the Department of Fisheries and Oceans, other governmental bodies, academic circles, and research institutions. Additionally, they will develop an extensive communications plan and reporting system for the community and the general public. New investments in research and a thorough understanding of the plight of wild salmon in the Kitasoo Xai'xais territory are required to identify the major stressors and population regulators of wild salmon. Lastly, farming alternative species will be explored, and more work into supporting greater food-fish access and food security will support aquaculture opportunities in the future.

As the Kitasoo Xai'xais progress with development of the Kitasoo Xai'xais Finfish Aquaculture Innovation Plan (KX Innovation Plan) and contemplate management objectives, indicators, and monitoring metrics to achieve sustainability goals, global sector trends could offer guidance for future planning. This is particularly relevant in efforts to reduce fossil fuel dependence and to prioritize biodiversity, thereby aligning with the Kitasoo Xai'xais Area-Based Management Approach (KX Approach). Several key priorities have been identified in the KX Innovation Plan through community information sessions, social media engagement, and member surveys. These will all be incorporated into the Kitasoo Model.

From the Kitasoo Xai'xais community, two definitive messages emerged. Firstly, they are committed to their dual priorities: the conservation of wild salmon and the enhancement of community well-being, all while promoting the sustainable development of the salmon farming industry. Secondly, the community has clearly expressed that there are avenues to achieve higher environmental and social standards within the fisheries and aquaculture sector. The Kitasoo Xai'xais members are eager to support the design and adaptation of systems that are resilient to uncertainty and inclusive of social equity in both current operations and future developments. Notably, they emphasized the importance of training and career progression in new research and technologies, as well as the need for improved communication and operational transparency with the salmon farms. The Kitasoo Xai'xais community is determined to continue innovating and enhancing their participation in the industry.

INDUSTRY CHALLENGES

Despite the industry continuing to develop and implement new innovations in the sector, there have been significant uncertainty and policy-related barriers in the management of the BC sector. The primary challenge is procuring investment to support research and development of these technologies. Investors require relative certainty and incentive which the Canadian government could support by providing longer term licenses (minimum of 9 years) and critical funding.

Another challenge in the sector is public perception. There is significant misinformation around salmon farming and trusted public communication is lacking. A coastwide Blue-

Ribbon Science Panel with representation across sectors could address this problem over time. Misinformation, compounded by political interference, has been contributing to public confusion and mistrust regarding the industry. It is imperative that such interference ceases, and that governments commit to investing in and adhering to scientific evidence to inform their decision-making processes.

CURRENT SITUATION

The development of the Kitasoo Xai'xais Innovation Plan has been an iterative process over 14 months. As of January 2024, uncertainty remains on how First Nations like Kitasoo Xai'xais will become part of the governance and oversight of the proposed finfish aquaculture transition, and how Nations' transition plans will be accommodated in DFO's final transition policy. In the meantime, KX continues to operate under the Kitasoo Model and collaborates with their partner, Mowi Canada West, to pursue shared objectives in Kitasoo Xai'xais economic development portfolio, while also furthering the advancement of community social license.

Over the past 35 years, the Kitasoo Xai'xais have purposefully and independently initiated and developed salmon farming within their territory. Through their growing body of scientific research and local knowledge, they have carefully and thoughtfully developed the sector in a sustainable manner. The KX Innovation Plan aims to further minimize potential environmental impacts while maximizing economic opportunities for the Kitasoo Xai'xais people.

LOOKING TO THE FUTURE

The next steps for implementing the plan include engaging in conversations and discussions with federal and other governments to support the Kitasoo Xai'xais people and their vision for the future of the sector in their area. Following this, new governance authorities will be established to support Area-Based Aquaculture Management (ABAM). These authorities will work alongside the Department of Fisheries and Oceans, other governments, the Kitasoo Xai'xais Leadership Councils, the Kitasoo Xai'xais Monitoring Team and the science panel to oversee the implementation of this plan.

The community has been engaged in discussing new technologies, actioning management, stewardship and science teams, and collectively moving towards the KX Salmon Centre of Excellence. These are all part of the KX Approach, as well as offering areas for the Kitasoo Model to adapt and evolve to the KX community needs and interests.

KX VISION

The salmon farming industry is a key contributor to the economic stability and overall well-being for the Kitasoo Xai'xais community. The vision of the Kitasoo Xai'xais Nation is centered on empowering its members, fostering self-reliance, and self-determination within the community. A critical aspect of this vision involves empowerment through the management and control of resources and economic development opportunities within their Territory.

This approach aligns with Canada's objectives for the self-determination and self-government of Indigenous peoples.

The KX Innovation Plan engages community members in the current DFO Transition policy and provides members with opportunity to give feedback on the direction of their plan and desired outcomes. This plan emphasizes the importance of continuous collaborative efforts among the Kitasoo Xai'xais government, the Canadian government, and other governmental bodies to make informed decisions grounded in science for the salmon farming industry, ensuring environmental protection is at the forefront. Salmon farming and environmental protection are not mutually exclusive, but they can coexist. The Kitasoo Xai'xais leadership plan to enhance the Kitasoo Xai'xais Area-Based Management Approach exemplified by the Kitasoo Model. This enhancement will focus on fostering innovation to ensure that the industry remains in alignment with an ecosystem-based approach. This approach will be evaluated using mutually agreed-upon metrics, underpinned by both sound science and local knowledge. Lastly, the Nation supports transparency and information sharing that is open to any interested parties.

KITASOO XAI'XAIS AREA-BASED MANAGEMENT APPROACH (KX APPROACH)

PRINCIPLES AND VALUES

The KX Approach is grounded in the principles of sustainable development by addressing goals of stewardship, ecosystem management, community needs, representation, and sustainable growth management as the business has evolved through their partnership with Mowi.

The Kitasoo Xai'xais community leads with values of shared decision-making, stemming from the recognition of their Indigenous rights and title, as well as their rights to self-

determination. These principles are also recognized by the Government of Canada as the 10 Principles of Reconciliation (see Appendix I). For example, the sixth principle names how constructive arrangements such as memorandum of understanding (MOU) agreements represent collaboration through recognition and respect:

Treaties, agreements, and other constructive arrangements between Indigenous peoples and the Crown have been and are intended to be acts of reconciliation based on mutual recognition and respect.

DFO could actively recognize this Principle by creating space for the KX Vision and KX Approach to research, networking, and planning – but is only meaningful if DFO comes to the table and participates in collaborative decision-making under the Kitasoo Xai'xais Area-Based Management Approach.

The Kitasoo Model places significant emphasis on scientific rigor, recognizing the importance of innovation and technology as key drivers for developing new solutions to challenges. The KX Salmon Centre of Excellence has a primary role to oversee science in a rigorous and transparent way and places importance on consistent and effective communication. As part of the evolution of the Kitasoo Model and goals for effective and transparent decision making, KX will formally establish a Management Committee (The KX Aquaculture Management Committee) to oversee the local salmon farming sector and the implementation of the KX Innovation Plan. Representatives on the Board will include individuals from Elected and Hereditary Leadership, Stewardship Department, The Kitasoo Economic Development Corporation, and other partners as required. Additionally, a Science Panel and a Communications specialist will provide regular reports to the KX Aquaculture Management Committee.

Stewardship practices will be guided by the Kitasoo Xai'xais community and directed to a newly established KX Monitoring Team, which will focus on two main priorities. Firstly, the team will conduct monitoring in and around salmon farms, adhering to the standards set by the Kitasoo Xai'xais community. Secondly, the team will also have a robust research and monitoring role, concentrating on the overall health of wild salmon populations. The addition of Kitasoo Xai'xais stewardship practices will ultimately contribute to evaluating the effectiveness of farm management strategies. Furthermore, the Kitasoo Xai'xais will retain the authority to shut down salmon farms if significant impacts are detected due to farm activities.

TOOLS FOR DECISION MAKING

Adopting global Sustainable Development Goal (SDG) targets, integrating new technologies, and establishing a Blue-Ribbon Science Panel are key instruments that could drive sustainability innovation within the sector.

Kitasoo Xai'xais will seek a nine-year license term in order to increase the incentive for investment into research and development.

Area-based management, already a component of the Kitasoo Model, serves as another vital tool. It plays a significant role in active adaptive management and future planning. In a manner akin to the SDGs, environmental indicators or targets can also be employed in assessing impacts on the benthic environment, local biodiversity, and macrofauna. For example, it is known that cultured salmon are particularly vulnerable to changes in the environment and therefore may be considered warning indicators of environmental change.

THE KX INNOVATION PLAN GOALS

01 KX to lead co-governance of local finfish sector, contributing to the oversight and management of the industry in their local area.

02 KX to lead wild salmon monitoring and research, including assessing the impacts and activities of salmon farming.

03 KX to establish a "KX Salmon Centre of Excellence" by partnering with DFO, provincial governments, industry and academia as required to advance research and science, and to provide trusted communication and information to the public about wild salmon survival and interaction with salmon farms.

04 KX to drive innovation in salmon farming practices and promote performance-based and incentive-based development.

To realize the overarching goals, the primary objectives for the Kitasoo Xai'xais Innovation Plan are:

- To enhance the adoption of technology and innovation in the local industry through active Kitasoo Xai'xais involvement,
- To establish the KX Aquaculture Management Committee as an oversight authority for environmental monitoring and management, and
- To develop and implement a plan for metrics and indicators that reflect the goals of the Nation and address the concerns of the general public.

These objectives are elaborated throughout the KX Innovation Plan and have been vetted through community engagement with KX community members.

ALIGNMENT WITH GLOBAL SUSTAINABILITY

The Kitasoo Model could specifically focus on its aquaculture sector and contemplate alignment with the United Nations Sustainable Development Goals (SDGs). Concurrently, the Federal Government has initiated its strategy for the salmon farming sector as part of a national commitment. This strategy aims to meet specific targets in various critical areas, including fish health, climate change adaptation, sustainable feed, food security, food traceability, ocean health, and public reporting. Many of the global priorities in sustainable salmon farming have already been considered in The Kitasoo Model. Mowi and Grieg are considered the top two global leaders in sustainable protein producers. Mowi's commitment to global sustainability trends not only enhances its market position but also potentially benefits partners such as Kitasoo Xai'xais (KX) by opening doors to new markets and marketing opportunities at a global scale. For instance, the collaboration between KX and Mowi Canada West has facilitated the introduction of KX's Klemtu Spirit smoked salmon into Walmart stores. This milestone exemplifies how strategic connections with industry leaders like Mowi can significantly amplify the reach and impact of locally sourced sustainable products, providing them with a platform on the global stage and enhancing their visibility in competitive markets.

> Private investors and fund managers are demanding a more standardized way to measure corporate operations across Environment, Social and Governance (ESG). Investment success is increased, and risk is decreased when corporations look towards holistic business impact rather than exclusively profit focused goals.

By leveraging both the SDG's and the investment sector's Environment, Social and Governance (ESG) objectives, Kitasoo Xai'xais has access to a global framework to refine their standards for corporate partners. This alignment will incorporate new technologies and innovations being tested worldwide. As a result, the Kitasoo Xai'xais will play an active role in the development and implementation of metrics focused on carbon reduction, enhancing biodiversity, and improving food security.

BASELINE OF THE KX SALMON FARM INDUSTRY

It is vital to acknowledge that the Kitasoo Xai'xais have been employing sustainable and ecosystem-based approaches to salmon farming since the inception of industrial-scale operations in this sector. The Kitasoo Xai'xais began salmon farming in their territory 36 years ago.

In 1988, when the industry was still nascent, the Kitasoo Xai'xais commenced their salmon farming business. This venture was initiated with their own investment, knowledge, assets, and techniques, and initially, they operated independently without any partners. After several years of successful operation and in response to the changing economic landscape of the industry, it became apparent that partnering with a larger

multinational company was the strategic path forward. In 1998, following an earlier unsuccessful attempt to form a partnership with a major Canadian-based salmon farming company, an agreement was reached with Nutreco Inc., a prominent Dutch agri-food corporation looking to expand into the Canadian salmon farming sector. Nutreco Inc. was a suitable match for the Kitasoo Xai'xais, being a mature European company with a progressive approach to the triple bottom line of environmental, social, and economic sustainability – principles that have always been integral to the Kitasoo Xai'xais culture and development approaches, including aquaculture.

The Kitasoo Model for salmon farming emerged from the first community-to-salmon farm company business protocol agreement in British Columbia, signed in 1998. This Model acts as a regulator of salmon farming activities for the partner company, granting complete developmental control to the Kitasoo Xai'xais, with business certainty based on performance. Over time, Nutreco was acquired by Stolt Sea Farms, which was subsequently taken over by the Norwegian-owned Marine Harvest Canada, now known as Mowi Canada West. The partnership between the Kitasoo Xai'xais and Mowi Canada West has continued to evolve and prosper over the years.

THE KITASOO MODEL

The Key elements of the Kitasoo Model include:

01 KX and the salmon farm company are required to have a signed and current protocol agreement in order to operate. This agreement spans 10 years, with an option for renewal every 5 years, aligning with a typical business cycle and providing the certainty needed for long-term infrastructure investment.

02 KX controls the number of sites and total number of fish grown in the Territory.

a. Production and growth are matched to the capacity of the community to accept the jobs including farming, harvesting and processing to maximize employment in Klemtu.
b. Farm sites are strategically identified to minimize interaction with important food-producing areas and sensitive habitats in the Territory.
c. Six farm sites have been recommended to operate in pairs. These sites are geographically separated allowing for isolation of year classes and proper site rotation and fallowing.

03 KX owns all the salmon farm tenures/sites and as a result has the legal controls required to shut-down salmon farms if the protocol agreement is breached.

04 The protocol agreement only permits a single company providing improved certainty for company and biosecurity for farming in the region.

05 Species permitted are Atlantic salmon that are at least second generation in British Columbia, thereby minimizing any potential introduction of novel pathogens, and ensuring that any escapes have a reduced impact on interbreeding and the genetic integrity of Pacific salmon.

06 Continued farming is contingent upon performance and environmental indicators that account for potential impacts on benthic environments, sea lice, pathogen amplification, and biodiversity.

07 KX conducts its own research on potential impacts from farms including:

a. Annual juvenile wild salmon and sea lice monitoring since 2004, a pioneering initiative in BC.
b. Monitoring potential contaminants in seafood in proximity to farms.
c. Conducting biodiversity surveys around farm sites.
d. Assessing wild adult salmon escapements in areas near and distant from salmon farms.

08 Investments are made in community capacity building and employment, including minimum employment thresholds for KX members and guaranteed processing operations within the community.

09 Additional investments are made in community infrastructure and services.

In addition to adhering to the requirements of the Kitasoo Model, Mowi has been encouraged to take a leading role in sustainability and to adopt new, proven technologies at the Kitasoo Xai'xais farms. Over the past two decades, Mowi has identified and implemented several changes in salmon farming techniques and technologies aimed at reducing the environmental footprint of each farm. These changes include:

- Improved health and rigor of broodstock and egg quality through rigorous genetic and other screening techniques.
- Modernized freshwater hatcheries primarily using RAS Technology.
- All smolts are certified as disease-free prior to their transfer to sea sites.
- Vaccines have been developed for most major pathogens and used on all smolts that are transferred to sea sites. This has led to reduced disease outbreaks and lowered the need for therapeutants.
- Implementation of improved sea lice (pest) management controls, including use of new vessel-based systems.

- Implementation of precision feeding systems, which include advanced monitoring to optimize food conversion and minimize the dispersion of wasted pellets into environment.

- Increased veterinary oversight for optimal fish health.

- Enhanced mortality recovery systems have been introduced, aiding in the early detection of fish health issues, and enabling quicker responses for any necessary remedial actions.

- There has been an increased use of vegetable proteins as substitutes for fish oil/meal in feeds, along with a greater reliance on sustainable ingredients in fish feeds.

- Advanced site engineering for cage systems, including improvements in anchoring and replacement requirements.

- Implementation of third-party certification throughout the production chain, adhering to standards benchmarked by the Global Sustainable Seafood Initiative, specifically focusing on Best Aquaculture Practices within Kitasoo Xai'xais Territory.

The adoption of new technologies and operational changes have led to enhanced culture conditions and overall improved performance at the Klemtu operations. Over the past decade, the average mortality rate at these operations has been 11%, which is lower than the 15% average for Mowi's combined operations in British Columbia. Additionally, the number of sea lice treatments in Klemtu over the last ten years is 29% less compared to other operations in British Columbia. The duration of the marine grow-out culture phase across all BC operations has decreased from 22-24 months a decade ago to 18-20 months at most farms currently. Interactions with marine mammals at these sites are exceedingly rare.

> **Notably, the Kitasoo Xai'xais sites have experienced virtually no fish escapes, with the exception of one single fish lost during a fish health audit in 2017.**

KX INNOVATION PLAN: AREAS OF FOCUS

Building on the sustainable foundation established by the Kitasoo Model and the industry's advancements over the past two decades, the following areas represent the next steps that the Kitasoo Xai'xais view as crucial for enhancing the Kitasoo Model and furthering the sustainability of the industry in their area.

THE CREATION OF A NEW GOVERNANCE MODEL

During the development of the KX Innovation Plan, the need for a new governance process became apparent. This process is essential to fulfill the interests and rights of the KX Hereditary and Elected Leaders and the community. It aims to foster trust and transparency in the Nation's decision-making processes, as well as in its negotiations and collaborations with federal and provincial counterparts. Important to the process is ensuring that the KX community members and KX Monitoring & Stewardship Team both have solid and secure information feedback systems with the new KX Aquaculture Management Committee. The KX Aquaculture Management Committee representatives (to be announced) will sit with other governments at a common Kitasoo Xai'xais Area-Based Aquaculture Management Board which will be a co-governance decision-making table.

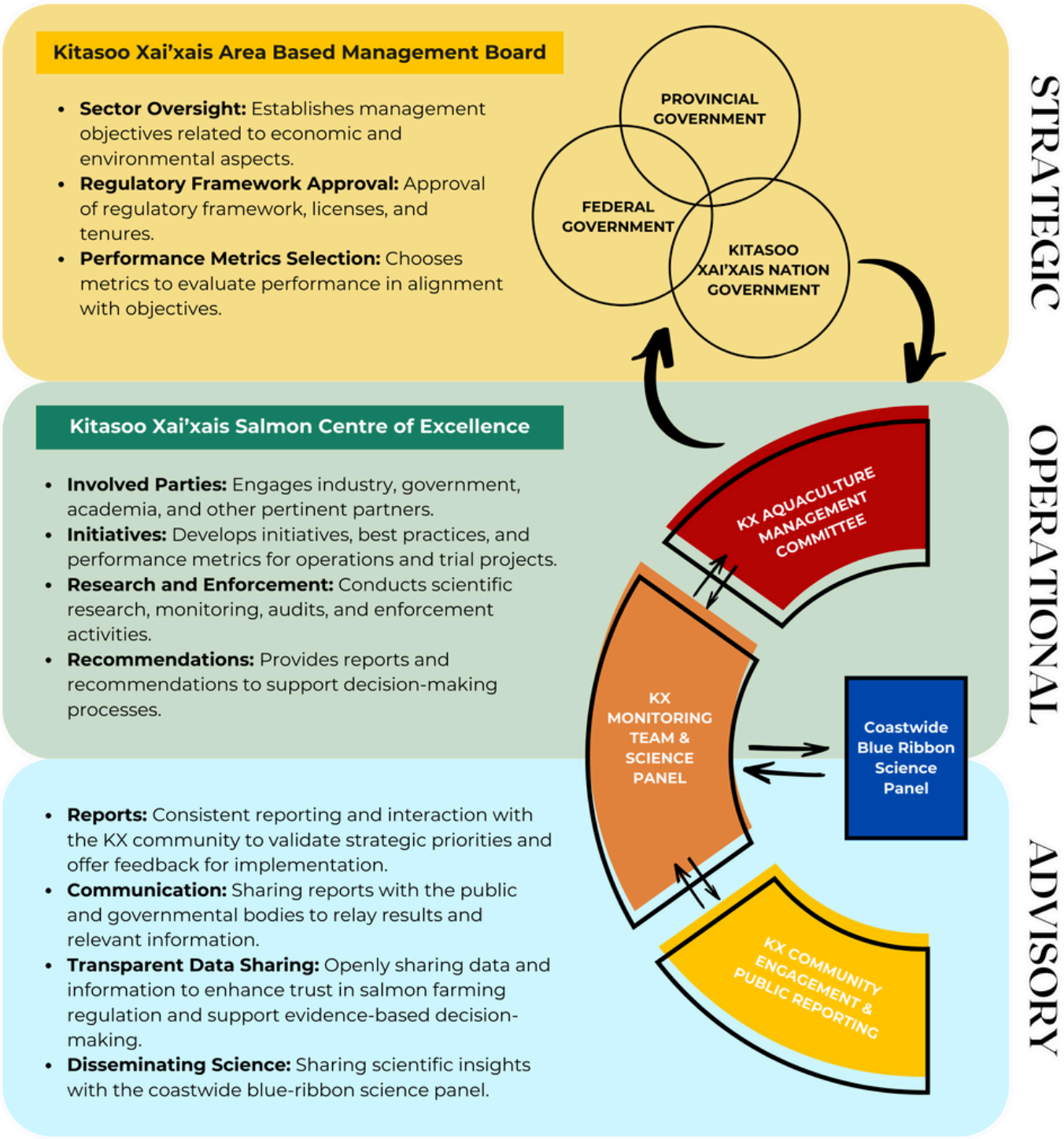


Figure 1: New governance organization for the salmon farm industry following the Kitasoo Model.

As part of the new governance model, Area-Based Management (ABM) will become a lead principle for fisheries and aquaculture decision-making. ABM has been effectively integrated through the Kitasoo Model and the KX Approach and is actively being utilized in the relocation of the Lime Point finfish aquaculture site, as well as in addressing other referrals that have not been acted upon by the Crown over the past five years. Additionally, the Kitasoo Xai'xais Marine Plan is set to undergo a review. This review aims

to rezone aquaculture and conservation areas to ensure compatibility with the proposed initiative for a National Marine Conservation Area in the Central Coast of British Columbia.

The new governance model addresses and improves the consultation process with the Crown. The Kitasoo Xai'xais are developing a new approach to manage aquaculture referrals. This approach aims to establish a standard of service that ensures timely and communicative review and processing of referrals. It will align with the established role of the Kitasoo Xai'xais Nation as the rights-holder, a status recognized in existing stewardship and conservation planning efforts.

Through this new governance model, KX will be actively engaged in the oversight of the Conditions of License. They will be positioned to actively contribute to the evaluation, regulation, and promotion of research and innovation within the industry. This involvement will be particularly significant as the industry seeks longer-term licenses, which are essential for encouraging new investments.

KX SALMON CENTRE OF EXCELLENCE

The KX Salmon Centre of Excellence is a concept and practice that will align the research and goals of KX community for ensuring minimal impacts of the finfish aquaculture industry. The primary area of focus will be on conducting research into wild salmon, with the aim of better understanding the factors that influence salmon survival in the region. The Kitasoo Xai'xais territory encompasses approximately 100 salmon-bearing rivers. The cornerstone of this program will involve identifying the limiting factors affecting wild salmon populations and then working to address local factors within the capabilities of the Kitasoo Xai'xais Nation and their partners. This effort will encompass exploring restoration opportunities and utilizing the two salmon hatcheries in the Kitasoo Xai'xais area. The second area of focus will be to build upon existing KX research to examine the health of wild salmon, particularly in relation to their interactions with local salmon farms. A detailed research program and plan for the Stewardship and Farm Monitoring Program, which covers both wild salmon and their interactions with farms, is outlined in Appendix II.

The research and monitoring programs will include:

- Fish farm reporting and auditing
- Wild salmon migrations (outmigration of juveniles, open ocean, returning adults)
- Parasite and disease monitoring in wild populations
- Wild salmon health and survival in freshwater and their early ocean migration
- Salmon restoration opportunities across the territory
- Communications and dialogue between farms and community members
- Additional areas to be determined with partners

The third area of focus for The KX Salmon Centre of Excellence involves managing the local farms and collaborating with partner Mowi on new site-based technologies and innovative applications. This will encompass the selection, application, monitoring, and evaluation of new salmon farm innovations aimed at improving environmental sustainability. These innovations will be tailored based on the specific parameters and limitations of each salmon farm site. For detailed information on technology innovation options by site, refer to Appendix lll.

Since the 1980s, the Kitasoo Xai'xais has been operating a coho and chum salmon hatchery in Klemtu, and since 1993, they have also managed a separate sockeye hatchery. The technology used in these hatcheries requires some upgrading, and there is a need for additional technical support for the limited staff who are currently working part-time. Mowi Canada West, possessing significant expertise in culturing juvenile salmon, has offered to provide resources.

The KX Salmon Centre of Excellence equips the Kitasoo Xai'xais Nation with the necessary guidance to develop their own research program, enabling collaboration and advisory interactions with other scientists. Additionally, it will facilitate the exchange of information and knowledge among global experts in the field of salmon farming innovation and technology.

Kitasoo Xai'xais is uniquely equipped to lead advanced research initiatives in their territory given their proven capability and extensive experience in conducting rigorous scientific research. Their collaborative endeavors have involved working closely with scientists from the Department of Fisheries and Oceans, various non-governmental organizations, and academic institutions. Further, the KX staff have been co-authors in several peer-reviewed publications. With a solid foundation and the necessary resources in place, they are poised to expand their role and function as a Salmon Centre of Excellence. This expansion will focus on enhancing knowledge around the interactions between wild and farmed salmon. To achieve this, there is a pressing need for additional funding and support to fully realize the potential of these initiatives.

A Research Project Manager will be hired to coordinate research projects in the Territory and work within the KX Stewardship Department to meet goals and objectives. Additionally, they will ensure findings are reported back to the KX community. Further, a community marine and freshwater incident reporting and investigation system will be developed. The farm monitoring and auditing will proceed under clear transparency goals that promote open dialogue with farm staff and management ethics to dispel any concerns of hidden or disingenuous information.

An internal Kitasoo Xai'xais team will be dedicated to establishing the KX Salmon Centre of Excellence. The initial step will be to identify a suitable physical location and procure the necessary infrastructure to accommodate the program staff and administrative operations. This team will focus on building foundational technical capacity, recruiting qualified staff, and forming partnerships with scientific entities to kickstart the initiative. A key aspect of this process will involve securing stable, annual operational funding for the Centre. Additionally, aligning existing funding sources, such as the Salmon Enhancement Program, Aboriginal Aquatic Resource and Ocean Management Program, Aboriginal Fisheries Strategy, and the DFO's Resource Management Operations Technician, will be crucial. This financial foundation will support new research and innovation projects, enabling the Centre to connect with and contribute to global-level innovations in the field.

ECOSYSTEM APPROACH, SPATIAL PLANNING AND OPTIMAL FARM SITES

As explained in earlier sections, The Kitasoo Model represents a balance of social, economic, and environmental priorities and is designed as an adaptive area-based management model to ensure long-term sustainability.

Currently, there are five operating fish farms in KX Territory, with an additional site in the process of relocation (see Figure 2). KX prioritizes a conservation-based economy supported by salmon farming, forestry (utilizing ecosystem based management approaches), a world class eco-tourism business and environmental monitoring and conservation research. Fishing and seafood continue to be integral to the jobs and identity of the community. Since 2002, the Kitasoo Xai'xais have been highly active and a leader in marine research, planning, and zoning along the coast. In 2022, they announced the establishment of the first Indigenous marine protected area in British Columbia at Kitasu Bay, a site known for its rich marine resources and one that has been crucial to the Kitasoo Xai'xais for millennia.

The Kitasoo Model currently provides for six farm sites in the Territory to provide optimal farming and fallowing opportunities. These sites are chosen specifically for their environmental performance for salmon farming. Currently only four of the sites are considered optimal. The fifth site, Cougar Bay, requires modification due to strong currents, and the sixth site, Lime Point, has not been utilized in recent years due to exposure of extreme winter outflow winds. The Lime Point farm is being relocated to a more sheltered location on the north side of Sheep Channel, which will reduce interactions with wild salmon to only one side of the channel. These site amendments have received support from the Kitasoo Xai'xais government but are currently awaiting completion of the Department of Fisheries and Oceans review process.

> **The Kitasoo Xai'xais Nation believes these sites should receive immediate approval and implementation to fully realize the environmental protections and benefits offered by the Kitasoo Model.**

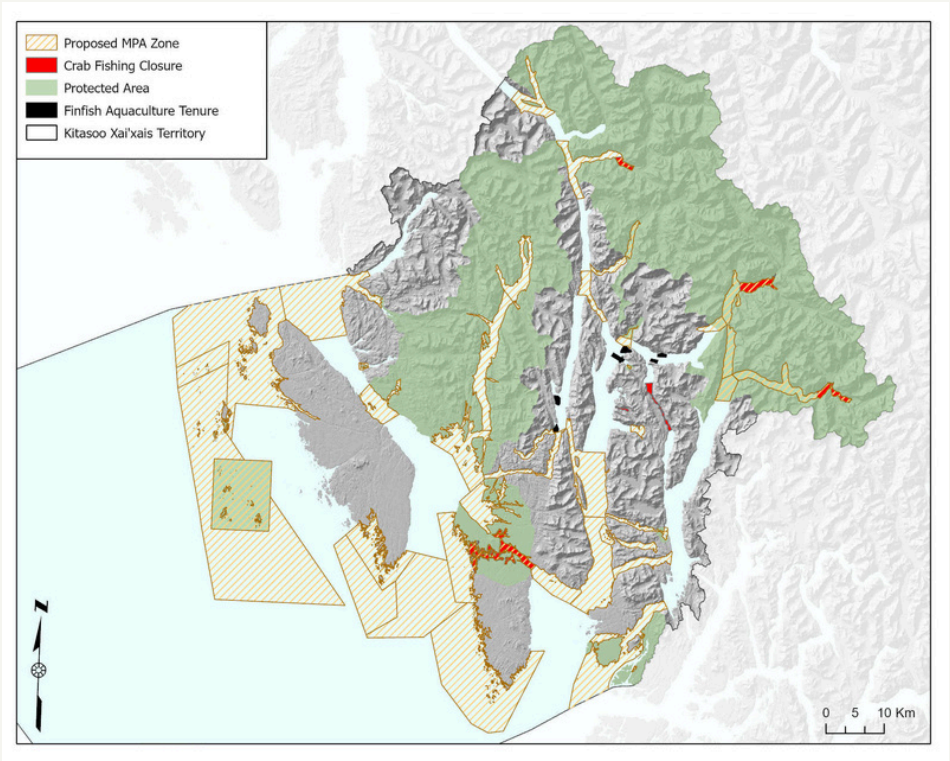


Figure 2. The traditional territory of Kitasoo Xai'xais shows a strong conservation ethic and consideration for sustainable economic development.

NEW FARMING TECHNOLOGIES AND PATHWAYS

Mowi Canada West is a global leader in farmed salmon production and has access to world-class technology that is being developed primarily in their Norway facilities. Mowi has identified initial opportunities to advance the technology systems at KX farms, and to explore innovation opportunities tailored to the unique needs of the KX community.

A comprehensive list of technologies potentially suitable for farms in the Kitasoo Xai'xais Territory can be found in Appendix lll. This list not only includes current technological innovations but also identifies those requiring further research or advancements in development. Additionally, it encompasses technologies that are energy-intensive, necessitating access to renewable energy sources. Energy systems pose a significant limitation to the implementation of these new technologies. KX is considering possible alternative energy sources that utilize hydropower generation within the territory as an effort to support carbon reductions.

Advancing technology development in the sector can be significantly accelerated with committed government investment in research and development.

This investment is key to bolstering the long-term sustainability of the sector. Furthermore, the establishment of a minimum of 9-year renewable aquaculture licenses by the government would provide the necessary long-term certainty, fostering innovation and growth in this vital industry. KX and Mowi recognize their shared interest in accessing low investment technologies for the intermediary term as these new policies become formalized in government. Mowi has clearly communicated their needs and timelines for strategic investment into new areas, including the development of post-smolt production programs.

The most accessible technology and innovation for the new sites around Klemtu involve 'smart farming'. This encompasses the implementation of remote feeding centres, enhancements in communications to manage increased data-transfer loads, and the adoption of Artificial Intelligence (AI) technologies. These AI technologies will facilitate remote fish identification, aiding in better understanding of fish health and enabling quicker responses to any concerns. Additionally, they will be instrumental in recording growth and other biometric data of the fish. Many of the other technologies that are being considered to reduce sea lice and benthic impacts also involve more physical infrastructure, and therefore may not be suitable for all the oceanographic conditions in the Klemtu region.

There has been significant research on sea lice and potential risks of transferring lice from the salmon farms to wild fish populations. Sea lice outbreaks are managed intensively at the farms during the juvenile salmon out-migration, and new technologies and treatments will work to reduce the threshold and tolerance levels of sea lice. The sting-ray technology is used to directly reduce sea lice occurrence by using lasers to pinpoint and shoot-off the individual sea lice attached to swimming salmon. In various global regions, a biological solution involving the use of cleaner fish, which are grown in the same pens as Atlantic salmon, has been effective in reducing sea lice. This approach is particularly desirable and of interest for implementation on the BC coast, provided that a suitable species can be identified to align with the specific environmental conditions of the region.

The KX Salmon Centre of Excellence will be looking to understand natural sea lice populations and sources that may be harbouring the parasite and affecting both wild and farmed salmon. The prioritization of effectiveness and safety in treatments remain a focus, with ongoing investigations into their efficacy. Additionally, new technologies such as barrier devices, including barrier curtains and bubble curtains, as well as advanced methods like deep-feeding using submersible cages and lights, and bag-system technologies, show promise. These innovations are particularly viable for sites that offer suitable marine conditions.

Benthic impacts are actively monitored through Conditions of License and environmental genomics (eDNA) methods present opportunity for new research questions and understanding the recovery of finfish aquaculture sites back to baseline conditions. Mort retrieval systems in the fish pens allow for the quick collection of mortalities, better diagnosis of the causes of fish mortalities, and improved response time to address fish health concerns.

Although many closed and semi-closed containment options are currently limited by energy and power requirements, there are promising developments. Specifically, within the Kitasoo Xai'xais area, there are at least four new potential sites identified that could feasibly support a green-powered post-smolt production facility. This presents an opportunity for sustainable expansion in line with environmental priorities. The ideal attributes for such a site include a protected ocean location paired with a large, elevated lake above it, which lacks anadromous fish. Additionally, it's crucial that the site possesses sufficient hydraulic capacity to generate a minimum of 1.5 MW of continuous, year-round power. This combination of features would create an optimal setting for a sustainable, green-powered post-smolt production facility. Three of these potential sites have had previous industrial developments that are currently abandoned.

A new post smolt marine site could potentially be developed using land based, closed or semi-closed marine containment systems, with the Klemtu sites producing the smolts for grow out on a more regular cycle. A combination of gravity freshwater and pumped saltwater could be used to manage salinities in the rearing containers. Effluent could be captured, screened and wastewater treated. The abundance of green hydro power would be used to run the entire facility including any accommodations and potentially any mechanical equipment, including support vessels, making this an entirely zero carbon producing facility.

Smolts would be reared to a size of 600-700 grams and then transferred to the existing six grow-out sites. The timing of this transfer would be strategically planned to reduce the final grow-out period to 12 months. This strategy aims to minimize the potential exposure between farmed and wild salmon, especially during the critical fall and spring sea lice events. By implementing this method, the risk of disease outbreaks can be reduced, and it would also enable an extended fallowing period for the paired grow-out sites to over 12 months, further decreasing the exposure to wild salmon.

ACCOUNTABILITY

The Kitasoo Xai'xais new governance process, along with the establishment of the KX Salmon Centre of Excellence, are specific efforts aimed at improving accountability of both governments and the industry. These initiatives are designed to ensure greater responsibility and transparency to the community and the public at large. There is a wider call to develop a coast-wide Blue Ribbon science panel as a team of experts that will endorse and verify strong science and innovation prospects for the salmon farming industry in British Columbia. It should complement the Canadian Science Advisory Secretariat but have applied knowledge and understanding of new technologies in finfish aquaculture.

The KX Aquaculture Management Committee and Science Panel will be responsible for overseeing the research priorities and supporting the local KX Monitoring Team to collect and analyze data to address research questions. As time progresses, there will be a growing confidence that the research conducted is effectively addressing concerns and identifying viable pathways forward. This research will play a crucial role in supporting sustainable operations within the finfish aquaculture sector and in enhancing the resilience of wild salmon populations.

A primary objective of this plan is to establish and nurture successful long-term partnerships. Building robust collaborations with other governments, reputable academic institutions, NGOs, and leveraging their scientific expertise and tools is crucial. Such partnerships are essential for enhancing the credibility and accountability of the scientific outputs from the KX Salmon Centre of Excellence and to maximize the utilization of multi-sector resources. This collaborative approach aims to achieve a shared goal of ensuring environmental compatibility within the salmon farming industry.

COMMUNICATIONS AND TRANSPARENCY

A prominent message received is the need for enhanced communication between the operations at the salmon farms and the Kitasoo Xai'xais community. Improved lines of communication are vital to maintaining trust and supporting the ongoing operations of the industry in Klemtu. As part of the new governance process, there will be direct and regular engagement with the community from Mowi, from the KX Aquaculture Management Committee, as well as the KX Monitoring Team and Science Panel. There will be regular engagement from the internal teams to support the new governance process, and a website will be maintained to provide up to date information to the community on salmon farm operations.

A new incident reporting system will provide community members with an opportunity to report any concerns or to make observations from the territory. These may or may not be related to the finfish aquaculture industry but will involve KX Stewardship who will gather information and report back to the member and the community through the website when deemed appropriate.

The new KX governance process will include communications and administration staff to support both internal and external communications. Community members will be kept informed of general activity and have opportunity to learn and participate in some of these processes. Another priority will be to create a publicly accessible website. This platform will offer updates on farming operations, as well as disseminate any scientific outputs and findings from the KX Salmon Centre of Excellence.

GLOBAL SUSTAINABILITY OF THE FINFISH AQUACULTURE SECTOR ALIGNMENT

The Kitasoo Xai'xais have established a sustainable model for the finfish aquaculture sector. However, significant questions regarding the sustainability, enhancement, and restoration of wild salmon persist. Addressing these challenges could benefit from the shared use of technology and innovation within salmon farming operations.

The political landscape surrounding salmon farming has prompted DFO to reconsider the current operational norms. Public dialogue appears to increasingly support the adoption of new technologies that promote closed containment, semi-closed containment, and land-based salmon farming as a part of British Columbia's future. The Kitasoo Xai'xais are open to enhancing sustainability. However, the Kitasoo Model, along with data and research from the Kitasoo Xai'xais Territory over the past 20 years, has not

revealed significant concerns or impacts on wild salmon. Nevertheless, the Kitasoo Xai'xais are in a distinctive position to broaden their research objectives and to address the issue more comprehensively of whether salmon farming impacts wild salmon populations.

The development motivation of the United Nations Sustainable Development Goals (SDGs) and the private sector's Environment, Social and Governance (ESG) standards stem from International Panel on Climate Changes (IPCC). They are also informed by scientific climate projections that suggest environmental impacts and catastrophe.

The investment sector is keenly aware of the broader economic implications of climate change and is consequently championing climate-conscious investments. In the fisheries and aquaculture sectors, there are clear targets to reduce carbon emissions throughout the commodity chain. In British Columbia, salmon farming currently relies significantly on fossil fuels due to remote operations and limited access to the power grid for greener energy alternatives.

> **Interest in sustainable technologies and the funding of carbon offset initiatives is on the rise, with a significant focus on the cultivation of seaweed. This interest is underpinned by comprehensive studies on Blue Carbon, which refers to the carbon sequestration abilities of marine and coastal ecosystems around the globe.**

The global investment community is also focusing on carbon sequestration methods, whether in the deep ocean or through algae and seaweeds and considering the carbon benefits associated with increased biodiversity. The Kitasoo Xai'xais Nation is looking to enhance their monitoring of salmon farms and the broader ecosystem impacts. Part of this enhanced scrutiny will involve developing specific metrics to measure the species and their frequency around salmon farms and within the broader ecosystem.

METRICS AND INDICATORS

Developing metrics and indicators for the salmon farm sector have looked towards experts and advice for best practices in fish welfare and reducing environmental impacts using new research and technologies. Community feedback is used to reinforce metrics around fish health and inform the development of new indicators, particularly in holistic management and community well-being. Metrics related to carbon-reductions and biodiversity targets are currently under consideration. Table 1 identifies a suite of indicators that support the industry in ongoing improvements across a diverse set of social, environmental, and economic goals. These indications can be meaningfully tracked over time.

Table 1. Developing indicators and metrics to consider for Kitasoo Xai'xais local finfish aquaculture industry.

THEME	INDICATORS
Fish health	Reduced disease occurrence and reduced treatments* Reduced losses in disease events Reduced number of unknown mortalities
Community Well-being	Worker satisfaction Youth engagement* Year-round employment Diversified aquaculture and fisheries* Open and frequent communication; more information to community* Training in community* Food security studies* Greater understanding of wild salmon population drivers
Carbon reduction plan	Reduction in fossil fuel usage (operations, transport) Increased biodiversity Blue carbon offsets
Technology R&D	First in the world and/or first demonstration projects in Canada
Technology Implementation	Reduced interaction with wild salmon Number/types of new technologies employed Farm workers well-versed in new technologies employed
Aquaculture standards	Consideration of fish health, climate change, sustainable feed, food security, food traceability, ocean health, public reporting

**These particular indicators were identified in community surveys which can be found in Appendix IV*

EVALUATION CRITERIA

A crucial element in the development of robust metrics and indicators is the assurance of their effectiveness and the ability to track progress within the industry accurately. This involves establishing clear benchmarks and regular assessments to gauge improvements and impacts over time.

The KX Innovation Plan and Kitasoo Model will need to adapt and refine these criteria over time, ensuring the community is satisfied and the Science Panel remains confident in the indicators. As Kitasoo develops their own metrics, they can also advise and recommend for DFO's new management plan in broader policy guidance.

FOCUS	DETAILS
CONDITIONS OF LICENSE	• First Nations have first right of refusal to conduct third-party monitoring; First Nations "Stewardship Management Plans" must be followed • Fish health metrics become formalized into Conditions of Licence • Extended licence terms to align with the KX InnovationPlan
POST SMOLT PRODUCTION	• Larger smolts (post-smolt) production reduces sea lice treatments and occurrence, and general mortality (ex. from mouth rot)
FEEDING OPERATIONS	• Deep feeding with lights coordinated with out-migration timing reduces sea lice treatments and sea lice occurrence
BARRIER TECHNOLOGY	• Sea lice skirts reduce sea lice treatments and occurrence on farms and on wild salmon
FISH HEALTH	• Reduced number of 'unknown' mortalities through implementing mortality-ensilage systems

The KX Monitoring Team will support monitoring on the farms. Their responsibilities could include conducting routine inspections, managing or executing sea lice tallies, supervising treatment procedures, and monitoring the events of harvests. The community has expressed a priority in benthic monitoring which may include public sharing of Remotely Operated Vehicle (ROV) videos with community, collecting sediment samples and performing contaminant testing for distance effects as well as seasonal trends and recovery during fallowing periods. Benthic surveys may also include species monitoring of prawns, clams, and sea cucumbers in proximity to farms.

ADAPTIVE MANAGEMENT

The Kitasoo Model is focused on adaptive management. The KX Innovation Plan introduces opportunities for Kitasoo Xai'xais to put in place a new governance process and start a joint research effort. This is expected to bolster community trust in their investments in the aquaculture sector.

By testing innovations at fish farms and tracking the well-being and numbers of wild salmon and other marine species around these farms, along with monitoring key indicators, the community will gain insights. This information will assist the KX Area-Based Management Approach in making informed decisions about how the industry might adapt and grow.

CHALLENGES AND SOLUTIONS

Developing and implementing new technologies and innovations in the aquaculture sector faces several obstacles, including policy uncertainties from the Department of Fisheries and Oceans regarding the management of British Columbia's sector. A primary challenge is securing investment to support the research and development of these technologies. Companies need certainty and incentives to invest, which the Canadian government could provide through longer-term licenses and essential funding.

Another challenge is the public's perception of the industry. Establishing a Blue-Ribbon Science Panel with diverse sector representation could gradually address this issue. Moreover, political actions sometimes disrupt the scientific decision-making process, underscoring the need for decision-makers to remain accountable to scientific evidence. Misinformation also hinders the sector, creating barriers for Nations to achieve sustainability goals due to a lack of shared fundamental understanding. This plan aims to tackle these challenges head-on.

LIMITATIONS AND CONTINGENCIES

KX has done extensive land-use and marine planning across their territory. Government counterparts are encouraged to consider the extensive conservation planning accomplished to date. It is suggested to develop a measurable indicator that demonstrates alignment with existing community planning initiatives.

Concerns have been raised that the rights and title of the Kitasoo Xai'xais are not being fully respected by federal authorities as they await the approval of a tenure previously acknowledged in marine plans. This situation places a burden on the community and Hereditary Leaders to address a colonial legacy that may not prove satisfactory to all involved parties.

The current regulatory environment poses challenges for Kitasoo Xai'xais, particularly when planning for technological investments during a period marked by uncertainty. Mowi has recognized that the potential for technological advancement is vast, contingent upon operational certainty and the constraints of license and tenure limitations within the province. Contrary to seeking short-term agreements, Mowi advocates for extended licenses and tenures, aligning their aspirations with practices observed in Norway, where 30-year licenses are customary, in stark contrast to their desire for a 9-year license in this context. However, Kitasoo Xai'xais plans to impose its own terms, supplementing the federal and provincial timelines that traditionally dictate tenure durations, which can vary significantly from 10 to 99 years. This approach by Mowi is strategic, aiming to amortize substantial investments, potentially upwards of $10 million, over a more extended period, thereby enhancing financial returns. Short-term licenses, such as a hypothetical 2-year period, would render such significant investments

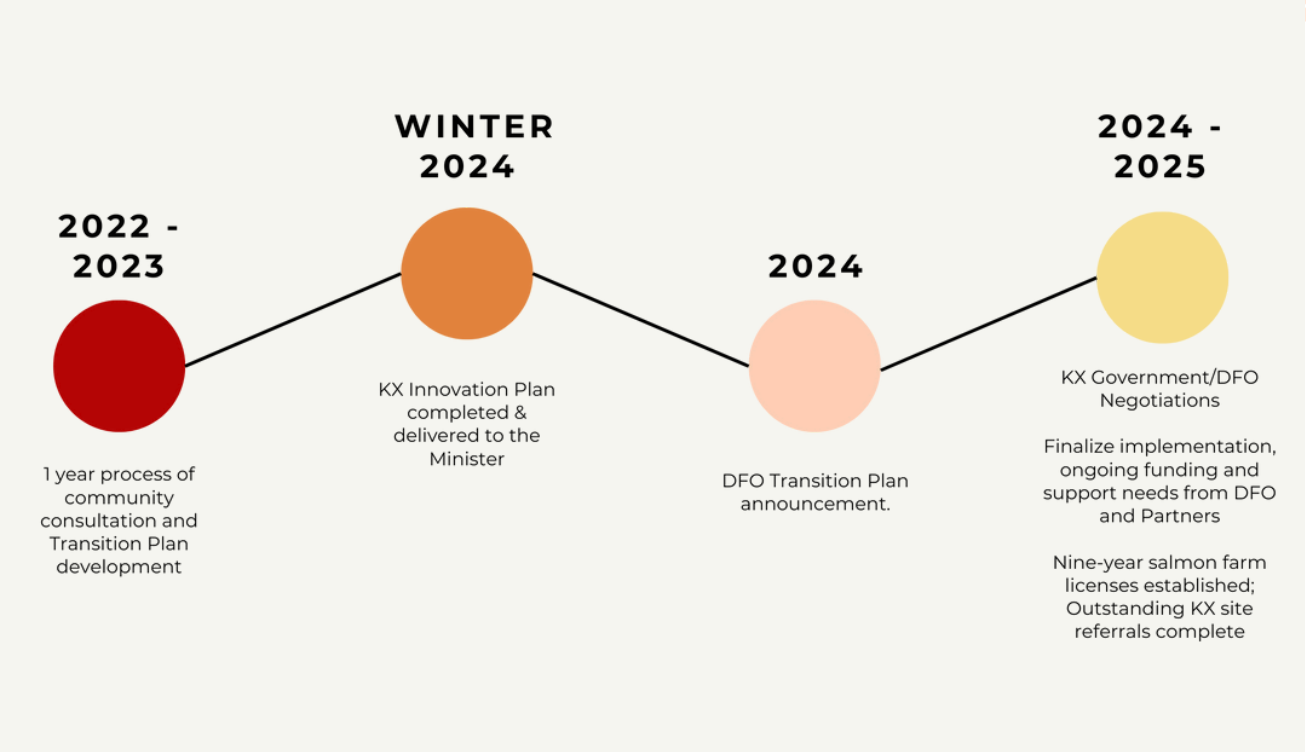
impractical, underlining the importance of longer licenses and tenures for achieving sustainable economic benefits.

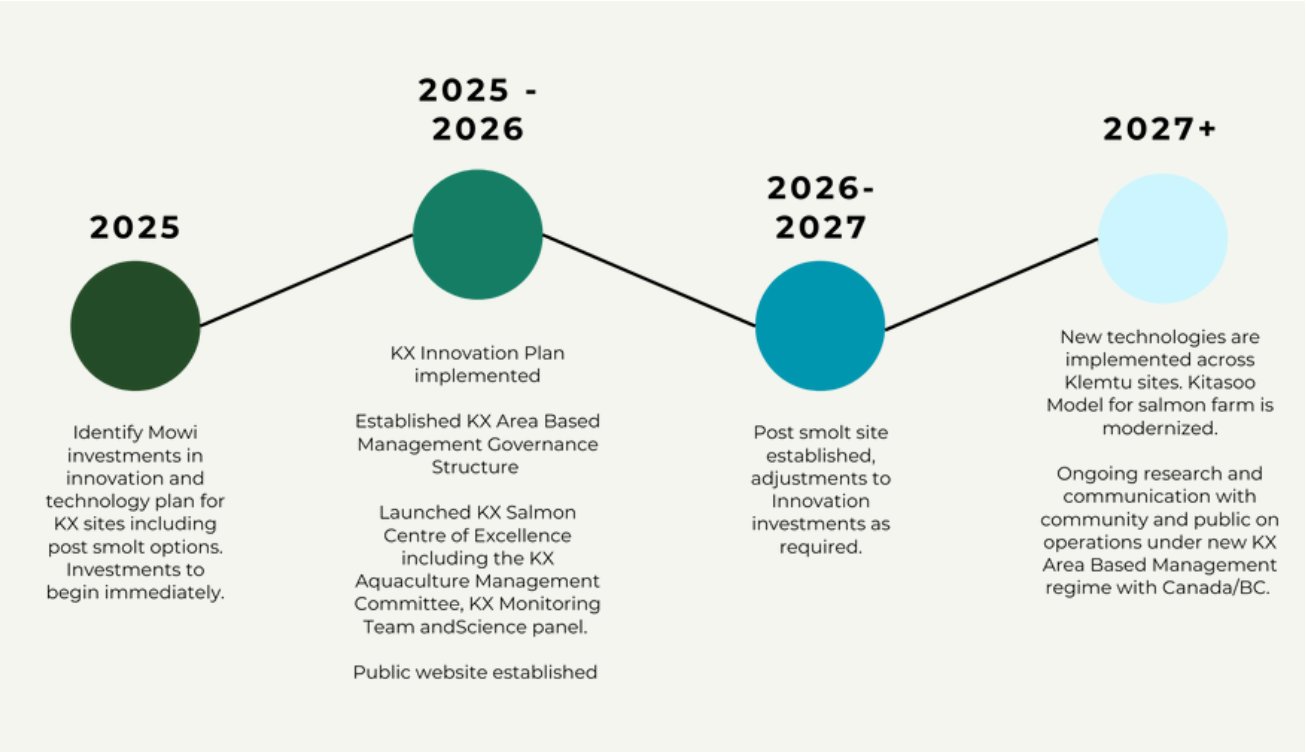
It is anticipated that the timelines for technological implementation will commence in 2025. There is a need for significantly more consultation in this process, with an emphasis on ensuring that the partner, Mowi Canada West, will be able to continue operations under the existing protocol agreements.

IMPLEMENTATION AND NEXT STEPS

Following more than a year of planning and development, the Kitasoo Xai'xais salmon farm implementation plan was presented to the DFO minister in early 2024. Subsequent negotiations aimed to formalize the plan, with a focus on collaborating with the DFO and other partners to secure the additional funding necessary for the plan's implementation, are slated to begin in April 2025.

Mowi has provided a trajectory of potential new technologies and timelines for implementation. As part of the planning process with the Kitasoo Xai'xais, considerations for increased production plans and license extensions are essential, especially considering the DFO's transition plan. New investments are being evaluated, making the adoption of new technologies more feasible. With a five-year timeframe identified for trialing and implementing new technology on a fast-tracked cycle, the most optimistic timeline for post-smolt grow-out in Klemtu is between 2027 and 2029, as detailed in Table 2.





Kitasoo Xai'xais is set to initiate research plans and engage the Department of Fisheries and Oceans with recommendations for joint decision-making and new policy guidance. They advocate for the DFO to adopt area-based and adaptive management, acknowledging Kitasoo Xai'xais' advancements in Indigenous environmental governance. A key aspect of adopting the Innovation Plan is establishing a governance framework for effective salmon farm oversight as part of the Kitasoo Model (Figure 1). Collaboration with Mowi is anticipated to commence in 2023, focusing on hatchery support to enhance wild salmon returns.

> **The Kitasoo Xai'xais Team urgently requires support for stewardship monitoring and to develop management capacity for the farms.**

In conclusion, the Kitasoo Xai'xais Innovation Plan for Finfish Aquaculture is a major step in marrying traditional knowledge with modern aquaculture practices, reflecting their commitment to sustainable development, environmental stewardship, and economic growth. This plan, characterized by collaborative research, innovation, and community involvement, is a paradigm for responsible aquaculture, aimed at nurturing a resilient and prosperous future for the Kitasoo Xai'xais Nation and safeguarding their cultural and natural heritage for future generations. The Kitasoo Xai'xais Nation representatives look forward to thoughtful and respectful dialogue with DFO over the coming months in order to bring this plan to life.

Appendix I. 10 Principles Reconciliation

Department of Justice, Canada

1. All relations with Indigenous peoples need to be based on the recognition and implementation of their right to self-determination, including the inherent right of self-government.
2. Reconciliation is a fundamental purpose of section 35 of the Constitution Act, 1982.
3. The honour of the Crown guides the conduct of the Crown in all its dealings with Indigenous peoples.
4. Indigenous self-government is part of Canada's evolving system of cooperative federalism and distinct orders of government.
5. Treaties, agreements, and other constructive arrangements between Indigenous peoples and the Crown have been and are intended to be acts of reconciliation based on mutual recognition and respect.
6. Meaningful engagement with Indigenous peoples aims to secure their free, prior, and informed consent when Canada proposes to take actions which impact them and their rights on their lands, territories, and resources.
7. Respecting and implementing rights is essential and that any infringement of section 35 rights must by law meet a high threshold of justification which includes Indigenous perspectives and satisfies the Crown's fiduciary obligations.
8. Reconciliation and self-government require a renewed fiscal relationship, developed in collaboration with Indigenous nations, that promotes a mutually supportive climate for economic partnership and resource development.
9. Reconciliation is an ongoing process that occurs in the context of evolving Indigenous-Crown relationships.
10. A distinctions-based approach is needed to ensure that the unique rights, interests and circumstances of the First Nations, the Métis Nation and Inuit are acknowledged, affirmed, and implemented.

Appendix II. KX Salmon Centre of Excellence Research Plan

The following is a preliminary list of potential research under the new KX Salmon Centre of Excellence proposed under the Kitasoo Xai'xais Innovation plan. This research will collectively provide greater insight to the issues and problems effecting salmon survival, as well as the effects, if any, of salmon farming on the survival of wild salmon.
There are processes currently underway by the Kitasoo Xai'xais to refine this work and a final plan will be based on combining existing program funding and new funding sourced as a result of the implementation of this Innovation plan.

Research categories are as follows:

Environmental Monitoring

Fresh Water

1. Water quality monitoring for key streams (temp, O2, pH)
2. Hydrological and habitat monitoring in key stream watersheds and changes to stream morphology over time.

Ocean

1. Marine hydro-dynamic model of channels and inlets of KX territory
2. Nearshore marine plankton monitoring and analysis April- August
3. Permanent marine water quality monitoring stations (temp, salinity, O2, pH)

Wild Salmon Monitoring

1. Key Stream – ongoing life history monitoring for selected (pink and chum) and (sockeye and coho) . spawning success, incubation survival, growth, outmigration timing and size, spawning numbers/success rates.
2. Ocean tracking (seining) for growth, sea lice, disease monitoring of salmon smolts from Inlets to open ocean April – August
3. Salmon spawning enumeration – Rotation schedule to walk all salmon streams in southern area 6 and northern area 7 every 3 years. Key streams enumerated annually.
4. Collection of baseline DNA for all significant salmon stocks in KX Territory

Appendix II. KX Salmon Centre of Excellence Research Plan (Continued)

On Farm Monitoring

1. Auditing of regulatory requirements for conditions of license, sea lice checks, net changes, sea lice and other therapeutic treatments, fish welfare, benthic condition, disease outbreaks and response, mortality causes, escapes etc.

Farmed Salmon Monitoring and Interactions with Wild Salmon

1. Sampling and testing wild fish in proximity to the Farms according to standards established.This is anticipated to include but not limited to:
    a. Pathogen, disease, sea lice and DNA testing of wild migrating salmon (juvenile out-migration or adult in-migration)
    b. Uses and considerations for eDNA testing/monitoring on fish, water, benthos, etc in proximity to salmon farms.

Salmon Enhancement

1. Develop a prioritized recovery plan for red listed (low abundance) salmon stocks throughout the territory. Including the use of both Kitasoo/Xaixais salmon hatcheries and other in-situ techniques within the capability of the KX.
2. Review the capabilities of both KX hatcheries and recommend biological strategies with the greatest and most cost effective opportunities for success, including cost effective brood year return assessment techniques.
3. Develop a prioritized list of salmon habitat enhancement projects in The KX territory.

Appendix III. Technologies by Farm Site

	Alexander Inlet	Cougar Bay	Goat Cove	Kid Bay	Sheep Pass East	Sheep Pass West
Fish Health	YES	YES	YES	YES	YES	YES
Wild Salmon Monitoring	YES	YES	YES	YES	YES	YES
Benthic Initiatives	YES	YES	YES	YES	YES	YES
Deep Feeding / Deep Lights	YES	NO	NO	TBD	YES	
Remote Operation Centres	YES	YES	YES	YES	YES	YES
AI/machine learning	YES	YES	YES	YES	YES	YES
Stingray system	YES	YES	YES	YES	YES	
Submersible nets – depend on envt surveys/ conditions	TBD	TBD	TBD	TBD	TBD	
Mowi Smart Farming – combined of multiple techs	YES	YES	YES	YES	YES	
Barrier Curtain (<60cm/s)	NO	NO	NO	YES	YES	
Bag System (FTSCCS)	YES	NO	YES	NO	YES	
Most Automated Farm Concept - Mort Collection & Ensilage (dep on exposure locn)	TBD	TBD	TBD	TBD	TBD	
Feed Production	YES	YES	YES	YES	YES	YES
Area Based Management	YES	YES	YES	YES	YES	YES
Freshwater/smolt Production	YES	YES	YES	YES	YES	YES
Antifoulant Material & Net Design	YES	YES	YES	YES	YES	YES
Genetics for Robust Fish	YES	YES	YES	YES	YES	YES

Appendix IV. Community Surveys

Description

To gather insights on the Kitasoo Xai'xais community's views on aquaculture, we combined in-person sessions, social media engagement, and surveys. These varied methods enabled the Kitasoo Development Corporation, the Elected Council, and the Stewardship Team to gauge community sentiments effectively.

Methods

We deployed online Google Forms surveys, a live-audience survey, and paper versions. The initial survey assessed the community's understanding of fisheries and aquaculture, their perceptions of the local industry, and awareness of the Kitasoo Model and partnership with Mowi Canada West. A subsequent survey revisited opinions on salmon farming and probed interests in the sector's future, particularly regarding technological advancements.

Online surveys were promoted via social media and community meetings. To ensure responses were from community members, we incorporated a skill-testing question. Although responses were anonymous, participants could opt to provide names for a prize draw. Hard copies were also distributed, with all questions and summarized data presented in the following sections. Full anonymized datasets are stored separately.

Table 1. Survey 1 questions delivered online.

#	QUESTION
1	Aquaculture and commercial fisheries produce seafood for people, but they also contribute products to other sectors, like agriculture for soil fertilizer and as a feed ingredient for other animals. Can you name some of the different types of seafood that are farmed in British Columbia?
2	Have you heard about the decline in wild fisheries? If yes, what reasons do you think are causing the decline?
3	Aquaculture is practiced all around the world. How much do you think aquaculture contributes to global seafood production of both farmed and wild?
4	Have you heard of the "Kitasoo Model" for salmon farming? If so, can you describe it?
5	Do you believe aquaculture has an important role in British Columbia's seafood production?
6	What other terms are often used in BC to describe salmon farming? Check all that apply.
7	Atlantic salmon is the most common of the farmed finfish species in BC. What other species of finfish are also farmed in British Columbia? Check all that apply.
8	What is your opinion of salmon farming in KX Territory? Choose a value of 5 if uncertain.
9	Like all industries, the finfish aquaculture industry is government regulated to minimize negative impacts on the environment. What do you know of issues and concerns in the salmon farming industry? Please list below.
10	Do you believe the salmon farming sector could be made more environmentally sustainable?
11	When Kitasoo Xai'xais makes agreements with local resource companies, what aspects of these agreements would be MOST important to you? Rate the importance of each from 1-10. 1 = not important at all, 5 = neutral, 10 = extremely important to you.

	KX Community oversight of operations (KX Stewardship monitoring, regular reporting) Contributions to habitat restoration. Companies that recognize KX right and title authority. Companies that recognize KX right and title authority. Hereditary approval of operations. Seasonal jobs Part-time jobsCasual labour Full-time Year-round jobs Community capacity building: Skills/training Community capacity building: Career building opportunities Support for KX Community Activities Youth engagement and supporting curriculum integration A trust relationship is built between KX and company partner. Revenue sharing. Equity/investment opportunities Agreements support KX own independent businesses Presence at major community events Company staff should live in community when possible Regular communication updates on industry activity
12	Salmon farm companies used a variety of technologies across their operations. Can you name some of these farm technologies that have been used or have been advanced in the last three decades? (For example, the design of net-pens has changed and it's now more common to see 'circular' pens rather than the old 'square pens'.)
13	What more would you like to know about the finfish aquaculture industry and its operations in KX Territory?
14	What do you see as the future for aquaculture and wild fisheries in KX Territory?
15	Do you have any comments, questions, or concerns about salmon farming or the aquaculture industry that you would like to share?

Table 2. Survey 1 - shortened survey for hard-copy.

#	QUESTION
1	Aquaculture and commercial fisheries produce seafood for people. They also contribute products to other sectors, like agriculture for soil fertilizer, and as a feed ingredient for other animals. Can you name different farmed species in British Columbia?
2	The Kitasoo Model was established in the original agreement with Nutreco (now called Mowi Canada). What are aspects of the Kitasoo Model?
3	What kinds of salmon farming technology and innovation have you heard about?
4	What does sustainable aquaculture mean to you?

Table 3. Survey questions – live audience.

#	QUESTION
1	Aquaculture is practiced all around the world. How much do you think aquaculture contributes to global seafood production of both farmed and wild?
2	Aquaculture and commercial fisheries produce seafood for people, but they also contribute products to other sectors, like agriculture for soil fertilizer and as a feed ingredient for other animals. Can you name some of the different types of seafood that are farmed in British Columbia?
3	When did Kitasoo-Xai'xais first establish a relationship with Mowi?
4	What are aspects of the Kitasoo Model?
5	What was the name of Mowi back when the KX relationship first started?
6	What fish products are currently produced at KX seafood processing plant?

7	What other terms are often used in BC to describe salmon farming? Check all that apply.
8	What does sustainable aquaculture mean to you?

Table 4. Survey 2 questions delivered online.

#	QUESTION
1	If you attended the Science Panelists' presentations in January, what did you think about the event?
2	In your opinion, what challenges might we face in adopting new technologies and innovations?
3	Have you heard of the Kitasoo Model approach to salmon farming?
4	The Kitasoo Model is an area-based and collaborative management approach developed by the Nation in the 1990s. The Model recognizes the rights and decision making of the KX, giving us veto power and our ability to monitor the industry according to our own protocols. We have been monitoring wild salmon and doing sea lice sampling both near and far from farms, and results have been published in scientific journals. We are now reviewing the KX Model and looking to find ways to enhance our approach and improve sustainability of the industry. What more would you like to see, or what could be improved upon in the KX Model?
5	We aim to balance our community investment in salmon farming along with other industries. Are there other types of aquaculture that you are interested in?
6	What is your current opinion of salmon farming in KX Territory? Choose a value of 5 if uncertain.
7	Salmon farm companies used a variety of technologies across their operations. Can you NAME OR DESCRIBE ANY FARM TECHNOLOGIES that have been used or have been advanced in the last three decades? (For example, the design of net-pens has changed and it's now more common to see 'circular' pens rather than the old 'square pens'.)
8	In our draft KX Transition Plan, how could we improve sustainability of finfish aquaculture using innovation and technology?
9	Do you have any concerns around pursuing new technologies and innovation?
10	What solid "proof" would you like to see that in the salmon farm industry to show they are making progress in sustainability? We may reference tools like metrics or indicators.
11	Do you believe the salmon farming sector could be made more environmentally sustainable? Why or why not?
12	DFO is creating a province-wide strategy to improve the sustainability of salmon farming. There are four objectives in their planning for the future of salmon farming. They are: 1) Transitioning away from open-net pens - focusing on reducing or eliminating interactions with wild salmon, 2) Trust and transparency, 3) Indigenous Reconciliation and Relationships, and 4) Innovation and Technology for Sustainable Aquaculture Growth. Kitasoo Xai'xais Nation has always pushed the industry to be better. Do you think KX is taking the right stance in asserting our right to participate in shared decision making with DFO, OR to continue to choose for ourselves how to manage the industry in our traditional territory?
13	On a scale of 1 to 10, how much interest do you have in seeing Kitasoo Xai'xais become a leader in facilitating technology and innovation in salmon farming?

14	Are there any additional actions or particular messages you would like to see happen and/or recorded in our KX Model and Transition Plan?
15	If you attended the Science Panelists' presentations in January, what did you think about the event?

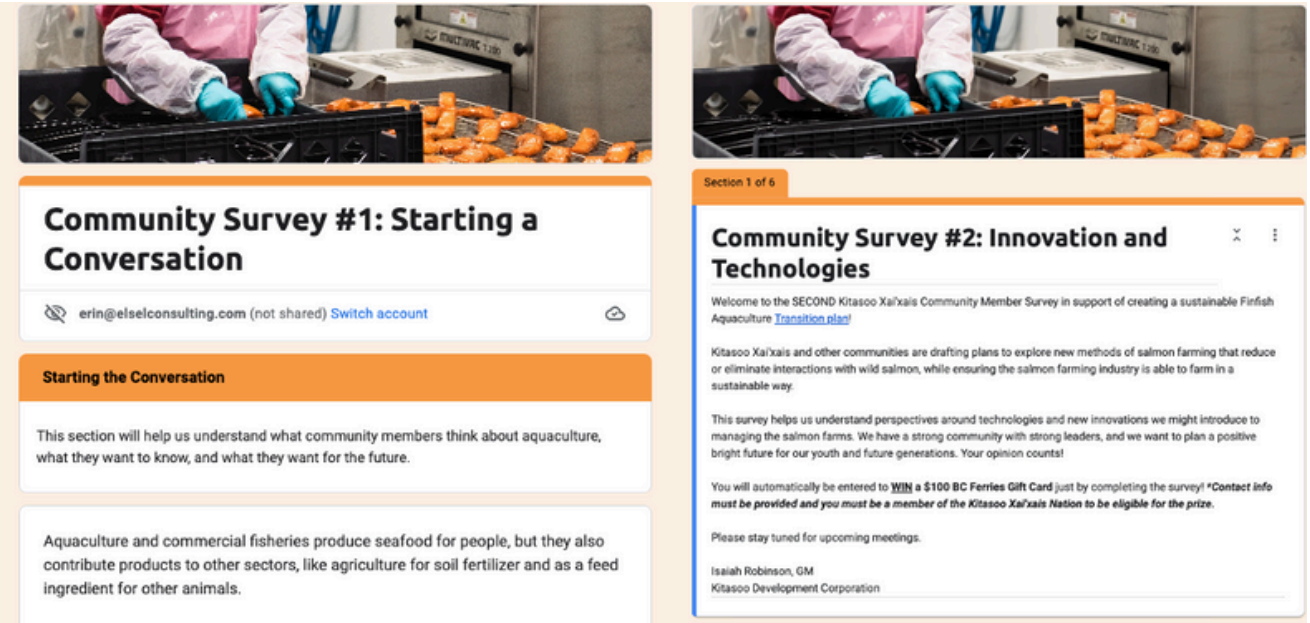


Figure 1. Google Forms online application was used to develop and deliver the community surveys. These two images are screenshots from the initial webpage for Survey 1 and Survey 2.

Results

Throughout the year from November 2022 to November 2023, we conducted engagement sessions for the Transition Plan. The first online survey yielded 22 responses, while the second had 15. Additionally, the hardcopy survey received 5 responses, and the live-audience survey had 6 participants. To provide context, the Kitasoo Xai'xais community consists of approximately 750 members.

Table 5. Number of responses recorded from membership engagement.

	Survey 1 Online	Survey 1 Hardcopy	Survey 1 Live Audience Survey	Survey 2 Online
Surveys completed	22	5	6	15

Survey 1 Online

In the first online survey, members identified various types of farmed seafood in British Columbia. The responses included all major commercial species, along with others like sea urchins and sea cucumbers, which are not commonly farmed commercially. The survey highlighted a discussion point regarding the commercial decline in fisheries, acknowledging

the complex factors contributing to the decline, such as climate change and overfishing, despite a high number of salmon in the Pacific Ocean historically.

The majority of respondents (79%) had a positive view of aquaculture's contribution to the BC economy, rating their opinion of salmon farming at 6 or higher on a 10-point scale. A small portion expressed uncertainty (16%), and fewer held slightly negative views. Opinions were divided on the industry's environmental sustainability, with some believing improvements are needed, while others viewed it as already sustainable.

When asked about the Kitasoo Model, many were not familiar with it; however, they provided insightful guesses regarding its purpose, such as setting employment standards for community members and upholding the Nation's leadership and authority. (Table 7)

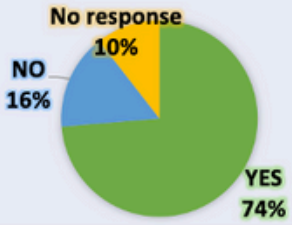
Question	Response
Can you name different types of farmed seafood in BC?	FARMED: oysters, clams, scallops, mussels, *ancient clam beds* Finfish: Trout, Atlantic salmon, Chinook salmon, Coho salmon, steelhead, black cod Seaweeds/aquatic plants, kelp NOT FARMED: Lobster, crab, sea cucumbers, sea urchins, prawns, halibut, herring, cod
Is there commercial fisheries decline? Yes, No If yes, what are the reasons?	 Reasons: gradual decline over time, global warming/climate, pollution, logging, overfishing, development, fish farms, not allowing recovery/local depletion
What is aquaculture contribution to global seafood	Five of 22 participants correctly identified 52% Many other participants thought aquaculture made up 81%

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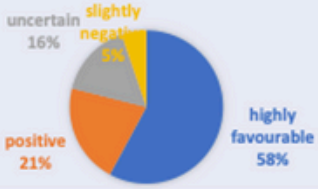
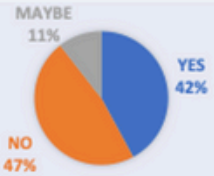
Table 7. Results of questions 4-9.

Question	Response
Aquaculture important to BC economy	18/22 people said yes
What other terms are often used in BC to describe salmon farming? *Finfish aquaculture, open-net pen aquaculture, smolt farming, container aquaculture, basket aquaculture.*	4/22 got the two; another 8 chose smolt farming
Other farmed finfish in BC	Chinook, sturgeon, tilapia, sablefish, Coho, steelhead. Some participants chose wolf eels, but these are still in trial.
What is your opinion of salmon farming in KX Territory? Choose a value of 5 if uncertain.	
What are known issues & concerns of the industry?	Five participants had no response. Two participants had no concerns. Other Known issues: Communicable diseases, viruses, sea lice, farmed salmon escapes, negative impact on wild fish, lack of site recovery, feed sources, affecting local stock recovery, Negative public perception, false information, farm opposition
Could salmon farming be more environmentally sustainable?	
Have you heard of the "Kitasoo Model" for salmon farming? If so, can you describe it?	12 participants said no. Many participants had good guesses: job requirements, KX rights and title authority, good science, strong partner relationships.

When participants were asked what factors were most important for Kitasoo Xai'xais in developing industry agreements, they emphasized the importance of full-time jobs, skills training, career development, a trust relationship, youth engagement, and for KX rights and title authority to be followed (Table 8).

Table 8. Ranking results from Question: What factors are most important for Kitasoo Xai'xais community when developing industry agreements?

Highest Importance (9-10)	Moderately high importance (7-9)	Important (5-7)
FT Jobs	Contributions to habitat restoration	Seasonal jobs
Skill training	Regular community updates & reporting	Industry support for community activities
Career development	Community oversight of operations	Industry present at community events
KX rights authority	Contributes to KX own business development	Casual labour
Trust relationship	Equity investment	PT jobs
Youth engage	Revenue sharing	Hereditary approval
		Industry staff live in community

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Survey Insights on Technology and Future Vision

Respondents identified several areas where technology has enhanced salmon farming operations and sustainability, with remote feeding technologies being the most frequently mentioned advancement. In terms of informational needs, there was a clear desire for more direct communication from the farms, presented in a passive, non-confrontational manner. Specific interests included the recovery processes of fallow sites, contributions to marine restoration, and insights into emergent land-based technologies.

Participants also expressed curiosity about exploring diverse aquaculture opportunities within the territory. When asked about the future vision for fisheries and aquaculture, responses varied. Some advocated for the coexistence of sustainable fisheries and aquaculture, while others saw potential in expanding shellfish aquaculture. The idea of rebuilding and actively participating in wild fisheries restoration was crucial for one respondent, along with a call for integrating land-based aquaculture to enhance access to a variety of seafood, particularly wild varieties.

Table 9. Questions on the technology and future of salmon farms.

Question	Response
Could you name technologies currently used at salmon farms?	New feeding system technologies was most commonly mentioned. Others: ROV net cleaning, round cages/net pens, bird nets, mortality management, computer tech & barge-based feeding stations/underwater cameras, communication systems, more science, freshH20 sea lice treatment, faster growth
What more would you like to know?	• More communication that's informative and not confrontational. • How operations help old/fallow sites to recover and recuperate. • If jobs are safe in the industry, what other aquaculture opportunities are there? • Land based technologies and more technical information. • How the industry is contributing back to marine restoration.
What is future of aquaculture and fisheries in KX Territory?	• Continuing aquaculture and have co-existence between fisheries and aquaculture. • Continued growth of fish and aquaculture. • Restoring wild fish and rebuilding wild fish populations, getting more kids into it, more FT jobs. • Shellfish aquaculture. • Consideration to move to land-based if possible. More sustainable wild food and other types of aquaculture and hatchery development instead.

When participants were asked if they had any further comments, questions, or concerns about salmon farming and the general aquaculture industry, some of the following comments:

Respondent 1: "My main concerns stem from the different stories that have come up in and around the environments I grew up in while residing in Klemtu to present times. The stories were from many previous employees of the earlier days of MHC, now MOWI. Those type of mishaps that may have turned into larger environmental impact issues and went unseen. These are most of my concerns; how does a huge industry like MHC (MOWI) allow for the different types of issues to occur like chemicals going into the water and many other types of marine pollutants entering the ocean water at alarming rates since the beginning of the production of this industry known as Atlantic salmon fish farming, but in the pacific ocean."

Respondent 2: "Needs public news of impact on environment."

Respondent 3: "I appreciate the active involvement with Mowi Canada and our community the employment and the community support that has been offered. It has been very appreciated. Generations of families have grown with Mowi been a part of their lives. This company has created employment for our people for many years, job security is important for our families & nation."

Respondent 4: "I'm glad Aquaculture is part of our economic development plans."

Respondent 5: "I think more education on salmon farming would be great, I know there has been farm tours offered already. There are a lot of people that don't know how far this industry has come and the advancements since the 90s. Certain councillors are always talking about our low unemployment rate, but doesn't care to speak on or attend meetings regarding salmon farming, despite this being a large sector that employs people all year around, not just during the spring and summer. The company has always answered any calls for support financially, it's our turn to return that support in this crucial time."

Live Audience Participation Survey 1

During a community meeting, a live survey aimed to involve the community in a quiz. Refer to the spreadsheet results for a detailed list of responses. Participants were questioned about the inception year of the Kitasoo Mowi relationship, with three individuals correctly answering "1997". Similarly, they were asked about the previous name of Mowi at the beginning of the relationship, and two members correctly responded with "Nutreco". Additionally, there was a question regarding a specific aspect of the Kitasoo Model.

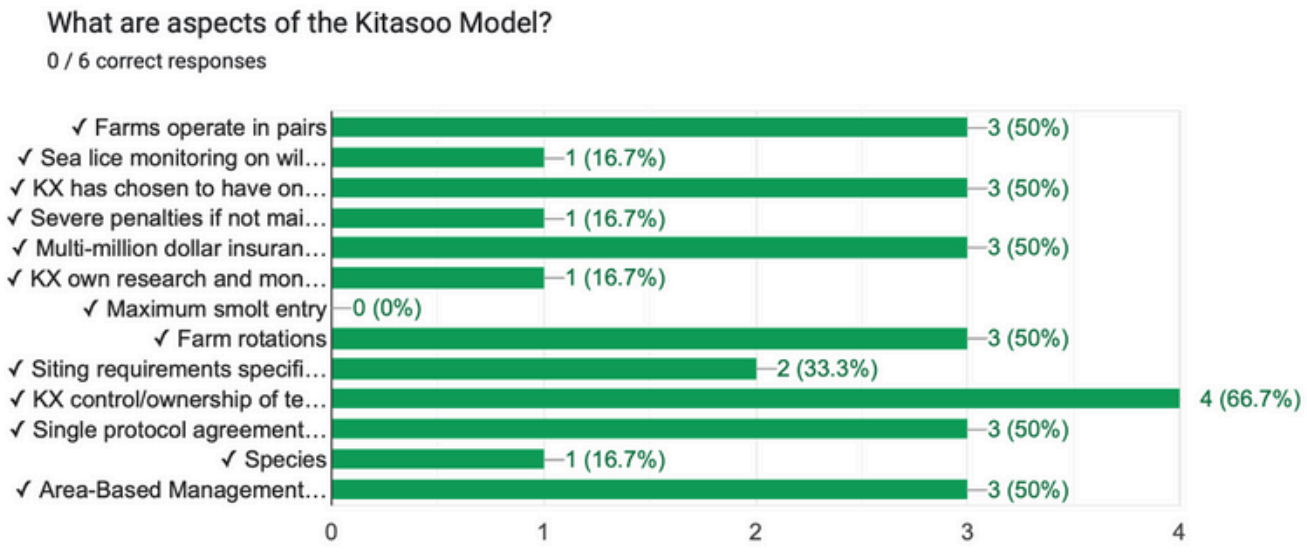

Figure 2. We asked what part of the Kitasoo Model approach towards the KX and Mowi Canada West agreement was. We had six respondents engage in this quiz survey. Four of them were aware that the Kitasoo Model approach was (is) an assertion of KX rights and title authority. There are many details of the Kitasoo Model that members appear not aware of.

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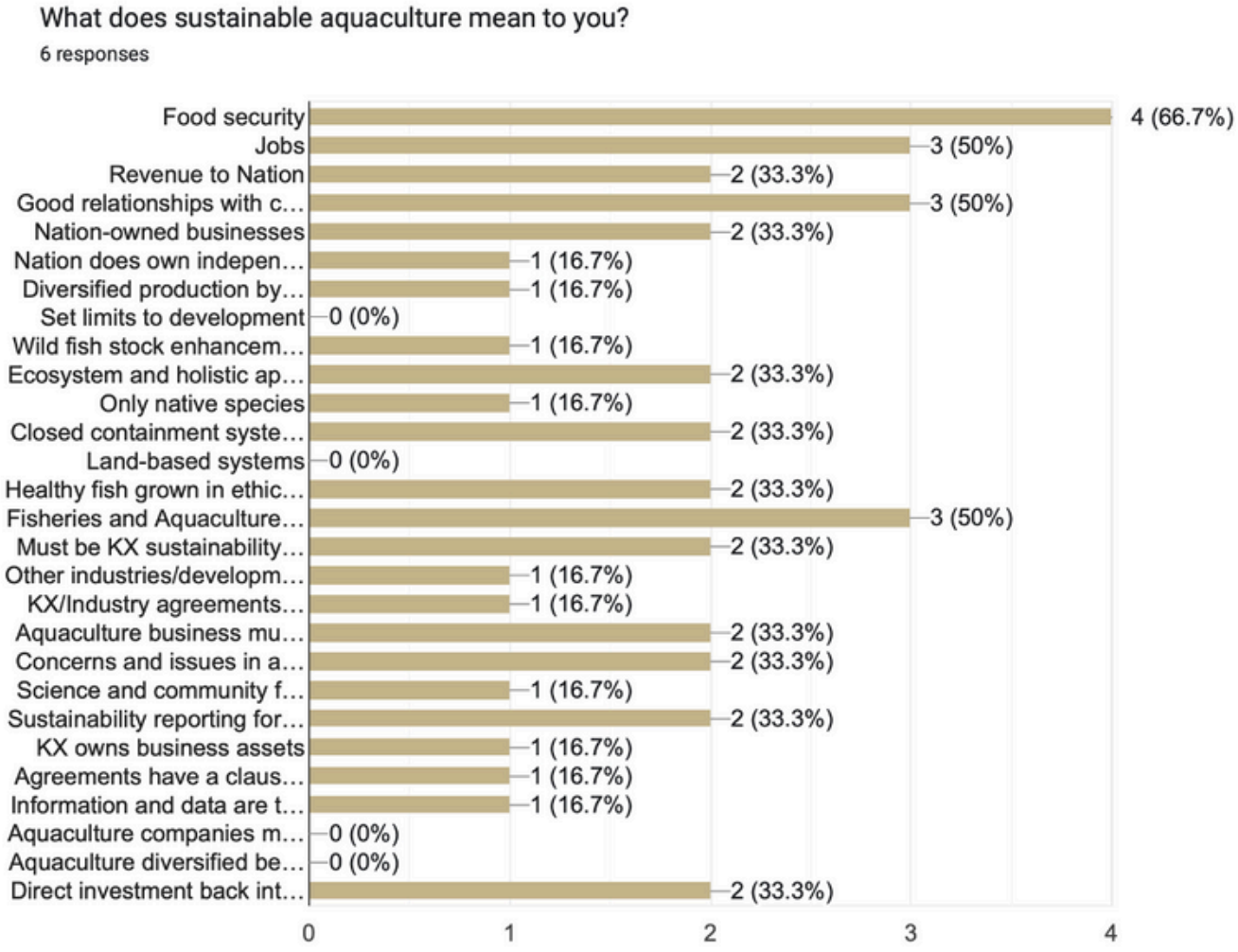
The last question in the live-audience survey asked, what does sustainable aquaculture mean? Respondents answered with jobs, good relationships with the company, and fisheries and aquaculture must be planned together. Some of the options had no interest or engagement from members, including land-based systems, setting limits to development, aquaculture companies must be third-party certified, and aquaculture products must be diversified beyond seafood.



Survey 1 Hard Copy Version

The hard-copy survey was shorter but had more space for members to write freely (see spreadsheet attachment) Of the six respondents, one participant indicated they couldn't answer the questions and filled answers with '?' (Figure 3).

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FINFISH AQUACULTURE TRANSITION PLAN:
COMMUNITY SURVEY HAND-OUT

Aquaculture and commercial fisheries produce seafood for people. They also contribute products to other sectors, like agriculture for soil fertilizer, and as a feed ingredient for other animals. Can you name different farmed species in British Columbia?	Black Cod
The Kitasoo Model was established in the original agreement with Nutreco (now called Mowi Canada). What are aspects of the Kitasoo Model?	1999
What kinds of salmon farming technology and innovation have you heard about?	none ?
What does sustainable aquaculture mean to you?	?

Figure 3. One of six survey responses received from the hard-copy version provided at the January community engagement session.

Most respondents identified they knew about the Kitasoo Model and its parts of the agreement and relationship with Mowi Canada West. Three respondents were able to describe different kinds of technology and innovation. When asked about sustainable aquaculture, members wrote:

Thank you for your interest in the Innovation Plan proposed by the Kitasoo Xai'xais Nation. For further dialogue, please contact Deputy Chief Councillor Isaiah Robinson at deputy@kitasooband.com

PO Box 87 36A Raven Road Klemtu, British Columbia V0T1L0
Tel: 1 (250) 839-1255 Fax: 1 (250) 839-1256
Klemtu.com

Respondent 1: "Like being safe and going by protocol and procedures! Sharing info and community involvement. No confidential information being held back! Our Territory. We need more help - $/Food wise. Help from the company to our community."

Respondent 2: "No harmful effects towards our marine environment."

Respondent 3: "Investment, creating environmental [sustainability], food security, contributing to monitoring, more salmon hatchery in Klemtu area: Chums, coho, sockeye."

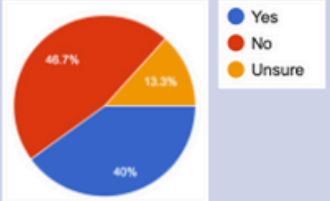
Respondent 4: "It means a lot to us. I enjoy working in aquaculture business at the smokehouse year-round."

Survey 2 Online

In the second online survey, the majority of respondents indicated they had attended the January science presentations and panel discussion. When discussing the adoption of new technologies in Klemtu's aquaculture, cost was the predominant concern among respondents. The sentiment was encapsulated by one member's doubt about the feasibility of transitioning to land-based operations due to high costs. Other concerns included finding technologies appropriate for local conditions and effectively communicating outcomes, particularly in response to negative social media attention.

Despite formal introductions to the Kitasoo Model during January's sessions, less than half of the respondents recalled knowledge about it. Members suggested enhancing the Kitasoo Model with improved communication on farm activities and increased training opportunities, indicating a desire for more involvement and transparency in the sector's development.

Table 10. First questions on Survey 2 provided at second community engagement session in March 2023.

Question	Response
If you attended the Science Panelists' presentations in January, what did you think about the event?	11 of 15 attended and one person watched online. One person didn't attend because they didn't believe in it.
In your opinion, what challenges might we face in adopting new technologies and innovations?	Costs and investment, weather/environment, risk, social license, local jobs, infrastructure, good science to help choose the right technology. Quotes: "Costly, will it be worth moving to land based in Klemtu? I don't think so, the cost to do so will be too high to be worth it." "Implementing the new technology should be tested in operations ASAP. show the results as there has been much negative press on Social Media."
Have you heard of the Kitasoo Model approach to salmon farming?	
What more would you like to see, or what could be improved upon in the KX Model?	Reporting/communication Emphasis on value of leadership and KX Rights/Authority More training (generally positive comments from participants that endorse the approach)

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We again asked what kinds of aquaculture members were interested in. Notably increases in hatchery development was the most popular, in addition to farming Coho salmon and other finfish, plus seaweed and kelps, abalone, sea cucumber, geoduck, and scallops. Land-based trout had no interest from members (Figure 4).

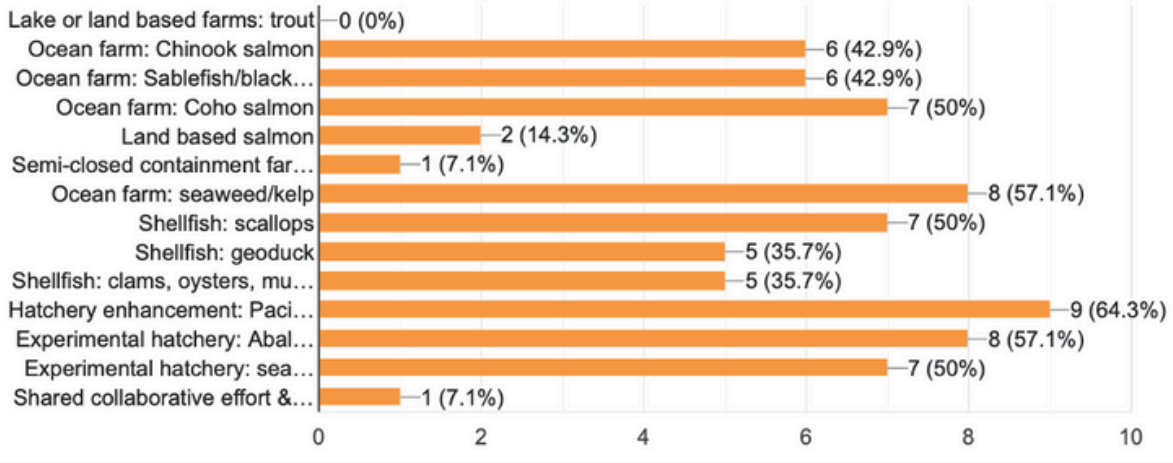

Figure 4. Member awareness of existing aquaculture by method and species. The question was asked: We aim to balance our community investment in salmon farming along with other industries.Are there other types of aquaculture that you are interested in?

Members were asked again what their opinion on salmon farming was. There was an overall positive response from 13 out of 15 respondents, and with 1 out of 15 having a slightly negative perception (Figure 6). This trend is not unlike the results we found in the January survey.

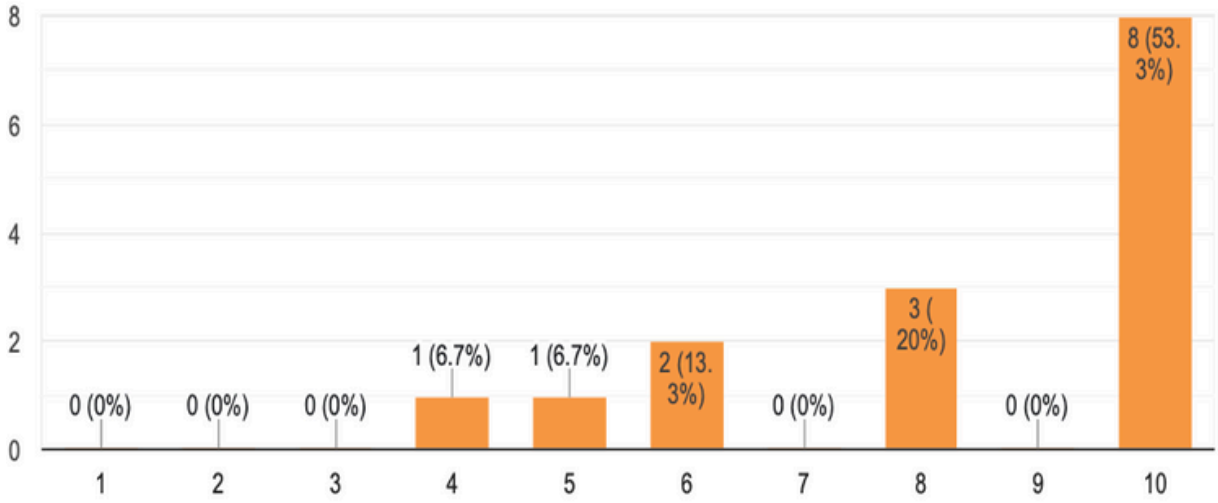

Figure 5. Question asked: What is your current opinion of salmon farming in KX Territory? 10 is high, 1 is low. Choose 5 if uncertain.

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We asked members how we could improve the sustainability of salmon farming. Members identified that investing in the local salmon hatchery as well as conducting more research to better understand farmed and wild salmon interactions would improve the sustainability of the industry. Increased reporting of farm operations and monitoring and hosting an annual conference on science of the industry was also endorsed. Establishing a KX stewardship oversight team, and engaging youth in the planning and operations of the industry, were also advised by majority of respondents.

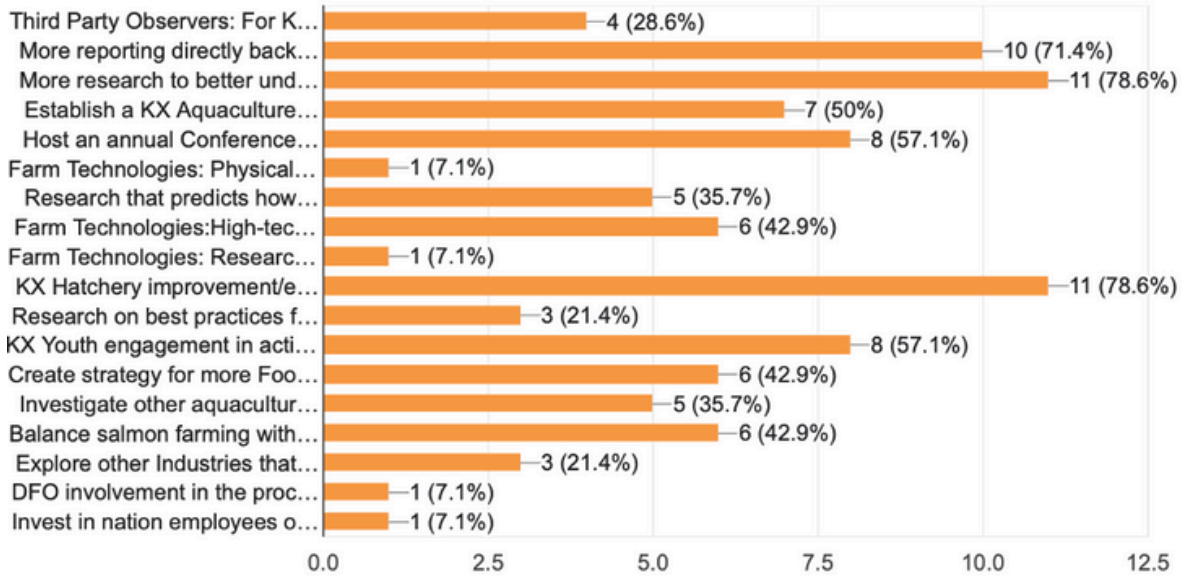

Figure 6. Question asked: In our draft KX Transition Plan, how could we improve sustainability of finfish aquaculture using innovation and technology?

We also asked community members what kinds of metric and indicators they'd like to see to demonstrate sustainability (Figure 8). Respondents answered that increased hatcher productivity and wild salmon returns would be a good indicator of salmon farm sustainability. They also identified the importance of visuals in the benthic environment showing recovery could be an indicator. The community is also looking for a metric around improved communication from the farms regarding their practices. Participants also identified a need for indicators around reduced fish mortality events, reduced disease outbreaks, and overall faster response to fish health issues.

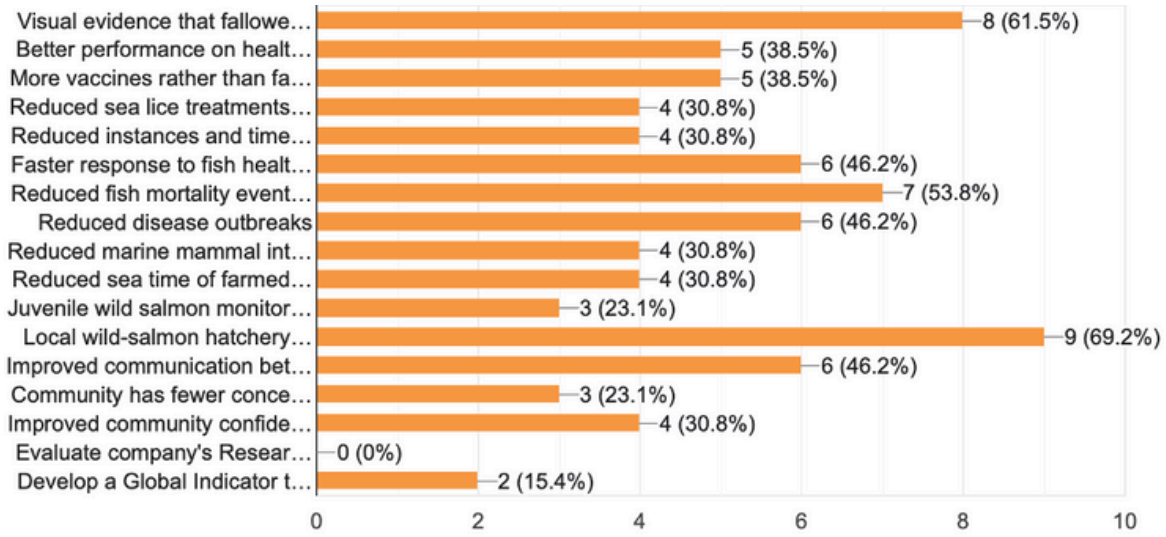

Figure 7. Question asked:What solid "proof" would you like to see that in the salmon farm industry to show they are making progress in sustainability? We often refer to these tools as metrics or indicators.

Previously on the first survey we had asked members if salmon farming could be improved and made more sustainable, and members answered as if it was already sustainable. Leadership of Kitasoo Xai'xais is generally supportive of the local salmon farming industry, and members were asked if they felt the Nation was taking the right approach in asserting their right to make decisions on the industry (Table 12). It was a unanimous response that respondents felt the Nation was taking the right approach: "Don't take away employment from Klemtu."

Table 11. A few of the survey questions asked in Survey 2 in March 2023.

Question	Response
Do you believe the salmon farming sector could be made more environmentally sustainable? Why or why not?	Yes = eight; Unsure = two Quote: "[need] biosecurity upgrading" Quote: "Yes, in the use of fossil fuels, cut back on burning fuel."
Do you think KX is taking the right stance in asserting our right to participate in shared decision making with DFO, **OR** to continue to choose for ourselves how to manage the industry in our traditional territory?	Quote: "I feel we have the right to choose for ourselves. For to many years we have bowed down to DFO & the government. We need to practice our right and titles and to stop letting DFO and the government tell us what we can and cannot do in our homelands!" Quote: "Yes it's best to hear both sides to make informed decisions for the nation." Quote: "Don't take away employment from Klemtu."

One question that Kitasoo Xai'xais has to address is how much energy and effort they should be investing into the industry and pushing for new technologies and innovation (Figure 9). We asked members what they thought about being a global leader in the industry, and there was some significant support, but also some uncertainty and opposition.

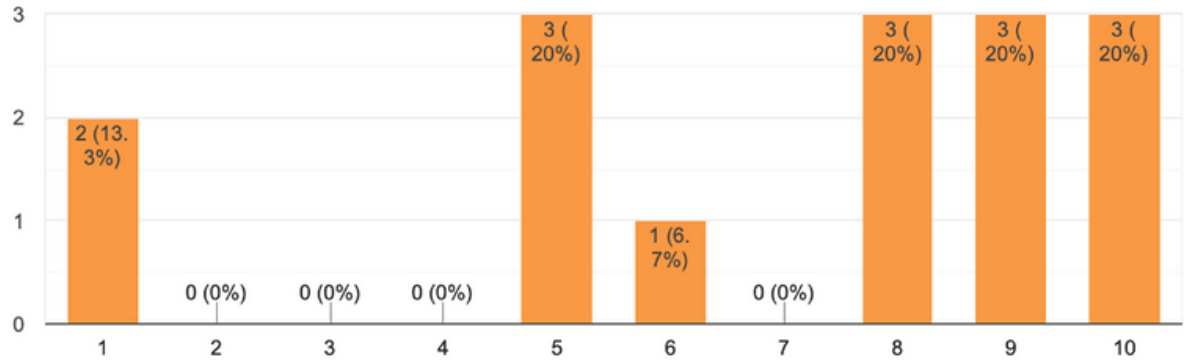

Figure 8. Question: On a scale of 1 to 10, how much interest do you have in seeing Kitasoo Xai'xais become a leader in facilitating technology and innovation in salmon farming?

Last question of the second survey asked, "Are there any additional actions or particular messages you would like to see happen and/or recorded in our KX Model and Transition Plan?"

Respondent 1: "Produce a solid plan based on our past use of "OUR" resources. There is hundreds of years of land and marine use in our territory, many are part of our indigenous laws or teachings that have been handed down orally."

Respondent 2: "I feel that having a community vote or a community petition signed by community members that support this be brought forward. I also feel a documentary and a in depth interview with the salmon farmers would be beneficial to get circulated on media. Faces and voices of Klemtu farmers that have raised families working in this industry. Generations of families have worked with MHC/Mowi. What does it mean to them."

Respondent 3: "Investment in nation member employees; housing, education, health & wellbeing. Challenge employees to show up in community & positively contribute. In my role & personally I notice negative social issues involve employees of MOWI."

Respondent 4: "Invite DFO to the community, invite the minister to the nation to see our people to hear our people and to get a birds eye view of our territory."

Discussion and Conclusion

The survey results, while limited in number, complemented our broader community engagement strategy, including on- and off-reserve members. They offered valuable insights and highlighted areas for further dialogue and addressing information gaps.

While our in-person sessions garnered active participation with substantial attendance, our surveys reached those we couldn't meet face-to-face. Notably, our school visits sparked conversations with older students about local industry developments, though student survey returns were lacking.

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Feedback revealed pride in the industry's success and job creation. While some believe the industry is sustainable, others expressed concerns about environmental impacts, underscoring the need for further inclusion of these perspectives. The second survey suggested a shift towards recognizing the potential for increased sustainability, possibly influenced by more in-depth discussions on the topic.

There's a noted need for clearer communication and regular updates from the industry, especially regarding the recovery of ecosystems post-fallow. Although uncertainty exists around KX's role in leading technology and innovation, the community is conscious of the challenges associated with new technologies.

The Kitasoo Model's nuances may have been overshadowed by information overload, but when prompted about the Kitasoo-Mowi partnership, members accurately described its key components. This underscores the need for consistent reinforcement and promotion of the Model.

Online surveys, despite low response rates, have proven essential in capturing diverse member perspectives. The incident of the unaddressed sea cucumber concern reflects the community's call for better feedback mechanisms. Rich personal narratives from the information sessions illustrated the community's deep connection to the industry beyond just employment; it's intertwined with their history, self-determination, and aspirations for prosperity.

Overall, there's evident pride in the local salmon farming industry, not just for the jobs it creates, but as a symbol of the Nation's history, its sovereign decision-making, and the tangible benefits it brings, such as lifting members out of poverty and securing a brighter future for the next generations.