



Business Case

The Return of U.S. Flavor to Our Plates

A Business Case for Investing in West Coast Groundfish

Prepared by Wilderness Markets & Changing Tastes

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Executive Summary

The West Coast Groundfish (WCGF) fishery in California is a fishery management success, but despite significant ecological progress, fishing and conservation communities continue to share concern about the long-term economic sustainability of the fishery. This is particularly true as WCGF are currently sold as a commodity product, easily replaced by other whitefish, and fishermen bear management costs that have increased over the past five years.¹ Investors interested in ecological and social impact are trying to understand what, if any, viable investment opportunities exist within the WCGF fishery and its supply chain.

A recently completed pilot executed by Changing Tastes and Wilderness Markets in collaboration with Compass Group (one of the world's largest foodservice companies), Santa Monica Seafood (SMS) (one of the region's largest seafood distributors), Real Good Fish (RGF) (a local California seafood distributor), and California-based harvesters in the California including the Groundfish Collective (CGFC), demonstrated that there is strong potential to increase demand and garner premium prices for WCGF. Through a small but focused chef-education campaign and promotion of WCGF by the foodservice company, Compass Group, the pilot secured 33%

of the total orders placed with SMS for pin bone out rockfish, and 2% of the total pacific rockfish sales (146,000 lbs) at SMS during a 90 day period (see table on page 6). This market share and growth trajectory are impressive, especially given the short, three-month timeframe of the pilot and its limited marketing budget. In addition, prices for WCGF in the pilot were 42-64% higher per pound than comparably specified "generic" U.S. sourced Rockfish (i.e. without local and wild attributes), and significantly above other premium protein choices such as antibiotic-free chicken breast, "natural" beef, and MSC certified Pollock². Chefs' interest in the higher-priced WCGF confirmed that WCGF can be differentiated from other whitefish and recognized in the marketplace for its provenance and story. Sixty-five percent of chefs said they would purchase the product again and would be "very likely" to use WCGF to replace other whitefish on their menus.

While the pilot demonstrated a strong opportunity to expand sales and move WCGF from a commodity to premium product, it also highlighted inefficiencies in the supply chain that must be solved for WCGF to meet this increase in demand and secure the value identified. Supply chain challenges, such as an inability to buffer the variable supply of fish; poor

¹ *West Coast Groundfish in California*. Wilderness Markets. 2015. <http://www.wildernessmarkets.com/wp-content/uploads/2015/12/Wilderness-Markets-West-Coast-Groundfish-in-California-synthesis-Final-Dec-20-2015-Web.pdf>

² Changing Tastes, Wilderness Markets & Walker Bernardo. 2018 Commodity Sector Activation Strategies and Recommendations for the West Coast Groundfishery.

information flow among harvesters, distributors, and end-users; and difficult “first mile” logistics to deliver fish while still fresh; resulted in the pilot fulfilling only 65% of orders. This is a significant shortfall given the industry-expected 95%+ fulfillment rate.

Wilderness Markets examined three potential investments that would address inefficiencies in the WCGF supply chain and enable WCGF to meet demand and move away from commodity pricing:

Information Technology: Creation of an online platform and web-app for order tracking, fish availability notifications, customer management, and payments. The web-app would facilitate communication across the supply chain, enabling the investee to expand its customer base, meet order requests, build customer commitment, and efficiently move greater volumes of WCGF to market.

Transportation and Storage: The purchase of a new refrigerated van and leasing of cold-storage space to address the need to buffer the supply of fish given variability in weather and other issues that prevent consistent supply.

Marketing and Sales: Development and implementation of a brand strategy to differentiate WCGF based on its origin, fishing practices, flavor, and recovery story. This strategy would include recruiting a commission-based sales person to promote WCGF.

We also analyzed the benefits and risks of a single company taking on different combinations of these investments at the same time.

Based on financial and risk analyses of the above scenarios (for both the investor and a potential investee), Wilderness Markets recommends a one-time, \$50,000 investment in an online order management system. This system would solve several key issues at once by facilitating communication across the supply chain. It will allow the investee to track orders, coordinate supply chain players, provide customers with notification of fish availability, and manage customer information and payments. This enhanced communication will help match orders to product availability, improving supply chain efficiency and reliability. This consistency is critical to improving fulfillment rates. It will also enable the investee to manage expanded sales while meeting customer expectations. From a customer perspective, chefs and other end-users will be able to order and receive fish when it is at its freshest and receive real-time information that will enable them to plan their menus around fish availability. This interaction will enable chefs to see their own role in improving local fisheries, strengthening the connection between end-users and the fishermen – a key element of continued sales growth and premium pricing.

We recommend this investment go to an entity that is already active in the WCGF supply chain. Existing players will be able to leverage existing relationships, create buy-in from the relevant stakeholders (e.g., fishermen, processors, distributors, buyers, and chefs) whose participation is critical



for a successful rollout of the software. This entity must also have a strong social mission at its core and a commitment to improving fishermen's' livelihoods. This dedication to the fishing community is critical to ensure that WCGF meet its brand promise around fishery recovery and contribute to the economic rebound of the fishery. To ensure fishers benefit requires the addition of a transparent buying relationship that would ensure they are compensated for their differentiated product, helping to complete the story of recovery for WCGF.

Using conservative sales and pricing assumptions, we expect this online system to enable the investee to reach an annual



revenue over \$1MM (with 160,000 pounds sold) in year five, using about 585,000 pounds of raw fish inputs. Total revenue would amount to \$4.4MM (with 630,000 pounds sold) over the five-year period and usage of 2.3MM pounds of raw inputs. We expect aggregate net profit after five years to reach \$650,000, and the investor is forecast to receive almost \$100,000 profit in the five years of the program, with pay back to the investor in year three.

Contextual Analysis

Fishery Status and Management Plan

The WCGF fishery in California is a management success. Of the 90 plus species managed by the Pacific Coast Groundfish Fishery Management Plan, the management council currently considers only five overfished, and classifies each of these species as “rebuilding.” In 2014, the Marine Stewardship Council (MSC) certified 13 trawl-caught species and the Monterey Bay Aquarium’s Seafood Watch program rated 21 trawl-caught species “Green, Best Choice” or “Yellow, Good Alternative.”³ This is a significant change from 2000 when the fishery was formally declared a disaster by the U.S. Secretary of Commerce.⁴

This ecological and management success did not happen in a vacuum, or overnight. A legally mandated, scientifically informed and enforced quota system provided the basis for effective management and sustainable harvests. Despite this significant ecological progress, fishing and conservation communities continue to share concern about the long-term economic sustainability of the fishery, particularly as the

fishermen continue to bear management costs that have increased over the past five years.⁵

Market Potential

Research into market demand indicates that retail grocery stores, institutional foodservice and full service restaurants are the most likely buyers to try U.S. West coast ground fish at premium prices and provide fishermen with a larger share of the final sale price⁶. These buyers can vary their offerings and have flexibility in the types of fish they use (making it easier for them to try U.S. West Coast groundfish or offer it seasonally); are more likely to have incentives for local and sustainable foods (which makes the U.S. West coast groundfish story appealing); and purchase fish in minimally processed form (which tends to bring higher prices to the fishers). This research indicates that sales of WCGF should focus on selling minimally processed products to suppliers and buyers in the grocery retail and full service restaurant sectors.⁷

³ “Huge improvement in Seafood Watch Rankings for Key West Coast Fisheries.” Retrieved September 25 2015 from <https://newsroom.montereybayaquarium.org/press/huge-improvement-in-seafood-watch-rankings-for-key-west-coast-fisheries>

⁴ <https://www.gpo.gov/fdsys/pkg/CHRG-107shrg87847/html/CHRG-107shrg87847.htm>

⁵ *West Coast Groundfish in California*. Wilderness Markets. 2015. <http://www.wildernessmarkets.com/wp-content/uploads/2015/12/Wilderness-Markets-West-Coast-Groundfish-in-California-synthesis-Final-Dec-20-2015-Web.pdf>

⁶ ibid

⁷ *West Coast Groundfish Regional Market Demand and Opportunities. Changing Tastes and Wilderness Markets.* 2017. <http://www.wildernessmarkets.com/portfolio/west-coast-groundfish-regional-market-demand-and-opportunities/>

Building on this research, Wilderness Markets and Changing Tastes designed a project to eliminate a chicken-and-egg conundrum in the fishery, in which harvesters are unable to sell high quality, sustainably sourced local groundfish at a reasonable price, and buyers are unable to access high quality, local groundfish products in their supply chains. This pilot, implemented in 2018, focused on the institutional food service segment in California. It created a time-specific and species-flexible initiative to provide WCGF harvesters with orders they could fill at an improved price.

The pilot project found strong demand from Compass Group, a major U.S. institutional food service group, for U.S. sourced product both at the corporate and unit levels. This was especially true for food service outlets whose chefs had

learned about the recovery of the fishery and their potential to be part of this success story. The sale of WCGF under this pilot reached over 18% of the total sales of pin-bone-out rockfish by SMS, a regional distributor, during the three months of the pilot with minimal marketing. The pilot achieved 2% of the total sales of rockfish products through the same distributor. In addition, prices for WCGF in the pilot were 42-64% higher per pound than comparably specified “generic” U.S. sourced Rockfish (i.e. without local and wild attributes), and significantly above other premium protein choices such as antibiotic-free chicken breast, “natural” beef, and MSC certified Pollock⁸. Chefs’ interest in the higher-priced WCGF confirmed that WCGF can be differentiated from other whitefish and recognized in the marketplace for its provenance and story.

⁸ Changing Tastes, Wilderness Markets & Walker Bernardo. 2018 Commodity Sector Activation Strategies and Recommendations for the West Coast Groundfishery.

Pilot Period Sales 4/1-6/30/2018 ⁹		
	Pounds	Prices
<i>Not pilot-specific</i>	Total SMS PBI Pacific Rockfish Sales (SNA103)	146,485 <i>(635 to Compass Pilots)</i>
	Total SMS PBO Pacific Rockfish Sales (SNA103P)	14,750 <i>(2,180 to Compass Pilots)</i>
	Total Compass PBI and PBO Pacific Rockfish Sales to Pilot Sites (SNA103P, SNA103)	2,815
	Total Orders of Pilot-labelled California Rockfish PBO during Pilot (SNA1022-1024, SNA2024)	5,010
	Total Deliveries of Pilot-labelled California Rockfish PBO during Pilot (SNA1022-1024, SNA2024)	3,270

*PBI = Pin Bone In

**PBO = Pin Bone Out

This pilot highlighted the value and importance WCGF's "story of a recovery" and "the return of lost flavors" – these product

attributes resonated strongly with the buyers and end users, more so than the environmental benefits of the product.

When WCGF was added to menus during the pilot:

- Diners increased their consumption of fish.
- Increased consumption occurred in corporate dining environments, which also meant that diners were choosing fish over other non-fish options.
- WCGF was preferred over all other types of fish and seafood.

In a survey that was carried out subsequent to the end of the pilot:

- Sixty-seven percent of chefs polled described guest reaction to having WCGF as a menu option as Satisfied (50%) or Delighted (17%). 33% described guest reaction as Neither. No chef described guest reaction as Dissatisfied.

⁹ Wilderness Markets, Changing Tastes, Lessons Learned from the West Coast Groundfish Pilot, October 2018

- Sixty-seven percent of chefs said they would menu the Same Amount (42%) or More (25%) WCGF on menus.
- The four who indicated “Less” expressed a small café population or limited menu options. None said pricing was the reason they would menu less.
- As a result of the pilot, 66% of Chefs who currently use imported farmed whitefish said they would be “Very Likely” to replace imported farmed white fish (tilapia, pangasius, etc.) with WCGF.

These results point to the potential for WCGF to move from a commodity product to a premium product, with accompanying price increases. Case studies of other food products – such as olive oil, bourbon, and antibiotic-free chicken breast – show that marketing based on origin, taste, production practices, craft, and social impact can successfully differentiate otherwise substitutable food products and

garner premium prices¹⁰. The story of WCGF touches on all of these points and can be used to differentiate WCGF from other white fish:

- WCGF, by definition are from a specific location on the U.S. West Coast and can be marketed as such (Origin).
- The pilot showed that chefs and their customers believe the taste and texture of WCGF are high-quality, and that the story of “return of lost flavors” resonates with buyers (Taste).
- Similarly, the story of recovery resonates with chefs and their customers - it connects buyers to the fishermen, evokes a small producer image, and touches on both environmental and social good (Production Practices, Craft, Social Good).

Organizational Capacity

The key players in the California groundfish supply chain have varying degrees of organizational capacity that were evidenced in the pilot. While a few weak links were identified in the recently completed pilot, for the most part, organizational capacity is relatively high in this fishery –

organizations have exhibited profitable operations for numerous years and have capable leadership.

There is a well-established ecosystem of buyers and end markets, processing facilities and cold chain options in this market. Distributors such as SMS have existing, contractual

¹⁰ Changing Tastes, Wilderness Markets & Walker Bernardo. 2018 Commodity Sector Activation Strategies and Recommendations for the West Coast Groundfishery.

relationships with suppliers and customers, and there are well-established legal, regulatory and liability standards to which all participants adhere. Noted shortcomings were the distributors' like Real Good Fish's (RGF) ability to transport or store fish in a cost and time efficient manner; and the capacity

Supply Chain Capacity

There is a well-established ecosystem of buyers and users, processing facilities and cold chain options in the existing WCGF supply chain. The larger distributors, such as SMS, have long-standing, contractual relationships with suppliers and customers, and there are well-established legal, regulatory and liability standards to which all participants adhere.

Most organizations in the supply chain have had profitable operations for numerous years and have capable leadership. However, these players have varying degrees of organizational motivation and capacity to take on new roles to promote, facilitate, and deliver additional sales of WCGF, which contributed to the low order fulfillment rate in the pilot. Noted shortcomings include the lack of a product "evangelist" to build product and brand awareness; larger distributors' (e.g., SMS's) capacity to market differentiated, niche, seafood products to buyers; smaller distributors' like Real Good Fish's (RGF) ability to transport or store fish in a cost and time

lack of a product "evangelist" to build product and brand awareness; larger distributors' (e.g., SMS's) capacity to market differentiated, niche, seafood products to buyers; smaller of the entire supply chain to effectively communicate orders and availability.

efficient manner; and the capacity of the entire supply chain to effectively communicate orders and availability.

The pilot demonstrated that the existing supply chain's inability to efficiently move product is not due to a processing shortfall. There are reasonable numbers of processing options with available capacity on the California coast. Logistical shortfalls occurred in the "last mile" at either end of the supply chain, i.e., the ability to move fish to the processors, and the ability to deliver fish to end users in a cost effective manner. In addition, a lack of timely, transparent information exchange throughout the supply chain meant that end-users had unrealistic order expectations and, without a reliable fulfillment rate, could not plan ahead for product availability. This lack of communication was not only a significant business constraint, but is also a significant driver of the lack of trust evident in this supply chain.

Value Proposition

Product Evangelist and Trusted Connector

Based on the pilot and the contextual analysis, we believe a unique and compelling opportunity exists for developing an effective, experienced product evangelist capable of operating within the supply chain as a “good middleman” who improves transparency, connects supply chain players, and is committed to improving fishing livelihoods. An evangelist would not necessarily be just one person, but an entire organization, with a strong social mission and a strong social and

environmental mission integrated into its branding and operations. This entity would own, develop and integrate the necessary improvements in logistics, information technology and communication flow between participants in the supply chain. It would improve the buffer capacity of the supply chain. In all of the investment scenarios below, we assume that the investee take on this role and position themselves as a trusted connector in the supply chain.

Business case/Potential Investments/Investment Options

To address the constraints and opportunities documented in the WCGF supply chain, Wilderness Markets analyzed the

following improvements and estimated their respective costs and benefits:

Information and Technology

Online Platform – creation of website, phone app, and technology platform for order tracking, fish availability notifications, customer management, and payments. The web-app would facilitate communication across the supply chain, enabling the investee to expand its customer base, meet order requests, build customer commitment, and efficiently move greater volumes of WCGF to market.

By increasing customers' understanding of – and personal connection to – the harvester story, the interactive web-app

will reinforce key differentiators for WCGF. It will enable the investee to highlight characteristics, such as provenance and social good, that will help WCGF continue to move away from commodity pricing. By modernizing and improving order tracking and payment systems, this online platform will also enable the investee to scale sales over time.

Expected cost is \$50,000 to implement in the first year.

Logistics

Transportation and Storage – purchase of a new refrigerated van and a two-year lease of cold-storage space. The van and cold storage will help address the “last mile” logistics challenges in the supply chain and enable the investee to hold fish to buffer supply. This storage will help smooth the variability in supply that inevitability occurs due to vessel and weather-related delays in the fishery.

Marketing and Sales

Personnel and Branding – development and implementation of a brand strategy to differentiate WCGF based on its origin, fishing practices, flavor, and recovery story. This strategy would include building the brand of the investee, highlighting its leadership on social and environmental issues. This investment would also include recruitment of a commission-

Expected cost is \$25,000 to support the purchase of a new van, and \$25,000 for 24 months of cold storage leasing. This will be used to store product from harvesters operating in northern California.

based sales person to promote WCGF to foodservice buyers and chefs.

Expected cost is \$25,000 for brand strategy development and \$75,000/year for the salary of a sales associate.

Financial and Risk Analysis

We analyzed four separate investment scenarios for impact investors to explore. Note that the pilot results indicate that without addressing supply chain inefficiencies, increasing marketing and sales efforts will ultimately fail: the investee must be able to meet the industry standards around order fulfillment before further raising expectations and interest in WCGF. Given this need to ensure that the investee can deliver on orders, we only analyzed Marketing and Sales investments

combined with investments in Information Technology and Logistics.

For all of the investment scenarios, we presumed a hypothetical investee who is a direct-to-consumer small business with sales volume at baseline of 75,000 pounds and approximating \$500,000 annually revenue (before changes to sales price). Net operating revenues are estimated between 0-20% in the base case. The hypothetical target company is young; operations are growing and it not established in the market - holding low bargaining power. Yet, the company is sustainable; the business concept is proven and there is low risk of insolvency. The company is active in the supply chain, has existing sales relationships, and has transportation or staffing capacity levels that require additional investment.

Scenario	Description	Amount
1	Improvements to <u>information and technology</u> through creation of online order tracking	\$50,000
2	Improvements to <u>logistics</u> through the purchase of a van and leasing of cold storage space.	\$50,000
3	<u>Information and technology plus logistics</u> (Scenarios 1 and 2)	\$100,000
4	Integrating <u>scenarios 1 and 2</u> , implementing an online platform as well as improving logistics. Plus investment into <u>marketing and sales</u> through the development of a brand strategy and hiring of a sales-person.	\$200,000

Please refer to the “Key Assumptions” section of this paper for additional details and further background.

Scenario 1, Information and technology

Required Investment:

A \$50,000 loan to cover the initial cost to develop and implement the online platform. The loan would be paid back in five years at 9% interest with an added royalty paid to investors equal to 1% of total revenue starting in the second year.

Results (Appendix 1):

Development and implementation of the web application would increase the number of customers purchasing WCGF and allow the investee to scale. We estimate that the added outreach capability and efficiency of the online platform would enable the investee to secure an estimated sales growth-rate of 25% in year one, and 15% per year over the

following four years. This is considered a conservative estimate based on the current experience in this fishery.

We estimate annual revenue to reach over \$1MM with 160,000 pounds sold in year five, using about 585,000 pounds of raw fish inputs. Total revenue would amount to \$4.4MM with 630,000 pounds sold over the five-year period and usage of 2.3MM pounds of raw inputs. Net profit after five years is expected to be \$460,000.

Presuming an investee with the profile above, we expect the program to generate an additional \$66,000 of profit compared to the current state. The net present value (NPV) of this scenario is positive at over \$46,000, the internal rate of return

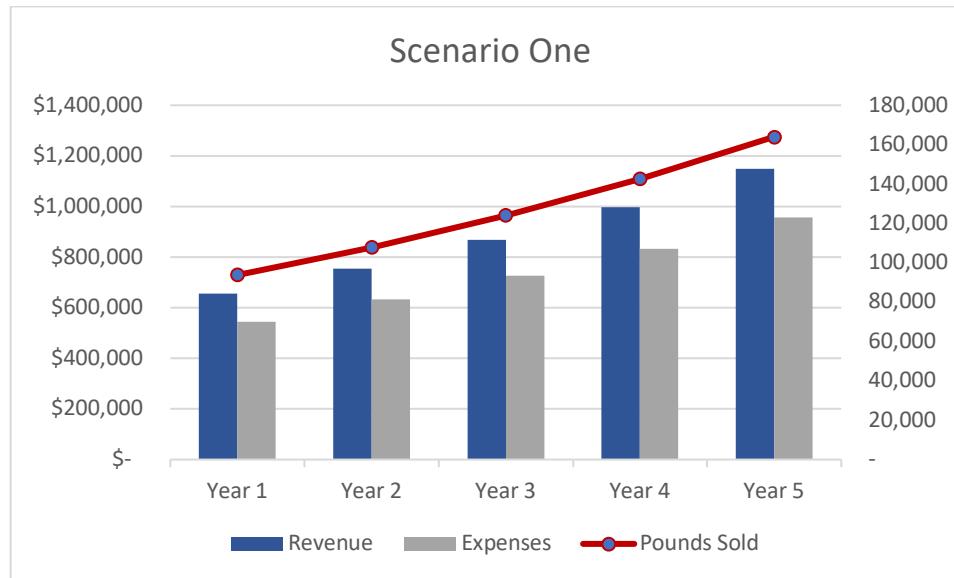
(IRR) is 25%, and the scenario should pay back to the investee in year four.

The investor in this scenario is set to receive almost \$100,000 in the five years of the program. This amount includes almost

\$63,000 in interest payments and \$37,000 in royalties, meaning that the investor receives pay back in year three. The investment has an NPV of about \$35,000 and an IRR of 26%.

	Year 1	Year 2	Year 3	Year 4	Year 5
Pounds Sold	93,750	107,813	123,984	142,582	163,969
Revenue	\$ 656,250	\$ 754,688	\$ 867,891	\$ 998,074	\$ 1,147,785
Expenses	\$ 545,080	\$ 632,521	\$ 725,531	\$ 832,492	\$ 955,498
Tax	\$33,351	\$36,650	\$42,708	\$49,675	\$57,686

	Company	Investor
NPV	\$46,164	35,470
IRR	25.3%	26%
Payback Year	Year 4	Year 3



Feasibility:

The scenario is feasible; the expected returns show a positive result for the investee and the investor. To realize the estimated 15% sales-growth targets, the investee must already have a website to build upon, as well as engagement within the seafood community and supply chain to gain buy-in throughout the platform's rollout.] Loan payments would be approximately 2% of total operating expenses and average about 13% of total net profit. Without any foreseen cash flow issues, the debt burden is not high.

Scenario 2, Logistics

Required Investment:

A \$50,000 loan to purchase a refrigerated van and pay for the initial cost to lease 24 months of cold storage use. Ongoing cold storage lease costs after year two will be taken on by the investee with their own cash flows. The loan would be paid back in five years at 9% interest with an added royalty equal to 1% of total revenue starting in the second year.

Results (Appendix 2):

We estimate that the refrigerated van and cold storage space will increase trip capacity from the current 2,100 lbs. per trip to 11,200 lbs. This gain in capacity translates to a significant reduction in transportation costs from 26 cents per pound to 5 cents per pound.

We expect annual revenue to reach \$845,000 with 120,000 pounds sold in year five, using 430,000 pounds of raw fish inputs. Total revenue would amount to \$3.5MM with 503,000 pounds sold over the five-year period using 1.8MM pounds of raw fish input. Expenses are about \$700,000 in year five, and net profit is expected to be \$407,000 after five years.

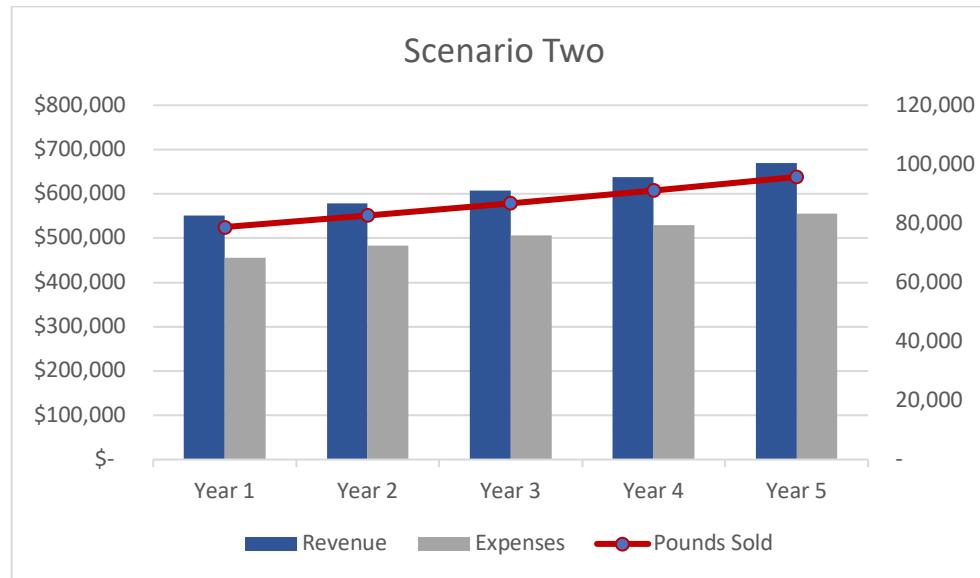
For the investee, we expect this investment to generate an additional \$10,000 in profit over the current state. The NPV of

this scenario is positive at over \$3,000, the IRR is almost 8%, and the scenario should pay back to the investee in year five.

The investor in this scenario is set to receive about \$92,000 in the five years of the program. This amount includes almost \$62,000 in interest payments and \$30,000 in royalties. This means that the investor receives pay-back in year three. The investment has an NPV of about \$29,000 and an IRR of 22%.

	Year 1	Year 2	Year 3	Year 4	Year 5
Pounds Sold	78,750	82,688	86,822	91,163	95,721
Revenue	\$551,250	\$578,813	\$607,753	\$638,141	\$670,048
Expenses	\$455,543	\$482,861	\$505,756	\$529,796	\$555,038
Tax	\$30,436	\$32,322	\$36,303	\$40,682	\$45,499

	Company	Investor
NPV	3,072	28,670
IRR	7.77%	22%
Payback Year	Year 5	Year 4



Feasibility:

The scenario is feasible. The expected returns show a positive result for the investee and the investor. The increase in leased cold storage capacity, and new van both carry little ongoing obligations of fixed costs and should not cause significant structural changes to an assumed investee which has existing similar logistical commitments. Using a hypothetical company with the characteristics identified on page 10, loan payments are about 2% of total operating expenses and average about 15% of total net profit. Without any foreseen cash flow issues, the debt burden is not high.

Scenario 3 Logistics plus information and technology

Required Investment:

The results of Scenario One and Scenario Two both show positive net effects. If the investments in technology from Scenario One are combined with Scenario Two's investment in logistics, the cost of this new plan would be \$100,000. This investment includes \$50,000 to cover the initial cost for the online platform, \$25,000 to help purchase a van and \$25,000 to prepay the first 2 years of cold storage lease.

Results (Appendix 3):

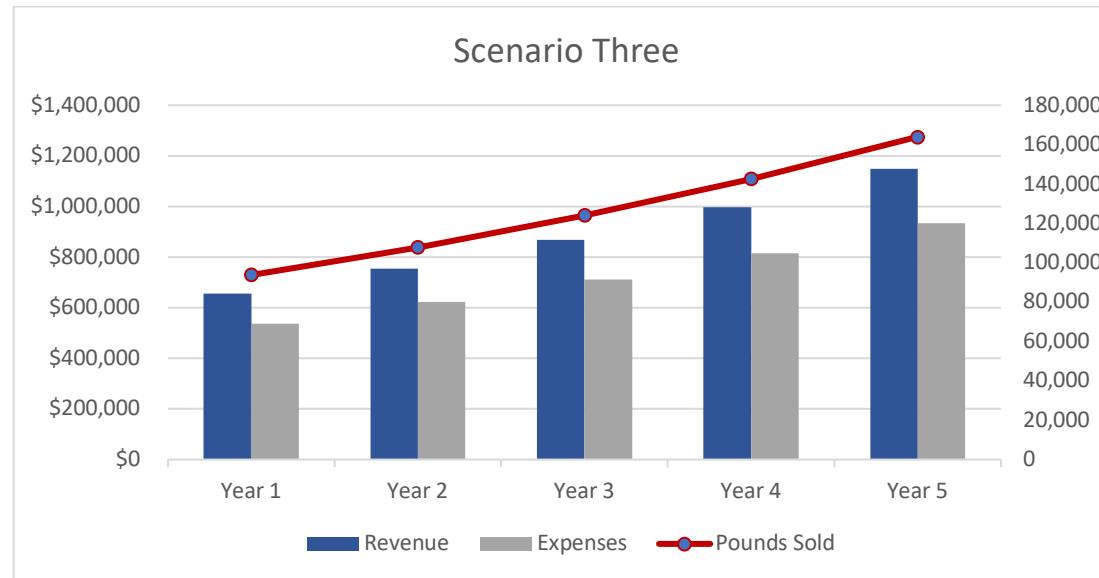
Revenue figures will be the same as in scenario one; annual revenue is expected to reach over \$1MM with 160,000 pounds sold in year five, using about 585,000 pounds of raw fish inputs. Total revenue would amount to \$4.4MM with

630,000 pounds sold over the five-year period and usage of 2.3MM pounds of raw inputs. Yet, total expenses are reduced because of the added efficiency from investments in logistics. As in scenario two, the gain in trip capacity, from 2,100 lbs. per trip to 11,200 lbs., per trip, translates to a significant reduction in transportation costs from 26 cents per pound to 5 cents per pound. leading to a net profit of \$670,000 after five years.

The investor in this scenario is set to receive about \$62,000 in profit for the five years of the program. This amount includes \$125,000 in interest payments and \$37,000 in royalties. This means that the investor receives pay back in year four. The investment has an NPV of about \$39,000 and an IRR of 17%.

	Year 1	Year 2	Year 3	Year 4	Year 5
Pounds Sold	93,750	107,813	123,984	142,582	163,969
Revenue	\$656,250	\$754,688	\$867,891	\$998,074	\$1,147,785
Expenses	\$537,515	\$621,953	\$711,509	\$814,499	\$932,938
Tax	\$31,870	\$36,070	\$43,164	\$51,322	\$60,704

	Company	Investor
NPV	26,428	39,470
IRR	13.25%	17%
Payback Year	Year 5	Year 4



Feasibility:

The results of Scenario 3 are very similar to those of Scenario One, investing in technology alone.

The gains to the investee as a whole are minimal because the increases in efficiency are commensurate with the burden of taking a higher loan and paying double the interest. At current sales volume, transportation cost does not make up a great percentage of the overall operating expenses and therefore, the higher efficiency from investments in logistics do not synergize with the investments in technology.

For the investor, this scenario produces a \$4,000 gain in NPV over Scenario One. On the other hand, the project's IRR is reduced by about 10% and the payback year is in year four (as

opposed to year three for Scenario One). Compared to Scenario One, the investor is giving out a loan twice as large and interest income doubles, but the revenue from royalties is the same in both scenarios. Therefore, each dollar invested in Scenario One is more efficient.

It is a similar story for the investee. Scenario 3 has an almost 12% lower IRR, and adjusted ROI is cut in half, from 13% to 6.5%. Scenario One also breaks even to the initial costs in year four instead of year five. This points to diminished marginal returns from the increased investment. The increased financial burden on the investee may be significant depending on their current size, so it is important to consider these measures.

Scenario 4, Integrated approach

Required Investment:

A \$200,000 loan to cover 1) the purchase a refrigerated van and the initial costs to lease 24 months of cold storage use, 2) the initial costs to develop and implement the online platform, and 3) the development of a brand strategy and the hiring of a sales-person. Ongoing cold storage lease costs after year two and ongoing salaries after year one will be taken on by the investee. The loan would be paid back in five years at 9% interest with an added royalty equal to 1% of revenue starting in the second year.

Results (Appendix 3):

As described in previous scenarios, we expect an investment in the web platform to increase sales growth to 15% annually, and the investment in logistics is expected to reduce transportation costs per pound to 5 cents. This scenario also includes the addition of a sales associate and a new branding strategy to these supply chain investments. We expect this

addition to generate an extra 25% increase in sales in year one, such that sales growth reaches 50% in the first year.

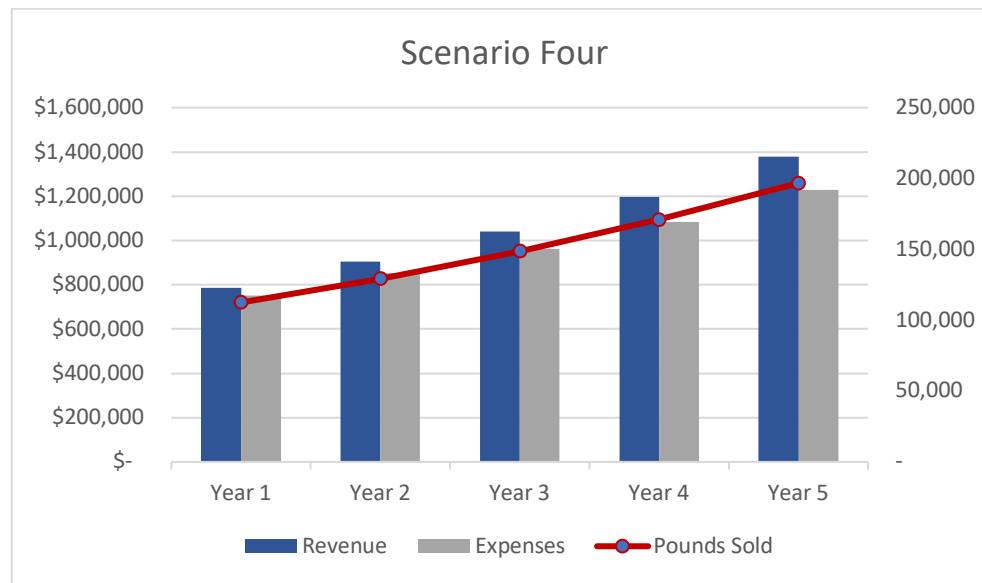
We expect annual revenue to reach almost \$1.4MM with 196,000 pounds sold in year five, using 700,000 pounds of raw fish inputs. Total revenue would reach \$5.3MM with 758,000 pounds sold over the five-year period using 3MM pounds of raw fish inputs. Expenses are about \$1.22MM in year five and net profit is expected to be \$201,000 after five years.

Compared to the company's current state, we expect this investment to reduce net profit by \$196,000 in the first five years. The NPV of this scenario is negative at \$190,000, the IRR is negative at 50%, and therefore the scenario will not pay back to the investee.

The investor in this program is set to receive about \$94,000 in profit for the five years of the scenario. This amount includes almost \$250,000 in interest payments and \$45,000 in royalties. This means that the investor receives pay back in year four. The investment has an NPV of about \$54,000 and an IRR of 14%.

	Year 1	Year 2	Year 3	Year 4	Year 5
Pounds Sold	112,500	129,375	148,781	171,098	196,763
Revenue	\$787,500	\$905,625	\$1,041,469	\$1,197,689	\$1,377,342
Expenses	\$752,446	\$853,772	\$961,239	\$1,084,827	\$1,226,953
Tax	\$10,516	\$15,556	\$24,069	\$33,859	\$45,117

	Company	Investor
NPV	(190,134)	53,551
IRR	-50%	14%
Payback Year	Not in 5 Years	Year 4



Feasibility:

The program is not feasible. The expected returns show a negative result for the investee. The expenses associated with a new branding strategy and sales personnel do not create sufficient benefit to justify taking on the added investment. Presuming the investee is currently profitable, it would do better to remain in the current state, not taking on this investment. The burden of financing will increase dramatically as the interest payments are 200% net profit in year one and averages 59% of net profit in years two through five. The hypothetical investee is not established enough to take full advantage of a new branding campaign and sales personnel.

Key Assumptions

Current State

Based on the pilot program, we assumed the following operating rates and expenses:

<i>Variable Prices</i>	
Price paid to harvester per pound of raw fish	\$ 0.77
Processing fees per pound of resulting product	\$ 1.75
Yield after processing	28%
Transport and observer fees per pound of cut product	\$ 0.17
Delivery cost per trip	\$ 154
Handling labor per pound	\$ 0.50
Labelling cost per pound	\$ 0.03
Overhead cost % of total unit costs product in	5%
<i>Resulting Unit Costs</i>	
Cost per input pound	\$ 1.59
Cost per output pound	\$ 5.70
<i>Revenue</i>	
Starting pounds sold	75,000
Baseline growth rate, after any investment (including truck)	
Baseline growth rate, status quo	5%

Seasonality: share of annual volume by month

January	7%
February	7%
March	9%
April	8%
May	10%
June	8%
July	8%
August	9%
September	9%
October	9%
November	8%
December	8%

Scenario Assumptions

To analyze each scenario, we applied an overhead rate of 5% of the unit costs coming in. The overall costs related to staffing, administration, and property of the investee (as a whole) are higher.

Sales price was also maintained at a constant rate of \$7.00 per pound sold, a small increase over the price achieved in the pilot. This price is the price for the delivered final product, after cutting, processing, packaging, and delivery. The rate

was applied to both the current state and the new investment scenarios. In the current state, the profit margin is \$1.30 per pound after cost of goods sold. This sales price is a departure from the pilot program, where sales price and unit costs were about equal. Control over sales price is low and the investment scenarios are not assumed to have differentiated effects on it.

Other Assumptions

Discount rate	5%
Tax rate	30%

Potential risks

As with any wild capture fishery, the inherent risks to resources wholly within a natural system are potentially the largest challenge to returns. Below we outline identifiable, realistic risks that have informed our key assumptions:

Environmental

- **Stock Health** – This business case is based on the assumption that stocks remain stable and do not suffer increased or sudden mortality. Should the stock decline for any reason, such as overharvesting in other areas, negative effects of climate change, etc., fishery managers will reduce the available quota, and thus negatively impact harvesters and this investment. This risk is factored into the underlying assumptions of the business case.
- **Natural Disasters and Inclement Weather** – Earthquakes, tropical storms, and wildfires are a normal part of this fishery's ecosystem and value chain. Most of these challenges are increasingly impacted by climate change which is also exacerbating ocean temperature fluctuations and other phenomena that affect stock health and location. Natural disasters may negatively affect stocks as well as infrastructure.

As during the pilot, unpredictable weather will negatively impact availability of fresh fish. To the extent possible, this risk has been integrated into the assumptions. Improving cold storage and supply chain “buffering” of inventory will assist in addressing this risk.

Governance and Regulatory Risk

- **Fishery management** – Wilderness Markets has identified several examples of misalignment between natural fishing seasons and when allocations are provided along with their impact on the value chain.¹¹
- **Monitoring and enforcement** – The availability and cost of observers as part of the ongoing monitoring and enforcement is a risk. Continued development of electronic monitoring will reduce fishing costs and ensure harvesters are able to go out when the weather is suitable, and not only when observers are available.

Business Risk

- **Price** – Price fluctuations are a significant risk to the business model. Should fish stocks continue to recover, and quota increase, there is the likely outcome for

¹¹ West Coast Groundfish in California. Wilderness Markets. 2015.

<http://www.wildernessmarkets.com/wp-content/uploads/2015/12/Wilderness-Markets-West-Coast-Groundfish-in-California-synthesis-Final-Dec-20-2015-Web.pdf>

product prices to harvesters to decrease. As “white fish” is a domestically and internationally traded product, prices will be impacted by the ease of product substitution and product availability from other locations. Both risks may be mitigated to some extent by appropriately marketing and differentiating the local product.

- **Supply chain logistics** – The nascent nature of supply chain logistics at the last mile and organizational capacity at the sourcing end of the supply chain present a significant risk to the availability of seafood, and the timely transportation of fish to processors and the buyers. This business case addresses this risk by proposing an investment in improved transport options.
- **Credit risk** – As the investee is not yet determined, they may or may not have an established balance sheet nor a strong track record of profitability. Depending on the entity, the credit risk may or may not be mitigated by experience with the sourcing of product in the supply chain, and experience in selling in new markets.
- **Management** – The investee should be very knowledgeable in regards to the sourcing and supply of
-

seafood from California ports. While working with and selling to higher-volume clients in the institutional foodservice market might be a new endeavor, the investee should have strong relationships and experience working with firms active in the current supply chain.

- **Operational** –The investee should possess the necessary operational expertise to secure and provide seafood to end-users in the supply chain as demonstrated in the WCGF pilot. The recommended investment will improve on this capacity and, if successful, build sales such that additional personnel can be hired to develop and expand sales.
- **Economic** – Demand is driven by economic conditions in the U.S. Should the U.S. be impacted by an economic or financial downturn, demand for the product may be negatively impacted.
- **International trade** - Prevailing sentiment in international trade is highly supportive of U.S. sourced products. Given the significant U.S. dependence on foreign seafood, the investee will be well-positioned to take advantage of this shift, which is supported by market research.

Recommendation

We recommend Scenario One, investing in an online platform. This investment has the greatest positive effect. Although

investing in logistics has a greater net profit in the first two years, the increased sales growth created through the tech

program will produce net benefits that greatly outpace the other scenarios in future years. Net profit for the investee is the highest under Scenario One. The adjusted return on

investment is 13% or twice that of investing in logistics (Scenario Two), and the NPV is \$46,000 or 43,000 more than investing in logistics.

Investor returns over five years

	Net Cash flow	NPV	IRR	Payback Year
Scenario 1, Tech	\$49,959	\$35,470	26%	Year 3
Scenario 2, Logistics	\$41,757	\$28,670	22%	Year 3
Scenario 3, Tech & Logistics	\$62,235	\$39,394	17%	Year 4
Scenario 4, Integrated	\$94,322	\$53,551	14%	Year 4

Investing in an online platform has a direct fit with a hypothetical investee's resources, direction, and competitive advantage as they move into the "product evangelist and connector" role. The investee must leverage existing relationships and wide supply chain participation to create buy-in from the relevant stakeholders and have a successful rollout of the software. This investment has the added capability of ultimately involving the greatest number of fishers and engaging them more meaningfully in the value chain. The platform will allow fishermen to see who is buying their fish, making transactions more transparent—something

fishermen have expressed is of value to them. This will have the added benefit of helping fishermen to better understand how the value chain works.

Investing in Scenario Four produces the highest net present value for the investor. Yet, the financing burden placed on the investee company is high, creating repayment risks. The net effect of these investments for the company is negative compared to the current state, meaning the company should not undergo that program.

Investee Total for five years

	Net Profit	Effect of investment	NPV	Adjusted ROI
Scenario 1, Tech	\$ 463,496	\$66,158	\$46,164	13.23%
Scenario 2, Logistics	\$ 407,231	\$9,893	\$3,072	3.96%
Scenario 3, Tech & Logistics	\$445,641	\$48,304	\$24,248	6.44%
Scenario 4, Integrated	\$ 201,271	(\$190,066)	(\$190,134)	(19.61%)

Scenario Two, investing in a refrigerated van and cold storage, produces higher operational efficiency and reduces cost of goods sold more so than any other scenario. Because of this, the investee sees the lowest cost per unit and lowest sales price to break even. Yet, this scenario does not improve sales

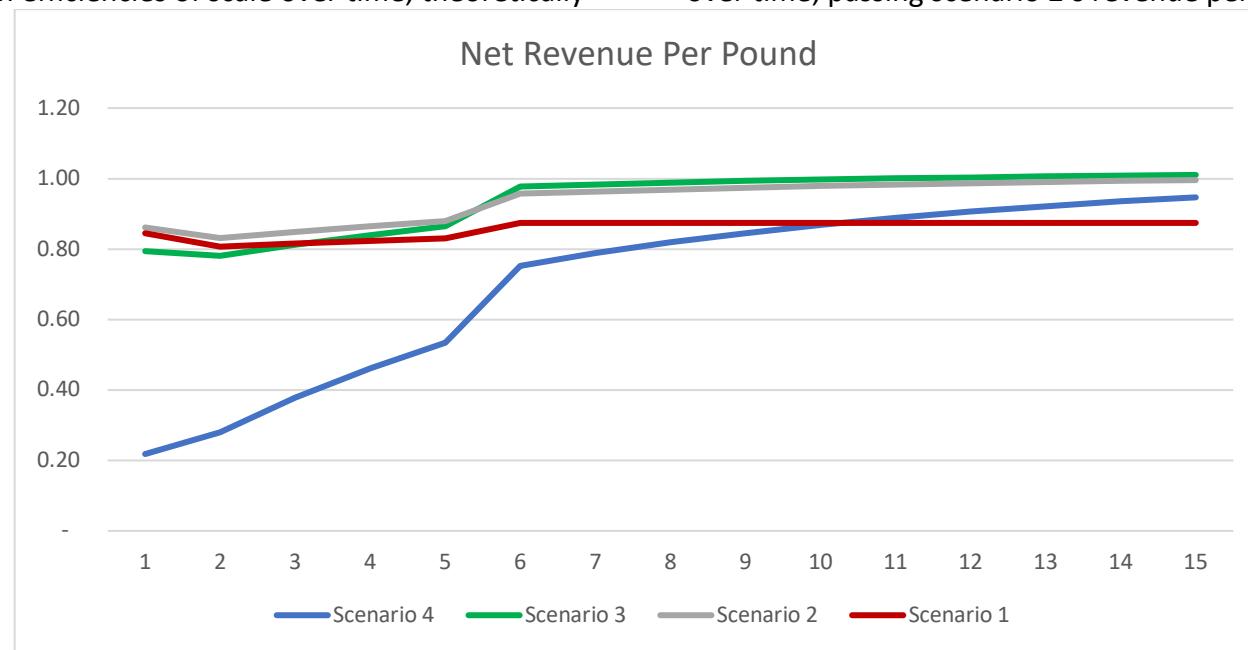
growth above the current state. For Scenario Two, assuming moderate sales volume, scale and growth represents a greater opportunity for increased net profits; at lower cost per unit, higher volumes would be beneficial

Unit level (pounds) comparisons, five year averages

	Cost per pound out	Cost per pound in	Sales price to break even	Profit margin to break even
Scenario 1, Tech	\$5.68	\$1.59	\$5.84	3%
Scenario 2, Logistics	\$5.47	\$1.53	\$5.78	6%
Scenario 3, Tech & Logistics	\$5.47	\$1.53	\$5.83	7%
Scenario 4, Integrated	\$5.47	\$1.53	\$6.46	18%

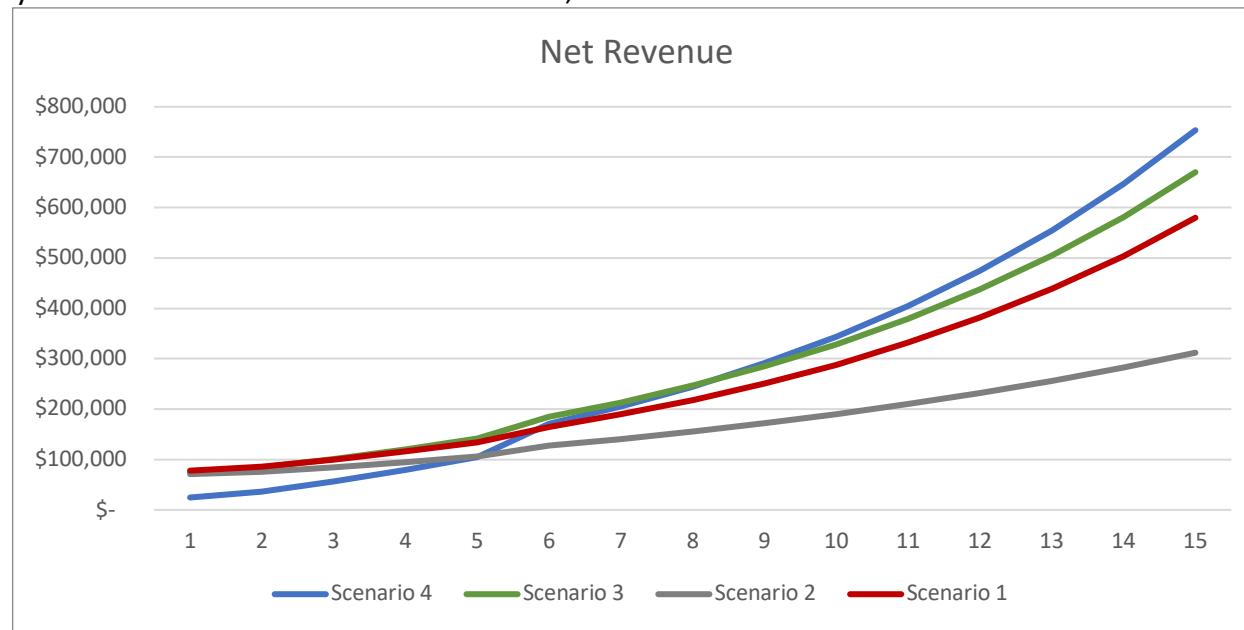
The following graph illustrates long term effects of the investments on net revenue per pound, which is higher in scenarios two and three. In fact, scenario four sees the greatest growth in efficiencies of scale over time; theoretically

surpassing the net revenue per pound of scenario one at year 10. Combining investments in tech and logistics has higher costs at the onset of the program but create higher returns over time; passing scenario 2's revenue per pound in year five.



A notable improvement comes to scenario four, the integrated approach, after year five when the financial burden from paying back the loan has ended. To illustrate how this increased efficiency would affect total net revenue over time,

the following graph includes volumes sold - assuming a constant 15% sales growth for scenarios 1,2, and 4 after year five:



Recommended Timeline and Other Considerations

Adopting a five-year timeframe, our analysis shows that Scenario One has a significant impact on the operations and viability of a potential investee. However, it is likely that investments into logistics, sales personnel and branding strategy will be required once improved ordering and transparency measures have been implemented, and as volumes and sales territories increase. We would therefore recommend re-evaluating the scenarios once Scenario One has been implemented.

Potential macro-level benefits

The proposed investments should have some high level benefits as defined through the lens of the United Nations Sustainable Development Goals (SDGs).

SDG alignment

The primary relevant goals are SDG 12 (Sustainable Consumption and Production) and SDG 14 (Life Below Water).

SDG 12 – Sustainable Consumption and Production

Sustainable consumption and production is about promoting resource sustainable infrastructure, and providing access to basic services, green quality of life for all. Its implementation helps to achieve overall future economic, environmental and social costs, strengthen economic poverty.¹²

Key targets include the sustainable management and efficient use of food waste; encouraging companies to adopt sustainable practices information into their reporting cycles as well as support developing scientific and technological capacity to move towards more sustainable patterns of consumption and production.¹³

SDG 14 – Life Below Water

SDG 14 specifically calls for improving access for small scale artisanal markets. Under this SDG, the investors are helping to ensure the and management funding for the proportion of fish stocks maintained levels.¹⁴

If successful, this investment would contribute to the full recovery of fishermen to continue to meet sustainability requirements and restore fishery.



and energy efficiency, and decent jobs and a better development plans, reduce competitiveness and reduce

natural resources; the reduction and to integrate sustainability countries to strengthen their

fisheries to marine resources and continued proper management within biologically sustainable

the WCGF fishery, enabling the economic performance of the

¹² <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/>

¹³ <https://www.un.org/development/desa/disabilities/envision2030-goal12.html>

¹⁴ <http://www.fao.org/sustainable-development-goals/goals/goal-14/en/>

Appendix 1, Scenario 1 - Improvements to information and technology through creation of online order tracking

Company	Year, 0	1	2	3	4	5	Total
Pounds Sold		93,750	107,813	123,984	142,582	163,969	632,098
Revenue		\$656,250	\$754,688	\$867,891	\$998,074	\$1,147,785	\$4,424,688
Expense		2.34%	3.27%	3.00%	2.77%	2.57%	
	Profit Margin Break Even	\$5.81	\$5.87	\$5.85	\$5.84	\$5.83	
Expense	\$50,000	\$545,080	\$632,521	\$725,531	\$832,492	\$955,498	\$3,741,122
Operations	50,000	532,625	612,519	704,397	810,056	931,565	3,641,162
Sales Staff		-	-	-	-	-	-
Cold Storage Lease		-	-	-	-	-	-
Financing		12,455	12,455	12,455	12,455	12,455	62,275
Royalties		7,547	8,679	9,981	11,478		37,684
Tax		\$33,351	\$36,650	\$42,708	\$49,675	\$57,686	\$220,070
Net	\$(50,000)	\$77,819	\$85,517	\$99,652	\$115,907	\$134,601	\$463,496
Baseline (Without Investment)							
Pounds		78,750	82,688	86,822	91,163	95,721	435,143
Net Profit		71,908	75,504	79,279	83,243	87,405	397,338
Effect of Investment	\$(50,000)	\$5,911	\$10,013	\$20,373	\$32,665	\$47,197	\$66,158
Investor	Year, 0	1	2	3	4	5	Total

Inflow		\$12,455	\$20,002	\$21,134	\$22,436	\$23,933	\$99,959
Outflow	50,000						\$50,000
Net	(50,000)	\$12,455	\$20,002	\$21,134	\$22,436	\$23,933	\$49,959

Appendix 2, Scenario 2 - Improvements to logistics through the purchase of a van and leasing of cold storage space.

Company	Year, 0	1	2	3	4	5	Total
Pounds Sold		82,500	90,750	99,825	109,808	120,788	503,671
Revenue		\$577,500	\$635,250	\$698,775	\$768,653	\$845,518	\$3,525,695
Profit Margin Break Even		5.53%	6.31%	5.85%	5.44%	5.06%	
Sales Price to Break Even		\$5.77	\$5.81	\$5.79	\$5.77	\$5.74	
Expense	\$25,000	\$476,048	\$527,509	\$577,765	\$633,046	\$693,855	\$2,933,223
Operations	25,000	451,093	496,202	545,822	600,404	660,445	2,778,966
Sales Staff		-	-	-	-	-	-
Cold Storage Lease		12,500	12,500	12,500	12,500	12,500	62,500
Financing		12,455	12,455	12,455	12,455	12,455	62,275
Royalties		6,353	6,988	7,687	8,455		29,482
Tax		\$30,436	\$32,322	\$36,303	\$40,682	\$45,499	\$185,242
Net	\$(25,000)	\$71,017	\$75,418	\$84,707	\$94,925	\$106,164	\$407,231
Baseline (Without Investment)							

Pounds	78,750	82,688	86,822	91,163	95,721	435,143
Net Profit	71,908	75,504	79,279	83,243	87,405	397,338
Effect of Investment	\$25,000	\$(891)	\$(85)	\$5,428	\$11,682	\$18,759
						\$9,893

Investor	Year, 0	1	2	3	4	5	Total
Inflow		\$12,455	\$18,808	\$19,443	\$20,142	\$20,910	\$91,757
Outflow	50,000						\$50,000
Net	(50,000)	\$12,455	\$18,808	\$19,443	\$20,142	\$20,910	\$41,757

Appendix 3, Scenario 3 - Information and technology plus logistics (Combining Scenarios 1 and 2)

Company	Year, 0	1	2	3	4	5	Total
Pounds Sold		93,750	107,813	123,984	142,582	163,969	632,098
Revenue		\$ 656,250	\$ 754,688	\$ 867,891	\$ 998,074	\$ 1,147,785	\$ 4,424,688
Profit Margin Break Even		7.30%	7.63%	6.80%	6.08%	5.45%	
Sales Price to Break Even		\$ 5.87	\$ 5.88	\$ 5.84	\$ 5.80	\$ 5.77	
Expense	75,000	\$ 550,015	\$ 634,453	\$ 724,009	\$ 826,999	\$ 945,438	\$ 3,755,914
Operations	75,000	512,605	589,496	677,920	779,608	896,550	3,531,180
Sales Staff		-	-	-	-	-	-
Cold Storage Lease		12,500	12,500	12,500	12,500	12,500	62,500
Financing		24,910	24,910	24,910	24,910	24,910	124,550
Royalties		7,547	8,679	9,981	11,478	37,684	

Tax	\$ 31,870	\$ 36,070	\$ 43,164	\$ 51,322	\$ 60,704	\$ 223,132	
Net (75,000)	\$ 74,364	\$ 84,164	\$ 100,717	\$ 119,752	\$ 141,643	\$ 445,641	
Baseline (Without Investment)							
Pounds	78,750	82,688	86,822	91,163	95,721	435,143	
Net Profit	71,908	75,504	79,279	83,243	87,405	397,338	
Effect of Investment (75,000)	\$ 2,456	\$ 8,661	\$ 21,438	\$ 36,510	\$ 54,239	\$ 48,304	
Investor	Year, 0	1	2	3	4	5	Total
Inflow		\$ 24,910	\$ 32,457	\$ 33,589	\$ 34,891	\$ 36,388	\$ 162,235
Outflow 100,000							\$ 100,000
Net (100,000)	\$ 24,910	\$ 32,457	\$ 33,589	\$ 34,891	\$ 36,388		\$ 62,235

Appendix 4, Scenario 4 - Integrating scenarios 1 and 2, implementing an online platform as well as improving logistics. Plus investment into marketing and sales through the development of a brand strategy and hiring of a sales-person

Company	Year, 0	1	2	3	4	5	Total
Pounds Sold		112,500	129,375	148,781	171,098	196,763	758,518
Revenue		\$787,500	\$905,625	\$1,041,469	\$1,197,689	\$1,377,342	\$5,309,625
Expense	Profit Margin Break Even	22.32%	20.69%	18.16%	15.96%	14.04%	
	Sales Price to Break Even	\$6.69	\$6.60	\$6.46	\$6.34	\$6.24	
Expense	\$100,000	\$752,446	\$853,772	\$961,239	\$1,084,827	\$1,226,953	\$4,979,237
Operations	100,000	615,126	707,395	813,505	935,530	1,075,860	4,247,416
Sales Staff		75,000	75,000	75,000	75,000	75,000	375,000
Cold Storage Lease		12,500	12,500	12,500	12,500	12,500	62,500
Financing		49,820	49,820	49,820	49,820	49,820	249,100
Royalties		9,056	10,415	11,977	13,773		45,221
Tax		\$10,516	\$15,556	\$24,069	\$33,859	\$45,117	\$129,116
Net	\$(100,000)	\$24,538	\$36,297	\$56,161	\$79,003	\$105,272	\$201,271
Baseline (Without Investment)							
Pounds		78,750	82,688	86,822	91,163	95,721	435,143
Net Profit		71,908	75,504	79,279	83,243	87,405	397,338
Effect of Investment	\$(100,000)	\$(47,371)	\$(39,206)	\$(23,118)	\$(4,239)	\$17,868	\$(196,066)

Investor	Year 0	1	2	3	4	5	Total
Inflow	\$-	\$49,820	\$58,876	\$60,235	\$61,797	\$63,593	\$294,322
Outflow	\$200,000						\$200,000
Net	\$(200,000)	\$49,820	\$58,876	\$60,235	\$61,797	\$63,593	\$94,322