

The Alaska Market Co-op

The Alaska Market Co-op:

Enhancing the Alaska Food System through
Education, Connection, and Aggregation



The AMBIT Agriculture Plan

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Key Terms:

Food Desert: Rural areas without ready access to fresh, healthy, and affordable foods needed to maintain a healthy diet. *p. 5, 17*

Small Plot Intensive Farm (SPIN): A farming system based on highly productive small-scale farming techniques, primarily highly perishable hand-picked/high tend fruits and vegetables with the potential for a few animals. Size varies between 1-10 acres with earnings per acre between \$5,000-\$10,000 or more. *p. 6, 28, 29*

Medium-scale Organic Production (MOP): A farming system based on organic practices on medium-scale plots. Includes larger mechanized production of moderately perishable crops such as potatoes, carrots and other low tend vegetables, as well as dairy production and meat animals such as beef, hogs, and poultry/eggs and sometimes niche animals such as bison, elk, goats, sheep and yak farmed organically to garner higher value even if the farm is not certified organic. Size varies between 10-25 acres with earnings per acre between \$3,000-\$7,000. *p. 6, 28, 29*

Medium-scale Agriculture Production (MAP): A farming system based on traditional farming methods and the use of artificial fertilizers and pesticides to produce with heavy equipment, minimally perishable crops such as hay, wheat, barley, rye, oats and other cereals. They may also have larger scale meat production with land dedicated to grazing or production facilities for producing poultry and eggs. Size varies between 25-200 acres with earnings per acre between \$1,000-\$3,000. *p. 6, 28, 29*

New Farm Ventures: Newly created farm ventures involving recently trained farmers on raw land that have not heretofore been utilized for farming, nor connected to past farming ventures in Alaska. *p. 6, 33*

Subsistence Enhancement: A process that allows earning potential for the village grower based on crops that can be consumed locally such as tomatoes, cucumbers, peppers, zucchini, rhubarb, and many root crops while also engaging in high value agriculture to bring in revenue. *p. 7*

Rural-stranded Labor Pools: Rural areas completely cut-off from developing economically with unemployment rates that sometimes exceed 50% in rural areas. The remote rural region may be defined as the North Slope, Northwest Arctic, and Lake and Peninsula boroughs and the Wade Hampton, Bethel, Nome, Dillingham, and Yukon-Koyukuk census areas—small communities far away from road and ferry systems. *p. 8*

Distributed Failure: A situation in which the government disperses money into many varied and small projects not properly prepared to succeed. *p. 8, 10*

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Executive Summary:

This plan is the culmination of years of research and of direct application work with farmers in Alaska, such as Tim Meyers of the Meyers Farm in Bethel, Alaska. While it is not a necessity to read the previous research papers in order to understand the reasons behind this paper's conclusions, they are available for reference on www.AMBIT.cc

Alaska is at a crossroad where the vast majority of the food consumed is imported from other states and countries while at the same time Alaskans are in need of good paying jobs, especially in rural areas. It is also a fact that unemployment, alcohol & drug abuse, suicide, food insecurity, food safety issues, transportation costs, and fuel prices have **NEVER** been higher. How will we solve these problems? Just throwing money at any one of these problems may only exacerbate the situation and may even cause the others to have greater negative impacts. The solution must literally be grown from the ground up.

From a human and economic standpoint we must no longer think that these issues will resolve themselves or that the market will correct the imbalances; the state has gone significantly past that point. We have painted ourselves into a corner through subsidizing systems that no longer function for Alaskans and the evidence shows that they never truly did. Through decisions made due to the largess of oil earnings, the state has allowed other economic sectors such as agriculture to lag far behind while using oil revenues to import what is consumed now at a rate of over 97% of all consumption in the state and that includes the products from subsistence hunting and fishing. Anyone can see that this is unsustainable and headed for a significant crash. Dr. Scott Goldsmith of the University of Alaska's Institute for Social and Economic Research has alluded to this fact in many of his research conclusions that we will economically consume all of the budget surplus and eventually the Permanent Fund in the next few years and the state will have to implement a high state tax rate on the populace unless something changes on a significant level. The results of implementing a state tax would be devastating to business and many high earners would leave the state along with their businesses.

Fact: No other economic development sector has as much potential to create rural jobs and eliminate stranded labor pools as well as positively affect the daily lives of Alaskans than AGRICULTURE.

That fact does not even include the positive economic impacts of import substitution and retention of dollars in the state that would otherwise be sent directly to other localities to enhance their economics.

How do we do it? How do we turn things around when the state is at its lowest level of agricultural production **in history**? The following plan lines out the priorities and the steps necessary to not just turn agriculture around, but to make it a net positive economic generator for the state while fulfilling the needs of unemployment, alcohol & drug abuse, suicide, food insecurity, food safety issues, transportation costs, and fuel prices. We must overcome the apathy to ensure that the infrastructure exists to make agriculture economically thrive for those engaged in farming to reach a point of 10% of consumption over the next ten years with an eventual increase to 25% of consumption.

Top 10 Priorities

1. Train New Farmers
2. Accomplish Land Releases
3. Year-round Access to Markets
4. Facilitation of Institutional Purchases
5. Capital Availability for Farm Start-up
6. Low Long-term Payback Requirements
7. Equipment Availability
8. Production Equipment
9. Processing Equipment
10. Access and Infrastructure

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10 Steps to Success

1. Development and delivery of Farmer education...not gardening. (AMBIT has trained 30 new farmers and is ready to train another 50 in the coming year.)
2. Development and ratification of a new "Alaska Farmstead Act" to accomplish land releases based on the needs of Alaskan-styled farms not lower 48 farm models. (AMBIT has drafted this legislation and it is attached in the back of the paper.)
3. Create the Alaska Market Co-op to provide year round access for farmers to their central markets. (AMBIT has already designed the space and the processes to make this happen.)
4. Update the Alaska Preference Statute to include agricultural products. (AMBIT has already drafted a new statute and it is attached in the back of this paper.)
5. A capital pool must be made available for start-up farmers for grants and loans from the State of Alaska for a minimum of \$50,000 for each new farmer.
6. Payback of loans and initial purchases of land must be based on a "ramp-up" methodology where payments are low for the first few years allowing the farmer to get the land into production and begin earning an income.
7. Land preparation equipment must be made available through the Alaska Market Co-op, as it is far too costly for individual start-up farmers to purchase, lease or rent.
8. Farm based production equipment such as rototillers, tractors, and the like must be made available for successful farm start-up due to the high cost.
9. Processing equipment must be part of the Alaska Market Co-op so that a branded product can be made available to institutional buyers in the form of processed Alaskan farm products.
10. The State of Alaska must provide access roads to land releases with stubbed infrastructure such as electricity and others.

The following paper and its attachments discusses in-depth the methodologies and processes in order to accomplish this work, as well as the funding that is needed to make it all happen over the next ten years. AMBIT has tried to make it as comprehensive as possible through accomplishing primary research, interviewing Alaskan farmers, utilizing the previously written plans of other Alaskan agencies, looking and research and best practices of other states and developing primary strategies that work in Alaska.

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I. Introduction:

The current agriculture industry of Alaska has vast opportunities for growth, and yet the utilization of land and opportunities for farmers to grow in the state are severely limited. There are approximately 900,000 acres reserved for farmingⁱ, and yet only 30,772 acres are currently used in food productionⁱⁱ. Due to the lack of production and access to fresh, healthy, and affordable food across the state, all of Alaska is considered to be a **food desert**ⁱⁱⁱ. While the state continues to import 97% of food consumables from out-of-state, the farmers, remote land-dwellers, health of the people, and the Alaskan state as a whole—inevitably suffer.

It is clear that state resources are not being used efficiently. Farmers face harsh start-up business conditions barely making a profit, while there are thousands of acres of designated agricultural land waiting to be released from the state. Furthermore, the existing farmlands are now threatened by being turned into additional housing developments and for recreational uses.

Small businesses and farmers across the state face the worst hardships; they are entering an already difficult industry that is capital and labor-intensive and only bound for failure due to the lack of access to capital and cooperative developments. According to the Alaska Farmland trust, only 4% of Alaska's designated farmland is accessible and viable for farming^{iv}. For the 680 farms that are in existence³, more than half of them are smaller farms, with only 320 farms having incomes greater than \$10,000/year^v. Because of weak market supply and infrastructure in Alaska, it is dismally unsurprising to see why agricultural development is so difficult and why productivity levels per capita have been the lowest since President Roosevelt first brought farmers to Alaska in 1930.

Is this the state of agriculture Alaska wants to be in— one that acknowledges the current self-destructing agriculture industry and will not allow for the proper and necessary changes to be made? The statistics that are presented are just a few of the amply researched evidence that demonstrates urgency for restructuring in the management

of lands and the agriculture industry (also consistently supported by other agricultural policy-advising entities). In the development of this report, AMBIT has researched the Agriculture plans of multiple states from Hawaii to Maine and Washington to Florida to select the best practiced ideas for Alaska.

Fact: No other economic development sector has as much potential to create rural jobs and eliminate stranded labor pools as well as positively affect the daily lives of Alaskans than AGRICULTURE.

There *is* a solution to Alaska's struggling agriculture industry, and that solution directly addresses the infrastructure and market concerns that urgently need attention. The Alaska Agriculture Manufacturing Business Industry & Technology Program, Inc. (AMBIT) is a non-profit 501(c)(3) organization that believes in Alaska and its people for sustaining lasting economic development at the regional and village levels throughout the state. AMBIT seeks to develop a coordinated effort in the creation of a statewide food system. By directly targeting the issue of infrastructure, Alaska's agricultural industry will thrive by developing this statewide food system with localized food hubs that have direct access to an aggregation and production center located in largest population center in the state— that is, the creation of the Alaska Market Co-op. The three key words for Alaska Agriculture are *infrastructure, infrastructure, and infrastructure*.

A co-op of farmers running the aggregation center will allow for centralization and cooperation to aggregate, process, distribute, and streamline fresh and local produce directly to end-consumers as well as institutional buyers. Productivity will increase exponentially while allowing small farms to thrive, opening up many new emerging markets for agritourism and local produce. A bolstering of the state's internal agriculture industry through the form of an aggregation center will make the state stronger in all forms of food security, supporting the agriculture industry, the community and consumers, and viability of the state.

Currently, the value of the Alaskan agricultural market is approximately \$30 million with less than \$10 million vested into growing vegetables and potatoes^{vi}. Of the approximate 30,000 acres of land currently in production, two-thirds of that is used for hay—a product mostly used for dairy farms, cattle ranches, and recreational horse ownership maintenance^{vii}. In order for the industry to be

ⁱ Note that there was originally 15-18 million acres estimated to be arable.

ⁱⁱ Food desert defined as rural areas without ready access to fresh, healthy, and affordable foods needed to maintain a healthy diet.

³ USDA defines farms as a place from which \$1000 or more agricultural products were produced and sold.

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stable, there needs to be at least 3,000 farms in business, utilizing at least 150,000 acres of land.

AMBIT has a set target for 10% local food production levels within the next ten years with an eventual goal of 25% in order to sustain immediate food security in Alaska. 25% is the prime target for sustaining food security because there is enough food being locally produced at this level to provide for the state should any emergencies occur. For example, once the state sustainably reaches 25% of local consumption, the amount of production can rapidly increase during a time of food supply constraints to meet 50% of local consumption, while also reducing consumption rates to balance appropriate need and production. This is currently a \$7.5 billion market, which if refocused can create and strengthen thousands of sustainable jobs while supporting Alaska's whole agriculture industry.

The vast majority of the designated agricultural acres are not suitable for large-scale farming such as what is done across the Mid-Western lower 48 states. However, that is not necessarily the best fit for agricultural production in Alaska. Varied soil types, access to water, sunlight factors, weather patterns, and the short growing season are all factors that make Alaska much more suited to three types of small family farms: Small Plot INTensive, Medium-scale Organic Production, and Medium-scale Agriculture Production farms.

Small Plot INTensive (SPIN) farming focuses primarily on perishable hand-picked/high tend fruits and vegetables with the potential for a few animal products. High and low tunnel greenhouses are very important for longer season production, along with spot irrigation or watering and underground frost-free root cellars. This size farm is normally 1-10 acres. Earnings per acre will range depending on farm practices, production efficiency, and farmer effort between \$5,000 and \$10,000 or more.

Medium-scale Organic Production (MOP) farming focuses on larger mechanized production of moderately perishable crops such as potatoes, carrots and other low tend vegetables. Furthermore, these farms have potential for dairy production and meat animals such as beef, hogs, and poultry/eggs and sometimes niche animals such as bison, elk, goats, sheep and yak, farmed organically to

garner higher value even if the farm is not certified organic. Greenhouses may be used but they are not the focal point of production. Irrigation is on a broader format as well as underground frost-free root cellar storage. This size of farm is normally 10-25 acres. Earnings per acre will range depending on farm practices, production efficiency and farmer effort between \$3,000 and \$7,000.

Medium-scale Agriculture Production (MAP) farming, which focuses on traditional farming methods, use artificial fertilizers and pesticides and produce with heavy equipment minimally perishable crops such as hay, wheat, barley, rye, oats, and other cereals. They may also have larger scale meat production with land dedicated to grazing or production facilities for producing poultry and eggs. Greenhouses are usually not utilized for this level of production and irrigation, if used, is mobile or circular. Most storage is accomplished above ground. This size farm is normally 25-200 acres or more though a few farms in Alaska are larger than a section (640 acres) which is traditionally the farm size down in the lower 48. Earnings per acre will range depending on farm practices, production efficiency, and farmer effort between \$1,000 and \$3,000.

Most large production farms in the lower 48 consist of thousands of contiguous acres with similar soil types and very few areas in Alaska to conform to that model.

Much of Alaska is not suitable for farming. The areas that *are* suitable have varied soil types even within a single acre and water shed or drainage may be different in the next hundred feet. This makes large-scale farming unrealistic for the most part as resources to accomplish it in this environment would be too costly, preventing the farm from ever achieving a profit margin. Still, that is not the only factor standing in the way of a potential farm becoming successful in Alaska. AMBIT created a short test to determine the likelihood of these **new farm ventures**, or newly created farms starting from raw land, in order to help gauge their ability to reach a profit over time.

The test is known as the Alaska High Latitude Production Potential Index Score. It has six basic variables gauged on a Likert scale of 1-5 where *1=very poor 2=poor 3=neutral 4=good and 5=very good*. This allows for a judgment against the variables of "Distance to supply hub or market,"

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“Water availability & quality,” “Soil operability & quality,” “Current state of land prep,” “Energy access & cost,” and lastly “Physical access.” This scale then ranks the potential farm and a score of less than 18 (numerical average) is a risky venture; the lower the score the higher the risk.

This formula can also be used for existing farms as our research has shown through a box plot of land costs that it costs approximately \$10,000 per acre to purchase and prepare for farming. If the land is raw it is cheaper to purchase but more expensive to get into production. This means that for a SPIN farm it will cost between \$10,000 and \$100,000 to get the land into production, MOP farm will cost between \$100,000 and \$250,000 and a MAP farm will cost \$250,000 to well over a million dollars. This does not yet account for the cost of equipment that is needed to prep and work the land such as logging trucks, bulldozers, tractors, and implements that for the individual farmer are usually out of reach, or housing and infrastructure costs.

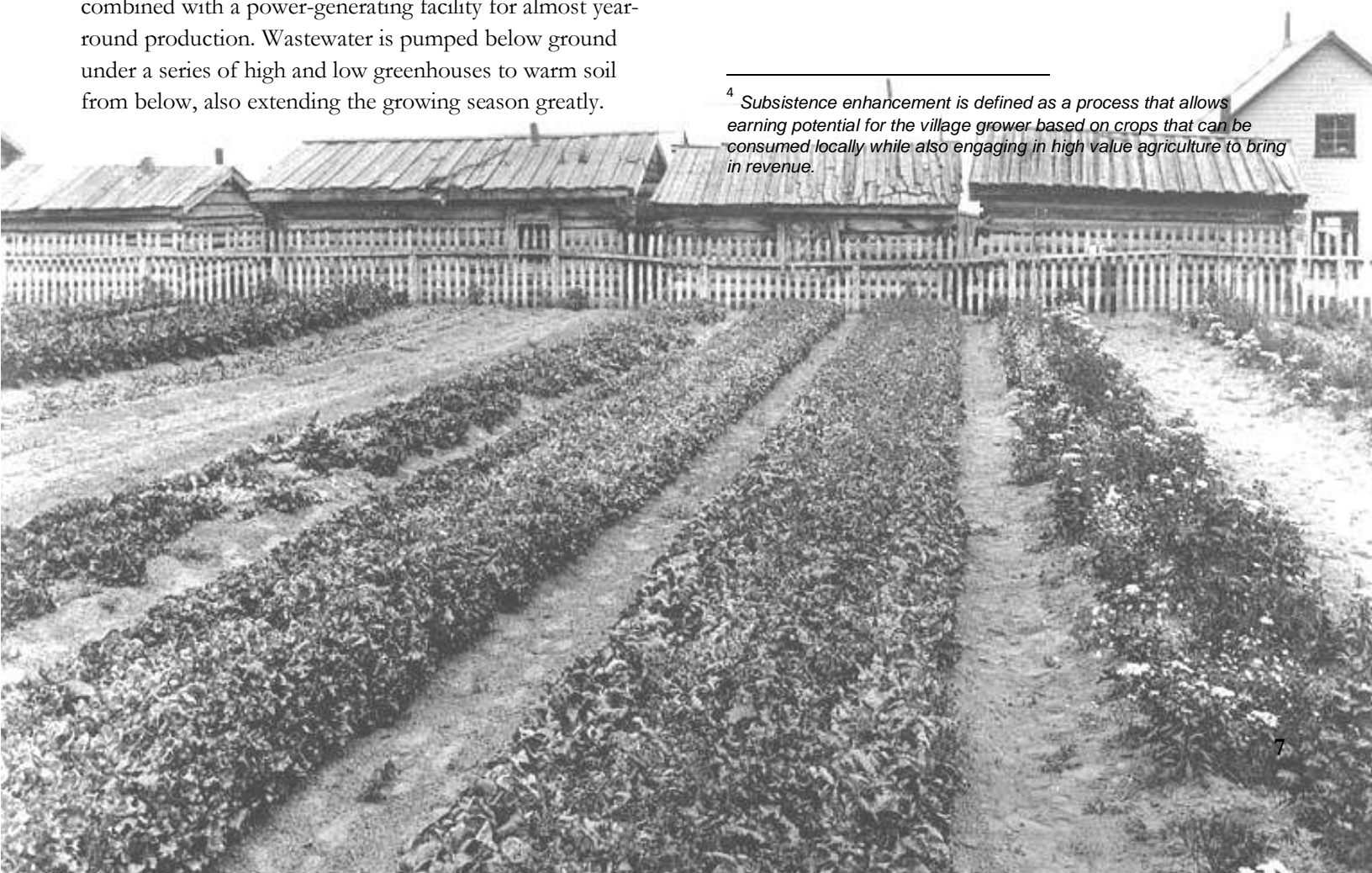
SPIN and MOP farms are also best suited for rural village production, especially in a CO-Gen design where waste heat is blown in an insulated greenhouse from a washateria combined with a power-generating facility for almost year-round production. Wastewater is pumped below ground under a series of high and low greenhouses to warm soil from below, also extending the growing season greatly.

With the high cost of fuel for heat, one of the greatest challenges of greenhouse utilization in rural areas [see attached CO-GEN design], now overcome, rural villages can grow much of their own vegetables and store surplus in underground storage. Village-based farms can also utilize extra food grown in trade systems in surrounding villages, hub communities, and potentially the greater Alaskan food system—especially through aggregation of local specialty crops such as: rhodiola, ginseng, wasabi, horse radish, peonies, and others to be shipped and processed in a centralized facility.

This allows rural villages to engage in value-added production while also meeting local food needs that often unfulfilled due to the high costs of shipping and the extreme spoilage rates that often exceed 40%. This drives a **subsistence enhancement** process⁴ that also creates earning potential for the village grower based on crops that can be consumed locally such as tomatoes, cucumbers, peppers, zucchini, rhubarb, and many root crops while also engaging in high value agriculture to bring in revenue through growing some of the crops mentioned above.

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⁴ *Subsistence enhancement is defined as a process that allows earning potential for the village grower based on crops that can be consumed locally while also engaging in high value agriculture to bring in revenue.*



II. The Visions of AMBIT:

For the Agriculture Industry

The commercial sector of the agriculture industry is **economically viable** and has **long-term sustainability**. What does this mean?

The creation of the Alaska Market Co-op, an aggregation center run by Alaskan farmers to aggregate, process, distribute, and streamline products directly to end-consumers and institutional buyers.

Small farmers will no longer face lack of access to markets or infrastructure as a challenge to succeeding in the industry. **Rural-stranded labor pools**, rural areas completely cut-off from developing economically⁵ with unemployment rates that sometimes exceed 50% in rural areas^{ix}, no longer exist. This will result from the opening up of agricultural land that has been designated specifically for farming to be easily given to potential farmers; the small farmers' will to succeed shall not be impeded by the infrastructural deficiencies of the agriculture sector in Alaska.

New markets will emerge, allowing for innovation in science and technology to push for further efficiency and value-added products. This includes agritourism and the commercially viable fish-waste fertilizer. Through the creation of 500 new farms, farming 25,000 new additional acres, food-stuff production can reach 10% of total Alaskan market consumption with an eventual goal of providing for 25% of locally grown food in the Alaska food system.

For the Community & Consumer

The community and consumers will support the local agriculture industry of Alaskan-grown produce and consumables. By having easier access to food with the aggregation center, this will eliminate the 2-week minimum for shipping food (although in rural areas, food can be in shipment for up to a month). This will remove expensive transportation costs for shipping and food spoilage rates as high as 40% for consumers—a huge pressing issue with Alaskans living in rural communities^x. Ultimately, all the produce will be fresh and come from small farms, hardly touched by pesticides and invulnerable to diseases from produce as seen in the lower-48.

With Alaskan-grown products in schools, education about healthy nutrition and local produce will empower students to have a healthy diet, alleviating health risks such as obesity, depression, and suicide.

For the State of Alaska

The state of Alaska will no longer remain the neo-colonial economy that exists, currently importing as much as 97% of consumables from external agricultural suppliers and maintaining a short-term supply of food for a mere 3-5 days. Import substitution will take place in the agriculture industry, strengthening the Alaskan economy.

Land management will work with farmers and land-owners for the release of land that has been designated for farming purposes. The land in this state will be used efficiently, sustainably, and utilized to address one of the primary issues of the state—food security.

The well-being of Alaskans will increase, with healthy food more widely available- addressing priorities of the Alaska Food Policy Council, promoting nutritional education and access to local, affordable, healthy produce in school^{xi}, therefore helping to alleviate the number of suicides, alcoholism, and obesity in the Alaskan population^{xii}

Distributed failure, where the government disperses money into many varied and small projects not properly prepared to succeed, will no longer occur, as a viable and long-term plan will be implemented with the Alaskan Market Co-op.

The rural population will no longer be a net-emigrating entity, going into urban areas as a means for finding work. Between 2000 and 2006, the Alaska Department of Labor estimated that 3% of the rural populations decreased while the population in Anchorage increased by 25%^{xiii}. This is due to the lack of jobs available in the remote areas. The Alaska Market Co-op will give small farmers and communities in rural areas the opportunity to sustain rural living while having business thrive, therefore stopping net outflow of migration and bringing people back into the rural agriculture areas.

Ultimately, small farms and the people of Alaska will have increased their well-being, adding to the strength and capability of the great Alaskan state.

⁵ The remote rural region is defined as the North Slope, Northwest Arctic, and Lake and Peninsula boroughs and the Wade Hampton, Bethel, Nome, Dillingham, and Yukon-Koyukuk census areas—small communities far away from road and ferry systems.

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(Above: Pictures from a local village community farm, an AMBIT project yielding promising results where the village was able to utilize solar energy, gravity feed irrigation, and local nutrient sources/materials from the sustainability plan)

III. The Difficulties that Persist:

Historical Background of Alaska

Alaska's history being the 49th state of the United States is relatively short and yet holds a rich history. The cultural make-up of the land, one in which subsistence farming of the Alaskan Natives was the predominant form of agriculture, and extreme weather conditions make the state's agriculture industry unique and challenging in comparison to the lower 48. Nevertheless, it is due to the short stunts of quick success in land expansion and the gold rush that add to unique characteristics of Alaska that consequently created a lack of development in the agriculture sector.

As more non-Natives came to the land, making the Alaskan population deviate away from traditional subsistence farming of Alaskan Native practices, importing goods became increasingly popular. With the low prices of fuel and industrial/technological boom in the 20th century, much of the income and investments became concentrated into urban areas and industrialization—despite there being about 15 million estimated acres suitable for farming^{xiv}.

Because of constant importing, the concentration into these urban areas from non-native Alaskans perpetually created a neo-colonial economy with investments flowing outward, never having enough incentive to build or maintain any infrastructure for the agricultural community

since fast, new money came from other sources. What the rural community and small farmers are experiencing now, however, are the repercussions that are making the whole state vulnerable and completely food insecure and negligent of the rural community needs.

As many small farms and businesses have closed due to lack of demand and business due to consumers relying on cheaply imported commodities, the fuel costs now have sky-rocketed to the point where the reliance on imports can no longer be feasible and there are no local farms available to turn to for a cheaper alternative since most have all closed down. Of the small farms and existing lands designated for farming, most plots cannot even be accessed by road. Local farmers throughout Alaska noted that a crucial challenge to overcome on part of the farmers include proximity and lack of access to roads and waterways for distribution and access to markets; though there are supposedly hundreds of thousands of acres currently ready for farming and surveyed by the Agriculture census, many of those are not functioning because of the lack of road systems—this can easily be resolved with adequate cooperation and planning if addressed directly.

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The federal government has, in fact, tried many times to intervene to spur agricultural development. However, these projects, such as the Delta project and Point Mackenzie where the government tried to sustain a barley and dairy industry^{xv} never succeeded long-term.

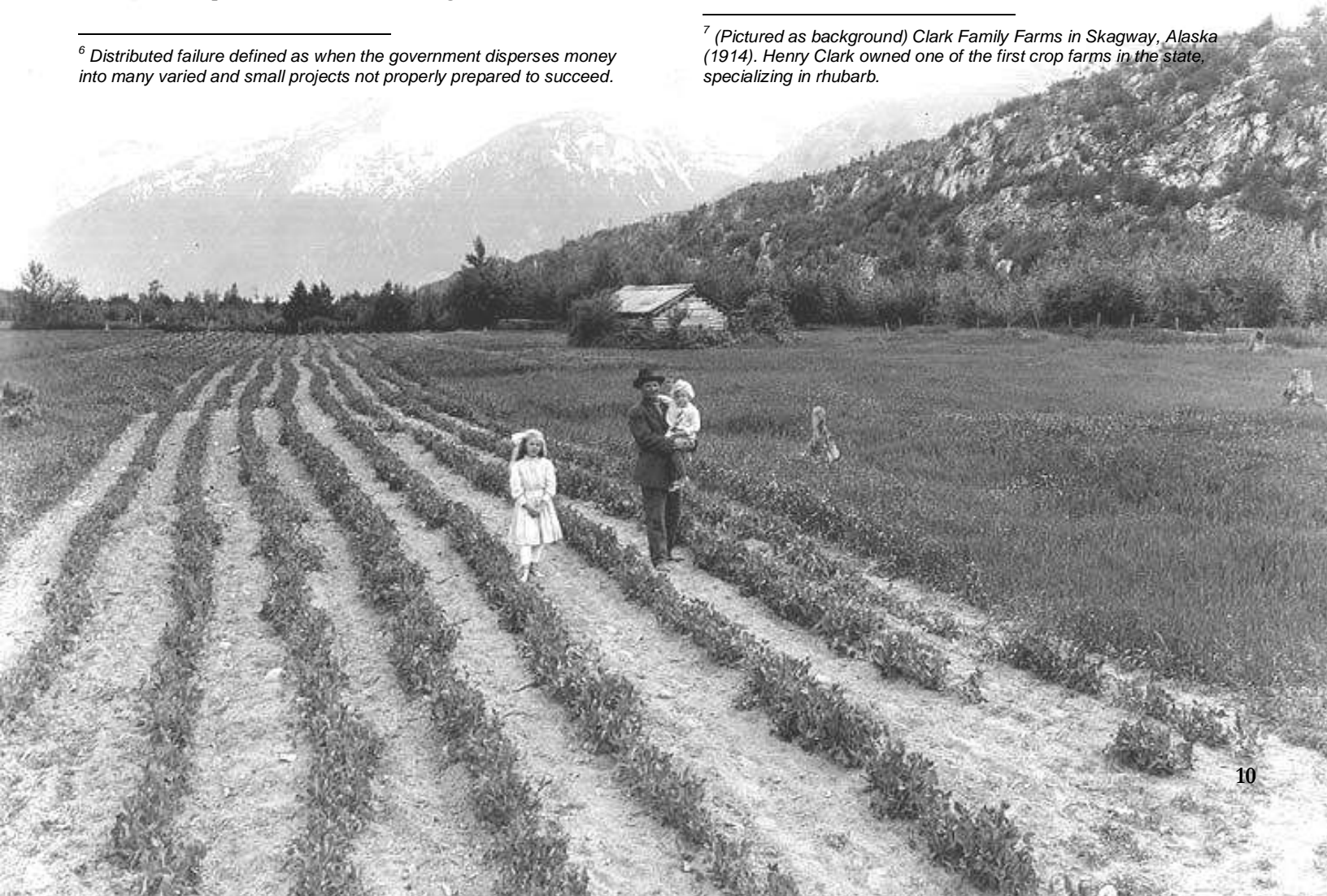
These projects were always handed-off to ill-prepared management that never saw the agricultural development projects as long-term businesses but rather a short-term plans, not taking into account the unsustainable nature of handing out subsidies to farmers without allowing them to create a stable foundation independently; these investments into many small ineffective projects is known as **distributed failure**⁶. For example, of the dozens of dairy farmers trying to succeed in this state, only three now exist in South Central Alaska.

It seems as if the trend has now shifted into a niche market of small-farm producers^{xvi}, rather than target larger-scale production, which has led Alaska to the point that is seen now. For instance, greenhouse operations have flourished from efficient production of flowers, vegetables, and other

plants that benefit from Alaska's unique growing environment. However, Alaska is far from having any organized and sustainable agricultural cluster's anywhere throughout the state. Alaska is dotted with farms and growing operations that typically have a life expectancy of less than 2 years before they are either entirely dismantled or turned into private use for personal subsistence. In order for the industry to succeed, there must be less chaos in the agriculture industry and cooperation is imperative among small farmers^{xvii}. There is much potential to still have the local Alaskan-grown produce that is now demanded in the niche market, but at the same time also developing the large institutional-purchasing market within the state, utilizing hospitals, school, and prisons that would all benefit from local Alaskan-grown products. ^{7 xviii}

⁶ Distributed failure defined as when the government disperses money into many varied and small projects not properly prepared to succeed.

⁷ (Pictured as background) Clark Family Farms in Skagway, Alaska (1914). Henry Clark owned one of the first crop farms in the state, specializing in rhubarb.



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Figure 1:

Why is Food Security Important for Alaska?	
Failing Agriculture Industry	Agriculture in Alaska is one of the most neglected industries with the most potential
Transportation	Alaska imports 97% consumables. The state is dependent on these imports
Spoilage Rates	Produce can be in transit for up to one month, farm-to-table in rural areas .Up to 40% spoilage rates for produce shipped to rural areas
Natural or Human-Induced Disasters	According to the Farm Bureau, if our food shipments were disrupted Alaskans would only have 3-5 days worth of food on the grocery store shelves before they became empty.
Energy Costs	Fuel costs increasingly expensive; There are no back-up plan if oil supplies become severely limited

⁸ (Pictured above) Spring Creek Dairy Farm in Matanuska Valley in 1960, once one of the most productive dairy farms running in Alaska.

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Reports on the Farm— *Lacking market access & infrastructure*

In order to mitigate repeated problems of the past, the issues of the farmers must be directly addressed. AMBIT wanted to hear what the farmer's had to say themselves so over the course of one year, over 50 small farms were interviewed throughout Alaska to see what challenges the farmers faced both short-term and long-term. These small farms include community and commercial farms in the regions of Copper Valley, Delta Junction, Fairbanks, Kenai Peninsula, Kodiak, South-central, Southeast, and Southwest Alaska.

“What Alaska needs [are] farmers, not gardeners. And to be a success as a part of the envisioned goal of eventual state food security, that demands that the prospective farmer absolutely must have a good tractor and a number of attachments in order to be sufficiently productive (tons per acre from many acres)...Many prospective farmers have neither the funds nor the credit to make a large investment in labor saving equipment to achieve high productivity”

---Jim Scott, participant of Meyer Farm visit in Bethel, AK (July 22-24, 2012)

A majority of these farmers are lacking an access to outside markets; the ability and means to reach end-consumers easily is imperative. Examples of how they were lacking access to a market include the fact that low cost market access for farmers year-round does not exist, and there are no roads to state-identified agriculture lands.

In regards to the resources they were lacking, it includes: inefficiencies on farm costs, not having any water for irrigation systems, no weather monitoring stations/baselines on each production area, accessibility to new and existing land (therefore thwarting efforts to start new farms or expand), high cost of equipment, no training programs in business and farm succession planning, no long-term storage or large freezers, lack of insurance & seasonal labor, no commercial banks in AK finance farms, limited knowledge of labor laws, lack of aggregated contacting, and a need of a master list of gen. species for farmers.

The farmers interviewed agreed that there is a general consensus that certain machinery investments are needed in order to reach out to enhanced markets for increased sales, such as: French-fry cutters, tater-tot extruders, bag & seal systems, flash-freezers, a juice line, and can line. It is the inability for farmers to have access or maintain these types of systems that hinders the farmers' ability to compete against larger companies for institutional sales—even when the institutions are in Alaska and *seek out* local

goods, however must resort to out-of-state importing only because it is not commercially viable here yet.

One of the main food safety and security issues is food storage. Many Alaskan-grown products suffer spoilage due to lack of facilities to preserve and house them. A single facility to maintain Alaskan's vegetables and other produce is a necessary part of ensuring those products make it to market.^{xx}

Last Spring, a report was put out in a senior thesis in which a PhD candidate surveyed farmers in the Tanana Valley. He found evidence which further supports the idea that organization is much needed in this agriculture industry. His results show that 84.2% of farmers in that area reported that most of their household income comes from off-farm employment in order to maintain their lifestyles as farmers^{xxi}--clearly showing the deficiencies of being a farmer here in Alaska for a lifestyle and profession that should be ultimately having high returns.

In the same survey, the farmers were asked what constraints they faced for expanding their farm or business in Tanana Valley. The top five responses were: *I do not wish to expand my farm/business, access to capital, crop storage availability, on-farm infrastructure availability (e.g., hoop houses, greenhouses, low tunnels, chillers), and labor costs*. Other significant constraints reported by many include those imposed by fuel costs, transportation/shipping costs, and electricity costs^{xxii}.

The Alaska Market Co-op

Their report similarly yielded the same outcome as AMBIT's. In the end, many of the agricultural problems with small farmers are access to capital, crop storage

availability, infrastructure, and transportation: all challenges that can be alleviated with an aggregation center and co-op described in this proposal.

Addressing and Overcoming Challenges for Small Farmers in Alaska

Figure 2:

Challenge for Small Farmers	Solution with the Alaska Market Co-op
Lacking Access to Internal & External Markets : <ul style="list-style-type: none"> No access to market year-round No roads to state-identified agriculture lands Expensive transportation/shipping costs 	<ul style="list-style-type: none"> Farmers are able to share ideas, market collaboratively, create standard points of sale for a particular product or product type, and allow farmers to invest their earnings and/or value into the co-op fund, generating greater eventual profits for the fund and for the farmer. A petition for the state will create a land release program, specifically targeted at new farmer and under-updated practice rules transportation/shipping cost s substantially eliminated
Lacking Infrastructural Resources on the Farm <ul style="list-style-type: none"> No water for irrigation systems high cost of equipment, No crop storage availability Difficult to access new and existing land for expansion 	<ul style="list-style-type: none"> Infrastructure, such as common roadways and equipment will be created and shared Cooperation and centralization means more productivity and less waste with systems; more money to be spent on vital equipment/labor , compared to struggling as independent small farmer streamlining demand for produce to hubs will target end-consumers more directly
Lacking Infrastructural Resources off the Farm <ul style="list-style-type: none"> No weather monitoring stations/baselines on each production area No commercial banks in AK finance farms 	<ul style="list-style-type: none"> Building common roadways, streamlining demand for produce to hubs, working with state for release of land
Lacking educational/intellectual Resources: <ul style="list-style-type: none"> No training programs in business and farm succession planning Inefficient farming practices Lack of insurance & seasonal labor Limited knowledge of labor laws Lack of aggregated contacting In need of master list of gen. species for farmers 	<ul style="list-style-type: none"> Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their cooperatives. Resources include food safety practices, training programs, labor laws, and efficient farming practices.
Farming Equipment & Processing Needed <ul style="list-style-type: none"> French fry cutters Tater tot extruders Cold storage facilities Freezers Tractor Farming Implements 	<ul style="list-style-type: none"> Investment in necessary equipment for large-scale institutional sales Creation of a food commodity warehouse for large storage and food security
Food Safety Concerns <ul style="list-style-type: none"> Cold storage facilities Freezers Lack of understanding of safety laws 	<ul style="list-style-type: none"> Centralization of safety regulations so it will be more consistent and effective Shared education and training on food safety

The Alaska Market Co-op

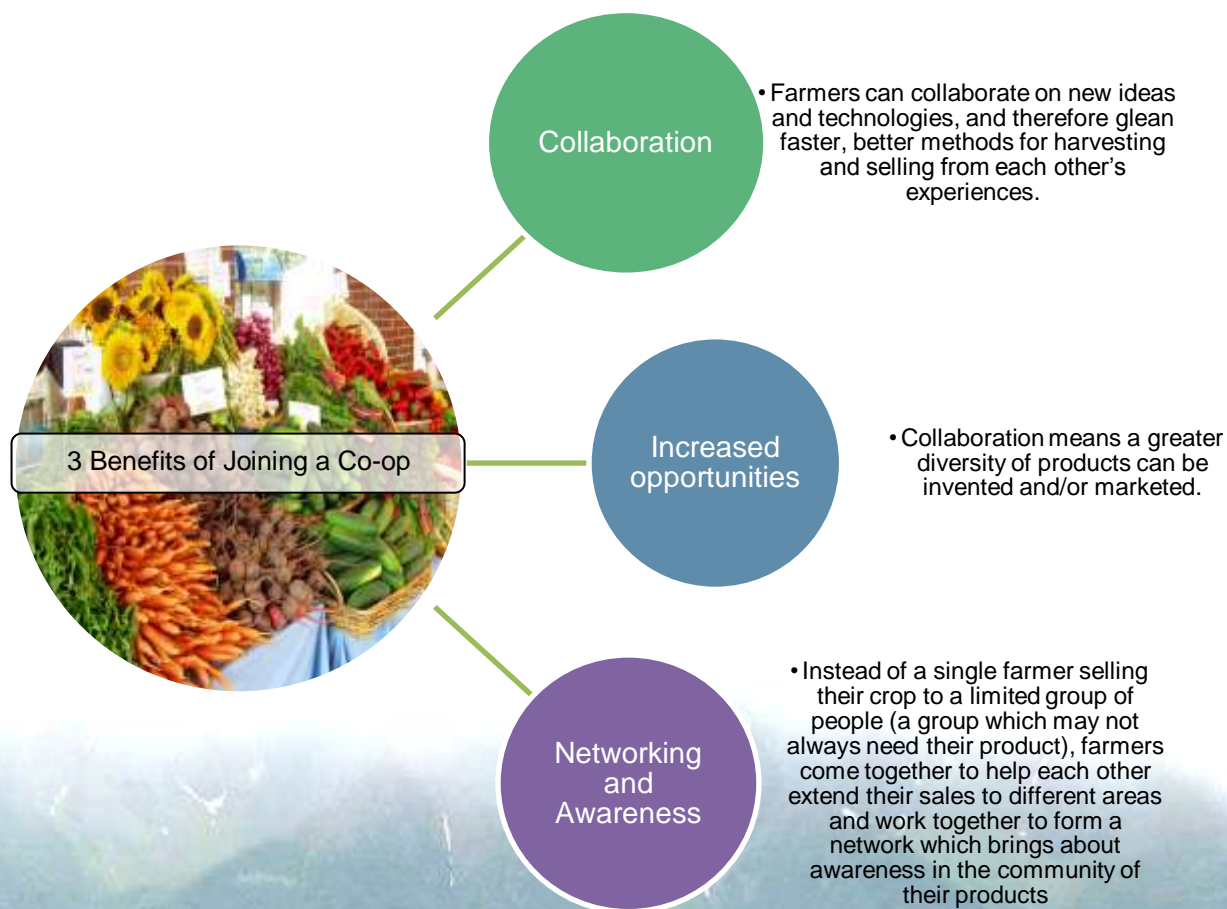
IV. Solution: The Alaska Market Co-op

Benefits

By setting up an aggregation center and farming cooperative, there will be many benefits that will positively affect the agriculture industry, the community & consumers, and the whole state of Alaska: strengthening of small-business viability, new potential markets, food quality & safety, and a healthy, locally-conscious consumer-base.

Figure 3:

Benefits of a Cooperative versus Traditional Marketing



The Alaska Market Co-op



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Strengthening Business Viability

Primarily, the aggregation center will address most of the issues raised by farmers, thereby naturally increasing access to markets and resources by just being a cooperative in itself. The Alaska Market Co-op would have production capabilities that currently do not exist in the state of Alaska. It would allow farmers to share ideas, market collaboratively, and create standard points of sale for a particular product or product type. Also, it would allow farmers to invest their earnings and/or value into the co-op fund, generating greater eventual profits for the fund and for the farmer.

The co-op seeks to strengthen and improve this industry to assist current farmers, and also the future farmers to come. The Alaska Market Co-op will help create 500 new farms, farming 25,000 new additional acres so food-stuff production can reach 10% of total Alaskan market consumption. The modeling of a farming succession plan, farming-business incubator, and Alaska Farmstead Act will allow this to happen.

Farmers in Alaska are declaring bankruptcy at an alarmingly high rate. Farmers cannot afford to compete with imported products packed onto the shelves of retail giants like Wal-Mart and Safeway, and they cannot afford to make their operations more efficient because they cannot invest in their own success. Farmers in Alaska cannot afford to continue to operate on their own; they

must have an organization to help them out in the lean times and to provide resources, ideas, technologies and reinvestment opportunities, so that they can make their farming operations feasible and profitable.^{xxiv}

A cooperative and aggregation center would allow small farmers to finally have direct access to the public, reaching end-consumers and institutional buyers all in one place. With co-op's large-scale aggregation capabilities and cold storage/freezer devices, there will be direct sales to the public year-round.

As stated before, there is a small niche market towards local farmers and Alaskan-grown products. With greater access to the market and organization, more of this fresh and highly demanded local produce can be more easily available for the greatest number of end-consumers. A majority of retailers reported a willingness to pay 5 to 10% more for locally grown produce with two saying they would even pay 20% more for local produce. In determining whether they would pay more some mentioned that it is hard for the local farmers and greenhouses to be competitive with price but make up for it with quality and longer shelf life^{xxv}. Now, with the aggregation center eliminating the long distance shipping (taking at least two weeks to get to Anchorage and as much as one month for the interior) and increasing fuel costs, the freshness of the produce can be available on a large-scale and for a more affordable price than what currently stands now if production capabilities succeed.

The demand for local produce goes even higher if it is organic, thus proving to be a strong value proposition with this new, accessible market for healthy produce. If proper sustainable farming techniques and investments are made, then small-scale intensive farming allows for premium organic farming practices to be utilized, holistically caring about the vegetable/meat produced ethically and knowingly to the market, as well as sustainable for the environment. For example, co-op investment into a mobile slaughterhouse would make it easier for rural farmers to slaughter the meat without the usual stress that comes from long-distance driving needed to reach the one USDA certified slaughterhouse in the state.

The Alaska Market Co-op



Institutional buyers will also be present as a strengthening of the agriculture industry, thereby increasing large-scale sales from the small farmers that would otherwise not have this opportunity to collaborate and engage in this market. Institutional-buying entities would include schools, hospitals, and correctional facilities. According to an aggregation center study

completed by AMBIT where two interviews were done with representatives of Providence Hospital, Department of Corrections, and Anchorage School District, all institutions declared interest and support in purchasing Alaskan-grown produce^{xxvi}. The different types of institutions all purchase their produce on different levels, some bidding for the lowest price, while others being strict on quality control. Nevertheless with increased quality and lower prices on produce, the development of the Alaska Market Co-op will satisfy the two determinants for institutional buying while simultaneously putting money back into the state economy.

One prime example of a real-life institutional buyer that was interested in purchasing Alaskan-grown products was the Fairbanks School District. In 2010 they sought to purchase \$2 million worth of Alaskan-grown potato products in the form of French fries and tater tots. Despite their interest and attempts to secure this purchase, the failure of this project rested on the fact that there neither were farmers in the state of Alaska had enough potatoes to produce this high quantity, nor were there any that had the French fry cutters, tater tot extruders, or flash freezers necessary to produce and package the products.

What is surprising about the failure of securing that purchase is that potatoes are actually an incredible crop for the Alaska farm because they are relatively easy to grow and have a high yield per square foot. They also store well through the year and can be prepared in many different ways^{xxvii}. There are, in fact, several thousand potato varieties found throughout the world, and many are adapted to thrive in the Alaska climate. Because the

vegetable itself can successfully grow in this region, potatoes would be a great start for the Alaska Market Co-op to show success so that institutional buyers can actually make this a viable product to have in their schools, hospitals, and correctional facilities.

Through the creation of 500 new farms, farming 25,000 new additional acres, food-stuff production can reach 10% of total Alaskan market consumption with an eventual goal of providing for 25% of locally grown food in the Alaska food system. A leading model for these 500 farms will be the development of a farm-business incubator, along with farm succession plans. Thus, this will lead to the increase of jobs in the agriculture sector, also strengthening the advancement of farming education and cooperation and getting agricultural field workers prepared for the industry.

New Potential Markets



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With cooperative investments into specific machinery and value-added production capabilities, from French fry cutters to vegetable juice production, there will be an increase in productivity and the ability to create new year-round markets. In addition to value-added potentials, markets like agritourism are expected to flourish as well with a location in which tourists can go can take factory and farming tours, dine at eateries, and make it a family-

⁹ *Rhubarb juice stands as a promising value-added product in potential markets in the Alaska Market Co-op*

The Alaska Market Co-op

oriented tourist attraction, similar to Pike's Place Market in Seattle, Washington. This center will run with the best qualities of the top successful markets and implement this co-op specifically on an Alaskan scale.

There is also the need and ability to utilize the fish waste coming from Alaska's developed fishing industry. The Alaska Market Co-op could easily introduce organic fertilizer into the market using the fish waste, making it a potentially commercially viable product while satisfying the high demand for organic produce in Alaska. Fertilizers would be highly desirable product for the aggregation center as both a product for utilization and sale. The fertilizer made from Alaska fish waste in the form of hydrolysate offers plant growers high quality substitutes especially rich in nitrogen^{xxx}. A Boston-based investment firm, Gurry Investments, already uses its technology to produce this kind of organic fertilizer, which has proven to be beneficial since selling organic fertilizer can be sold for as much as four times the amount as fish meal or fish oil.

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Last year, Trident Seafoods was fined \$2.5 million by the Environment Protection Agency (EPA) for multiple violations of the Clean Water Act, mainly illegally dumping fish waste into national wildlife refuges and creating dead zones in marine waters by discarding fish waste in piles on the sea floor of up to 50 acres in size^{xxxi}. In the year 2000 85% of the 1.0 million metric tons of fish waste produced in Alaska was discharged offshore. This type of pollutant, though "natural," still can affect surrounding ecosystems by changing natural chemical levels and affecting food chain relationships. Rather than watching resources be underutilized, there can actually be a newly created market in Alaska to benefit from this product by using the fertilizer to grow organic produce. Clearly, there is a way common byproducts of the fishing industry can be transformed and turned into positive effects for the agriculture industry, so long as there is the appropriate infrastructure and market to support it—that is, the creation of the Alaska Market Co-op.

Food Quality & Safety

A main priority of consumers is that their produce bought and consumed is food safety. Understandably, public institutions declare food safety is one of their biggest

concerns as well due to the nature of their large-scale purchases. It is without a doubt that a more centralized climate among farmers will allow for more alignment with health and safety regulations. A USDA Rural Development Feasibility Study stated that aggregation centers would be beneficial for food safety because they would provide farmers with a reliable distribution system, facilitating connections with landowners and other organizations involved in land acquisition and education around standardization requirements for size, packaging, quality and maturity, and food safety^{xxxii}. Furthermore, this would greatly promote education on food safety practices and regulations, especially for the small farmers that might not be too familiar with the system.

In regards to food quality, the produce and crops grown in-state will always be more demanded if the transportation time and expenses are factored in. Furthermore, the absence of corporate farms in the state allows for more organic and/or locally conscious family farming practices that would not be present in larger farms in the lower 48. The Alaska Center for the Environment reports that chances of diseased and insect-infested foods are essentially non-existent in the farms of Alaska because of the history of small-scale farming^{xxxiii}. However, Alaska currently does not have the pest or mold problems associated with enormous farms in the Lower 48.

Healthy and Locally-Conscious Consumer Base

It is without a doubt that the community and consumers would benefit from the Alaska Market Co-op. Highly demanded local produce would finally be easily accessible and at more affordable rates, thus eliminating Alaska's status as a **food desert**¹⁰. People across the state would be able to maintain healthy diets, thereby increasing their overall quality of health¹¹. The State of Alaska Department of Health and Social Services reports that 66% of Alaska's adult population is either overweight or obese and four of the top 10 leading causes of death in Alaska, cancer, heart disease, stroke, and diabetes, are diet-related^{xxxiv}. By having more fresh and local produce available, combined with

¹⁰ Food desert defined as rural areas without ready access to fresh, healthy, and affordable foods needed to maintain a healthy diet.

¹¹ Addressing the health of Alaskans through healthy food access will fulfill the Alaska's Food Policy Council's priorities.

The Alaska Market Co-op

nutritional education in schools, this health concern can be addressed and improved—especially to those living in rural communities.

The USDA Rural Development Feasibility Study reported that having locally-grown foods in public institutions like K-12 schools would greatly benefit the health of the community. The schools would not only have the local produce available for consumption, but they could also integrate it into education about agriculture, sustainability, and how local farmers are important to the community. With additional support from the farming co-op with field trips regarding agritourism and direct access to the farming process, the co-op would be a more direct way to promote health and nutrition for the community.

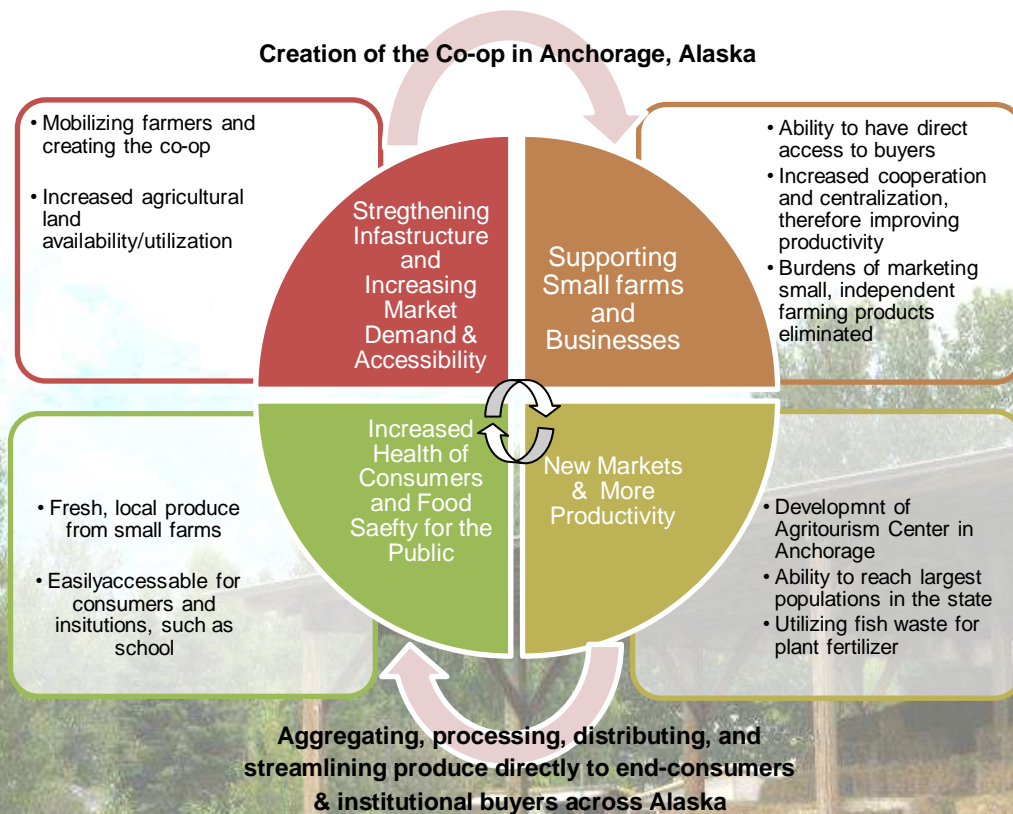
Currently, the USDA is pursuing a nationwide effort to strengthen local and regional food systems through the *Know Your Farmer, Know Your Food* (KYF2) program. The Alaska market Co-op would fulfill the program's objectives of fostering more educated and empowered community of consumers, promoting locally produced

food, and demonstrating the connection between food, agriculture, community, and environment.

The rural population would among the top groups of people benefitting from increased access to healthy, affordable food. Dwellers of these remote locations suffer from extremely high rates of alcoholism, depression, and suicide, and the type of diet they have plays a crucial role in that. According to the Alaska Statewide Suicide Prevention Council, Alaska has the highest rate of suicides per capita in the country with 21.8 suicides per 100,000 people on average in Alaska, compared to the national average of 11.5. What is even more astounding is that it is 35.2 per 100,000 suicides among Alaskan Natives. Researchers attribute the rise in suicide and rural substance abuse to the negative effects that come with poor economic standing, including poor nutritional habits and health maintenance^{xxxv}. With healthy food more widely available, it will surely alleviate the number of suicides, alcoholism, and obesity in the Alaskan population^{xxxvi}

Effects of the Alaska Market Co-op

Figure 4:



The Alaska Market Co-op

Special Features of the Co-op

In addition to the aggregation center being the food hub to aggregate, process, and distribute food in markets to families and institutional buyers, there will be other services provided in the Alaska Market Co-op:

*Note: Currently, there exists **no** food commodity warehouse in the state of Alaska

1. Year-round Farmer's Market

- Fruits, vegetables, grain: Potatoes, carrots, peas, rhubarb, broccoli, cauliflower, zucchini,
**Note: Potatoes represent 73% all frozen vegetables consumed in the US^{xxxvii} utilization*

2. Cold-storage facilities

- Cold-storage facilities will allow for storage and processing capabilities year-round

3. Value-Added Processing

- Juices, sauces, oils, jams (ex: rhubarb, berries, carrots, peas)
- Potato Products: French fry and tater tot production

4. Restaurants, Bakeries, Specialty Shops

- Local chefs and food enthusiasts will be engaged through opportunities to learn about the use of Alaskan- grown products. It will also be one of the important goals of the Alaska market Co-op to develop a kitchen incubator to provide access to facilities for the creation of new products based on Alaskan-grown fruits and vegetables.

5. Farm-Business Incubator

- Providing education and business opportunities to farm workers and aspiring farmers
- Striving for economic viability of new and small farms, educational awareness of farming practices
 - i. Education and demonstrations on land conservation, habitat restoration, marketing, and whole farm planning.
 - ii. Business planning, record-keeping, production, harvest, marketing and conservation
 - iii. Organic Produce Distribution: Sales development plan (in order to have sales match the production levels of new farmers)

6. Farm Succession Planning

- Assisting farmers with transferring knowledge, skills, labor, management, control and ownership of the farm business from the retiring founder generation to the successor (next) generation.
 - i. Involves creation, preservation, and ultimately the transfer of the farm-business assets in order to achieve personal, family, and business goals
 - ii. A ramping engagement process that should take 15 years

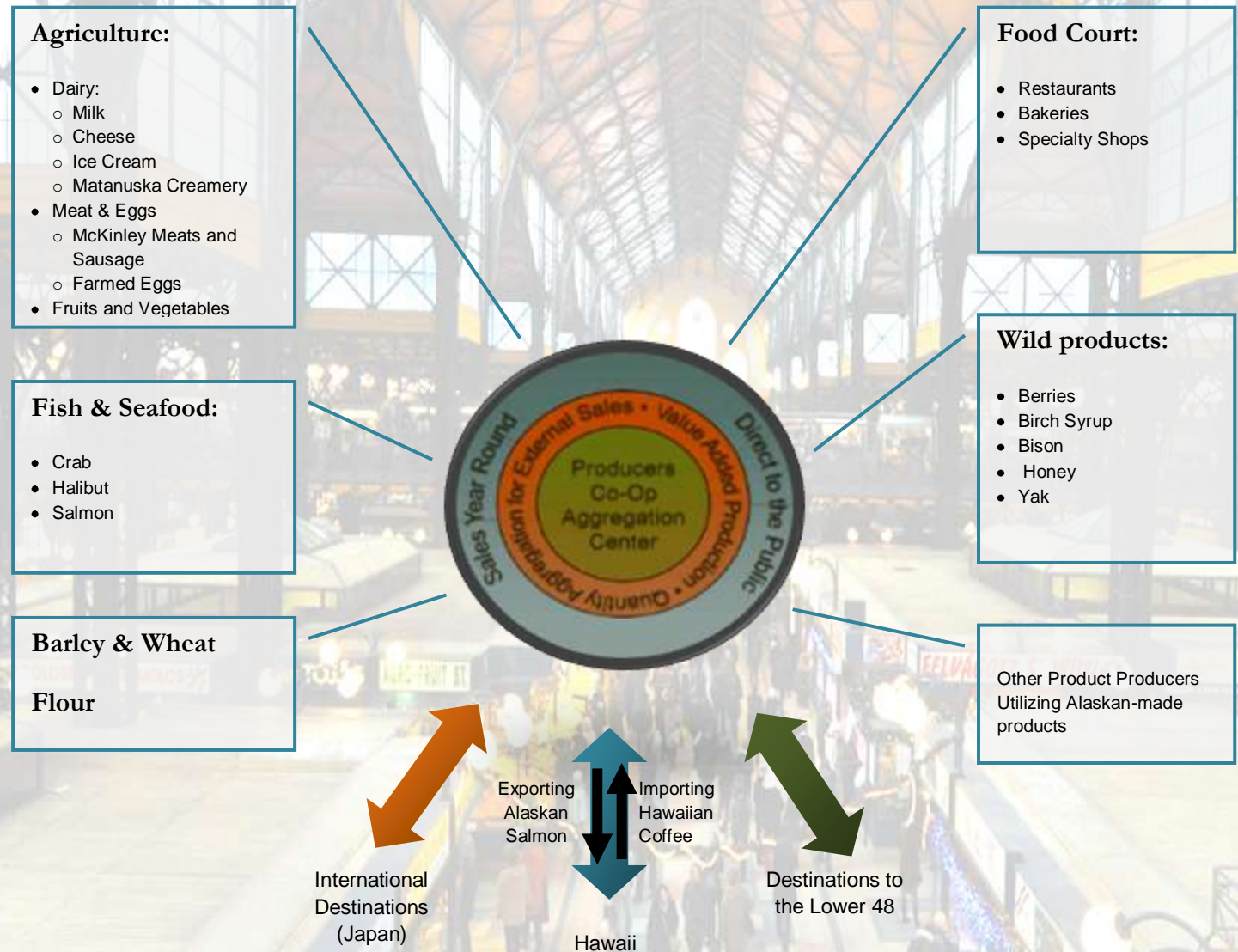
7. Mobile Slaughterhouse Unit (off-the-farm)

- A mobile slaughterhouse unit would allow small-scale meat producers to have direct access to a USDA-inspected slaughter and processing facility without long trips to the slaughterhouse
 - i. Relieves stress on farmers or animals from long transportation methods (ethical treatment killing animals on the land they were raised on—keeping meat where it was raised: locally]
- MPU: Mobile Processing Unit
 - i. Getting funds for mobile unit; Aligning themselves with USDA processing establishment
 - ii. Allowing ranchers to have the chance to develop the market for their meat
 - 1. Prices—\$5,000 for infrastructure for cement slabs to butcher animals; \$150/head kill fee

Modeling the Alaska Market Co-op

The following model represents how the Alaska Market Co-op would function as an aggregation and distribution center in Anchorage, Alaska. At this location, there would be year-round sales available for the public and institutional buyers, and export capabilities.

Figure 5:



The Alaska Market Co-op

Functioning of the Co-op

AMBIT has already found an optimal location in Anchorage close to the rail, ship, and freight transport centers believed to reach the largest amount of small farmers, direct end-consumers, and large institutional buyers. By setting up the aggregation center in this optimal location, it will maximize the greatest population in the state, also serving as the perfect place for agritourism to grow, since the area is easily accessible enough to accommodate visitors. The Alaska Market Co-op will turn into the prime location in which tourists, from local aspiring farmers to traveling culinary enthusiasts, can go can take factory and farming tours, dine at eateries, and make it a family-oriented tourist attraction, similar to Pike's Place Market in Seattle, Washington. This center will run with the best qualities of the top successful markets and implement this co-op specifically on an Alaskan scale.

The Alaska Market Co-op will connect with the farmers in rural communities by setting up hub centers in the nearest towns to the villages. This co-op will ensure that the produce coming from even the smallest farms gets utilized; if not in their community then it will be used to meet the demands in Anchorage; no longer will the rural farmer be stranded or forgotten. Through connecting together with aggregation centers in other locations, products can be sold and procured at lower costs and savings and additional revenues can be passed on to the co-op and to the consumers.

The co-op in itself will be run by small farmers across the state. In order to make it effective for strengthening the agriculture industry, the different types of farms in different regions *must* be represented. In accordance to the top-down approach, the support from the farmers and for the farmers is imperative; they will be the leading actors ensuring this co-op is sustainable long-term. Principles that are an integral part of the co-op governance includes: voluntary and open membership, democratic member

control, member economic participation, autonomy and independence, education, training, & information, and concern for the community.

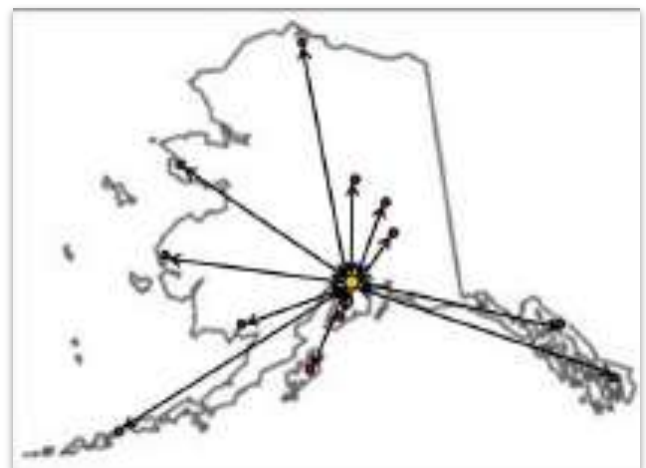
By allowing the co-op to remain democratic and autonomous, it can be ensured that the needs and concerns of the community will be met with minimal outside influence; this way, community consciousness is fostered and cooperation can be maximized; just as much as the consumers look out for the local farmers to support consumption of their great produce, the farmers are looking out for their community they are serving and growing for as well.

The Co-op as a Food Hub

The diagram below (Figure 6) represents the hub and spoke model in which a statewide network of 'Food Hubs' transfer product between Anchorage Aggregation center and hub communities.

The partnerships with other aggregation centers in hub cities include Bethel, Barrow, Copper Center, Delta, Dillingham, Fairbanks, Juneau, Ketchikan, and Nome.

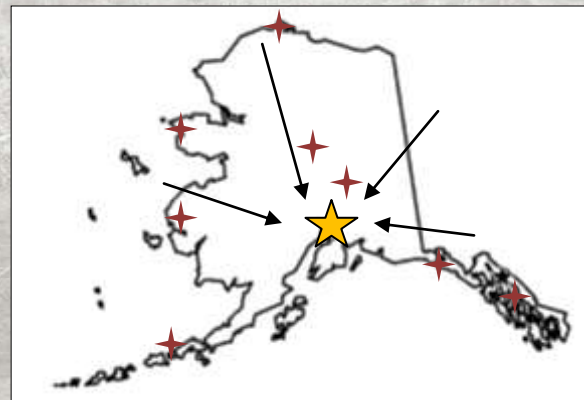
Figure 6:



The Alaska Market Co-op

From top-bottom

Figure 7:



★ Many different farms join Alaska Market Co-op
(Voluntary membership; farmers defined by USDA)

In order to maximize utilization, surplus from small farmers will be sent to other aggregation centers across the state to be sold and used for value-added production

Agritourism

Direct sales to end-consumers

Streamlined to Institutional buyers throughout AK

Creation of value added products; sold to different buyers across Alaska

Working with other aggregation centers to distribute variety of products

(consumables that would otherwise be imported from the lower 48)

From bottom-up

Potatoes are used in this example, but tomatoes, cucumbers, peppers, zucchini, rhubarb, and many other root crops may also be grown.



Small Potato Farmer



Harvested potatoes ready for sale



Sell to community

Export surplus potatoes to other communities/aggregation centers, including the Alaska Market Co-op to be used for value-added production.

The Alaska Market Co-op

Principles

The cooperative principles are guidelines by which cooperatives put their values into practice. The goal of the Alaska Market Co-op is to foster a supportive network in which farmers are able to have access to the market and infrastructure necessary to successfully aggregate, process, distribute, and streamline produce directly to end-consumers as well as institutional buyers.

1st Principle: Voluntary and Open Membership
The Alaska Market Co-op is a voluntary organization; open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political, or religious discrimination. Farmers must believe in the co-op's principles and goals and must be recognized as farmers by the USDA
2nd Principle: Democratic Member Control
Cooperatives are democratic organizations run by their members, who actively participate in implementing their policies and making decisions to benefit of the co-op as a whole. Men and women serving as elected representatives are accountable to the membership, with 25 chosen board members rotated annually.
3rd Principle: Member Economic Participation
Members contribute equitably to, and democratically control, the capital of their cooperative. At least part of that capital is usually the common property of the cooperative. Members allocate surpluses for any or all of the following purposes: developing their cooperative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members in proportion to their transactions with the cooperative; and supporting other activities approved by the membership.
4th Principle: Autonomy and Independence
Co-operatives are autonomous organizations controlled by their members. If they enter to agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their cooperative autonomy. This ensures that the interests of other organizations are respected while being in full support and compliance of cooperative goals.
5th Principle: Education, Training and Information
Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their cooperatives. Information is shared to ensure the best technology utilized among the members to maximize capabilities, including resources on food safety practices, training programs, labor laws, and efficient farming practices.
6th Principle: Co-operation among Co-operatives
Co-operatives serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional and international structures. It is the cooperation and centralization that will allow the coop to successfully aggregate, process, distribute, and streamline produce directly to end-consumers as well as institutional buyers. The Alaska Market Co-op will work with consumers across the state from the central hub in Anchorage, while also connecting with other co-ops across Alaska to maximize their produce distributed and sold too.
7th Principle: Concern for Community
Co-operatives work for the sustainable development of their communities through policies approved by their members. By being democratic with representation from the farms, as well as keeping concern for the state, community, and consumers, everyone will be represented and concerns heard for the greater good of the health and well-being of the industry and the people

The Alaska Market Co-op

V. From Vision to Reality:

Goals

Short-term goals will be the strengthening of the agricultural industry so people can maximize potential and resources in rural communities. Employment will increase, and there will be a viable/sustainable system to grow, produce, process, and distribute food within the state. Small farmers can finally have direct access to the public, reaching end-consumers and institutional buyers all in one place. With co-op's large-scale aggregation capabilities and cold storage/freezer devices, there will be direct sales to the public year-round.

AMBIT will target 10% local food production within the next ten years with an eventual goal of 25% to sustain immediate food security at the minimum. The initial projected rate of 10% local food production is almost guaranteed by the first ten years, with high rates on return for every \$100,000 invested into the program. Once the state sustainably reaches 25% of local consumption, the state has the influence to rapidly increase during a time of food security constraint to meet 50% of local consumption, while also reducing consumption rates to balance appropriate need and production.

Long-term goals will be for the Alaska Market Co-op to be independently sustainable without external support, such as the government. With concern for the state, community, and of course the small-farm co-op members, the autonomous and democratic co-op will reach independent and profitable capacities for growth. Import substitution will take place and Alaska will no longer need to depend on importing all consumables from the lower 48, therefore enhancing food security in the state. Furthermore, the health and overall well-being of the individuals that make the communities throughout Alaska so unique will thrive.

Ultimately, the creation of the Alaska Market Co-op is to reach the potential \$7.5 billion market, creating and strengthening multiple lucrative and sustainable jobs, while supporting Alaska's whole agriculture industry.

By creating a central location in Anchorage for the co-op, it will turn into the main hub of Alaska for food aggregation, processing, distribution, and sales. There will be partnerships with other aggregation centers in hub cities, such as Bethel, Barrow, Copper Center, Delta, Dillingham, Fairbanks, Juneau, Ketchikan, and Nome.

Expectations for the Next 5 Years

The Alaska Market Co-op will work to create 500 new farms, farming 25,000 new additional acres, food-stuff production can reach 10% of total Alaskan market consumption with an eventual goal of providing for 25% of locally grown food in the Alaska food system

Over the next 15 years, annual production values will reach \$2.2 Billion in total. Annual costs will be \$93 Million in total.

Target Values
Current Production Value: \$1.2 Billion
Target 10%-- at 10 years, \$1.5 Billion
Target 25%-- at 15 years, \$2.0 Billion

The Alaska Market Co-op

Alaska Market Co-op: Strategic Plan

What is needed to Reach 10% Production Levels of Alaska Food Consumption?

Objective I: Creating & Supporting Strong, Sustainable Farms (500 new farms)

How to do this? *Proper Farm Training /Farm Business Planning*

- Mobilize farmers for co-op and set up Agriculture industry for success by helping small farmers
 - Determining which farm works best for the specified land: SPIN, MOP, MAP
- Education:
 - Co-op Will set up **farming-business incubator** to assist aspiring and low-resource farmers with business and farming education for sustainable, independent success
 - Services include: provision of farmland, equipment and irrigation for beginning farmers operating at various scales, ranging from one-half to eight acres); assistance with production sales (services part of AMBIT program)
 - Work with farmers to create **farm succession plans**— a process occurring over time in which a family plans for the transfer of knowledge, skills, labor, management, control and ownership of the farm business between the retiring founder generation and successor (next) generation.
- Cooperation:
 - Farmers can collaborate on new ideas and technologies, and therefore glean faster, better methods for harvesting and selling from each other's experiences.
 - Marketing: Gaining public support from consumers and institutions (phase II)
- Aggregation: Preparing for a centralized food system throughout the state

Objective II: Selected Land Releases in the locations and size factors that drive success for SPIN, MOP, MAP farms (25,000 new acres)

How to do this? *A petition for the state will create a land release program, specifically targeted at new farmer and under-updated practice rules*

- The Alaska Farmstead Act (*Legislation in progress from AMBIT*)
 - Creating the last frontier food system
 - Farmer to Village → Hub Community → Aggregation Center (and back ←→)

Objective III: Capital Availability for Farm Start-up

How to do this? *Gather funds from state and supporting resources*

Objective IV: Equipment for land prep (co-op managed and operated)

How to do this? *Access to markets year-round, institutional purchases, product aggregation, and processing, located in Anchorage, AK*

- Locally produced food widely available for Alaskans—from major hub cities to rural villages working with other aggregation centers through the state.

Objective V: Fully-functioning Alaska Market Co-op

How to do this? *Access to markets year-round, institutional purchases, product aggregation, and processing, located in Anchorage, AK*

- Locally produced food widely available for Alaskans—from major hub cities to rural villages working with other aggregation centers through the state.

The Alaska Market Co-op

How the *Alaska Market Co-op: Strategic Plan* will cover objectives of the Alaska Farmland Trust, Alaska Department of Agriculture, and Alaska Food Policy Council:

Alaska Farmland Trust (covered by Alaska Market Co-op Objectives I and II)

Alaska Farmland Trust Objective I: *Farmland Conservation and Stewardship*

- (1a) Identify and preserve soils of local importance including City, State, Borough, and Federal lands.
- Develop the tools needed to preserve lands effectively in the State of Alaska.
- Ensure adequate stewardship of protected lands.
- Develop a clear and compelling case for farmland preservation
- Support other State and local preservation programs, and encourage conservation

Alaska Farmland Trust Objective II: *Education and Outreach*

- (2a) Convey the importance of farmland preservation, conservation opportunities and AFTC's role in farmland conservation to the public; land owners, city, borough, state, and agency staff, elected officials, local residents, and school children.
- Engage more individuals and diverse organizations by working cooperatively with local agriculture groups, including the master gardeners, Future Farmers of America (FFA), 4-H, Grange, and food bank networks to foster agriculture in the classroom, form community garden groups, develop new market opportunities for farmers, and deepen understanding and appreciation of this great resource.
- Facilitate collaboration with local Soil and Water Conservation District groups, and other preservation groups to further support State and local preservation programs.
- Possibly fund Future Farmers of America (FFA) or 4-H scholarships for the education of continuing generations of farmers

The Alaska Market Co-op: (Objective I: 500 new farms & Objective II: Selected land releases for 25,000 new acres)

- *A petition for the state will create a land release program, specifically targeted at new farmer and under-updated practice rules*
- *Will promote farm lands preservation; prevent land from being turned into recreational uses*
- *The development of the farm-business incubator will give current and aspiring farmers the tools needed to learn successful farming business strategies and techniques*
- *Education among members will be priority of the coop (along with cooperation and aggregation)*
- *Assistance with creating farming succession plans for farmers to ensure sustainability*

Alaska Department of Agriculture (ADOA) (covered by Alaska Market Co-op Objective II)

ADOA Objective I: *Agricultural land sales and management*

- (1a) Identify state lands with agricultural potential and expedite the sale of those lands into private ownership. Manage state lands through short & long-term grazing leases and other permits for agricultural purposes

The Alaska Market Co-op: (Objective II: Selected land releases for 25,000 new acres)

- *A petition for the state will create a land release program, specifically targeted at new farmer and under-updated practice rules*

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- Assistance with creating farming succession plans for farmers to ensure sustainability over generations (not only expediting the sale of agricultural lands into private ownership, but also making sure they are self-maintained and independent)

Alaska Food Policy Council (AFPC) (covered by Alaska Market Co-op Objective V)

AFPC Objective I: Access to affordable, healthy (preferably local) foods → more schools involved; more institutions involved

- (1a) Increase the number of Alaska schools participating in local, healthy, and traditional food procurement.
- (1d) Increase the number of Alaska institutions (e.g., hospitals, government agencies) participating in local, healthy, and traditional food procurement

The Alaska Market Co-op: (Objective V: Fully-functioning Alaska Market Co-op)

- Aggregation center will allow for large institutional sales, including with schools for educations
- The schools would not only have the local produce available for consumption, but they could also integrate it into education about agriculture, sustainability, and how local farmers are important to the community. With additional support from the farming co-op with field trips regarding agritourism and direct access to the farming process, the co-op would be a more direct way to promote health and nutrition for the community.
- The increased accessibility of healthy food and education on nutrition and dieting would greatly benefit the community because most of the rural population suffers from extremely high rates of alcoholism, depression, and suicide.
- Institutional buyers will be present, thereby increasing large-scale sales from the small farmers that would otherwise not have this opportunity to collaborate and engage in this market. Institutional-buying entities would include schools, hospitals, and correctional facilities.

AFPC Objective III: Food is safe and protected; supplies secure in AK → emergency food preparedness in communities and regions

- (3a) Improve the emergency food preparedness of our communities and regions

The Alaska Market Co-op: (Objective V: Fully-functioning Alaska Market Co-op)

- There will be statewide emergency food preparedness, allowing individual family food preparedness in emergency situations to be easier.
- Aggregation center means Import substitution will take place in the agriculture industry, strengthening the Alaskan economy

AFPC Objective V: Alaskans engaged in AK system → increase number of food advocates for healthy food initiatives and policy

- (5a) Improve the body of research that will inform and support Alaska food policy efforts
- (5b) Increase the number of food advocates among the public that support healthy food initiatives and policy changes

The Alaska Market Co-op: (Objective V: Fully-functioning Alaska Market Co-op)

- Cooperative means centralization of ideas and advocacy of this entity; representatives will hold best interest of members and community, while working alongside policy makers
- Marketing Alaska-grown produce
- The opportunity for the youth to be involved with successful local farmers and educational field trips

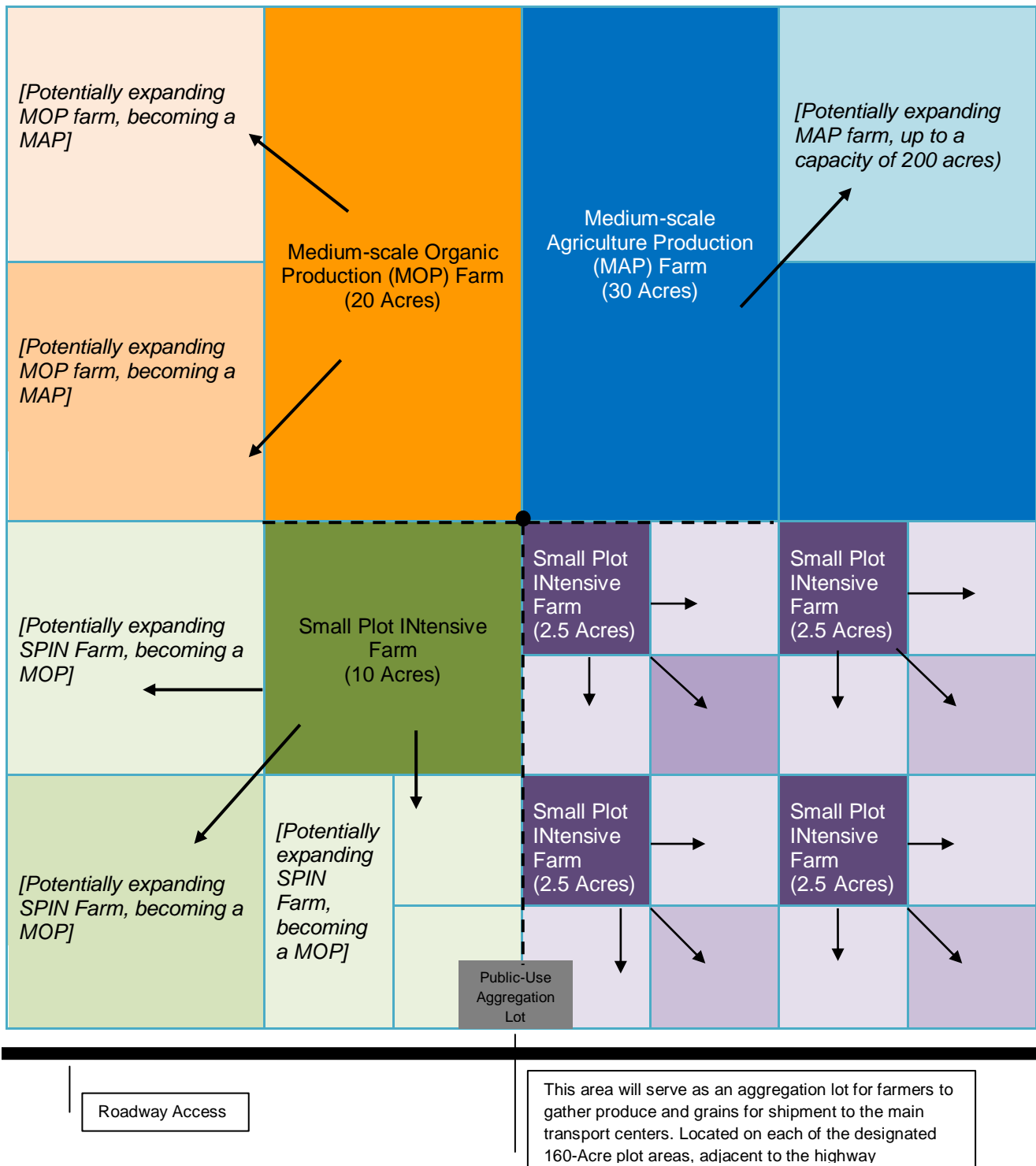
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Types of Farms Applicants may apply for

**Each square represents 10 acres for farming; Earnings per acre are estimated and will range depending on farm practices, production efficiency & effort*

This diagram (Figure 7) depicts various scenarios of landscape development that are likely to occur given the implementation of best practice farming techniques. The black arrow lines depict expansion from initial farm development projects. Land use would be planned and platted prior to state release. The black dashed lines depict roadway access from the main highway to the 160-acre plot areas.

Figure 8:



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SPIN, MOP, and MAP Farms

Medium-scale Organic Production (MOP) Farms:

Size: 10-25 Acres

Focus: Larger mechanized production of crops such as potatoes, carrots and other low tend vegetables. As well as dairy production and meat animals such as beef, hogs, and poultry/eggs and sometimes niche animals such as bison, elk, goats, sheep and yak farmed organically to garner higher value even if the farm is not certified organic. Greenhouses may be used but they are not the focal point of production and irrigation is on a broader format as well as underground frost-free root cellar storage.

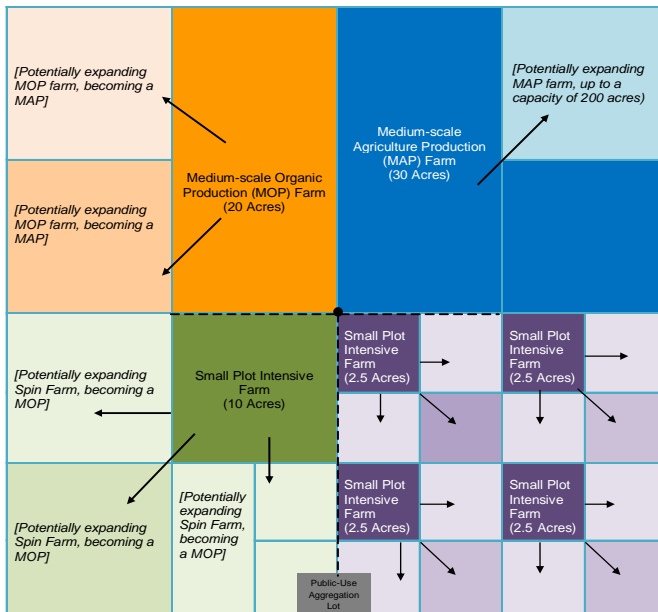
Earnings per Acre: Between \$3,000-\$7,000

Medium-scale Agriculture Production (MAP) Farms:

Size: 25-200 Acres or more (though a few farms in Alaska are larger than only a section, with 640 acres—the traditional farm size down in the lower 48).

Focus: Traditional farming methods and the use of artificial fertilizers and pesticides to produce with heavy equipment, crops such as hay, wheat, barley, rye, oats and other cereals. They may also have larger scale meat production with land dedicated to grazing or production facilities for producing poultry and eggs. Greenhouses are normally not utilized for this level of production and irrigation if used is mobile or circular and most storage is accomplished above ground.

Earnings per Acre: Between \$1,000-\$3,000



Small Plot Intensive (SPIN) Farms:

Size: 1-10 Acres

Focus: Primarily hand-picked/high tend fruits and vegetables with the potential for a few animals. High and low tunnel greenhouses are very important for longer season production along with spot irrigation or watering and underground frost-free root cellars are very important

Earnings per Acre: Between \$5,000-\$10,000 or more

Small Plot Intensive (SPIN) Farms:

Size: 1-10 Acres

Focus: Primarily hand-picked/high tend fruits and vegetables with the potential for a few animals. High and low tunnel greenhouses are very important for longer season production along with spot irrigation or watering and underground frost-free root cellars are very important

Earnings per Acre: Between \$5,000-\$10,000 or more

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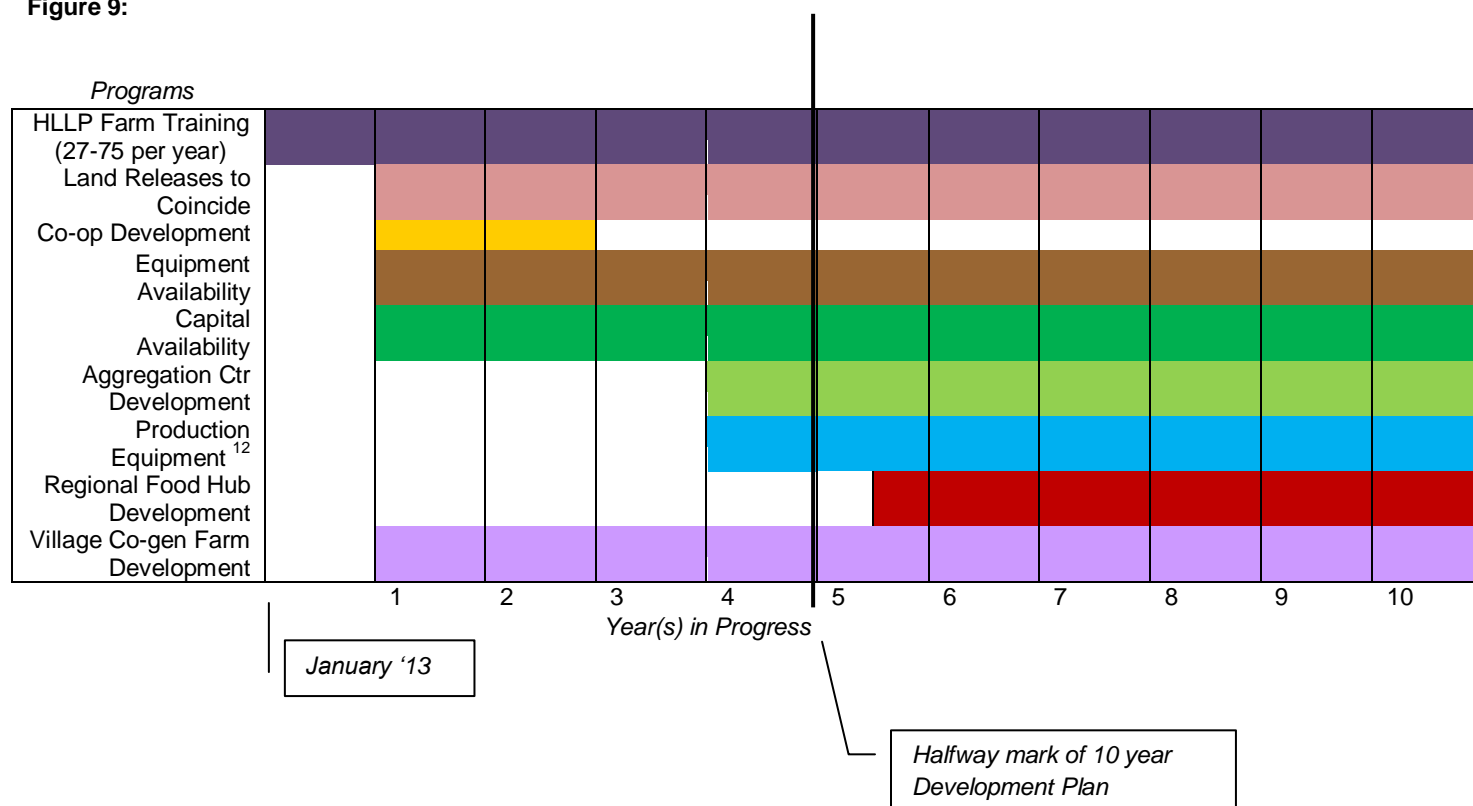
Alaska High Latitude Production Potential Index Score (AHLPP)

The AHLPP Index Score will measure the quality and production capabilities of potential farms suitable for farming in Alaska. The AHLPP score has six basic variables gauged on a Likert scale of 1-5 where 1=Very Poor, 2=Poor, 3=Neutral, 4=Good, and 5=Very Good. This allows for a judgment against the variables of "Distance to supply hub or market" "Water availability & quality" "Soil operability & quality" "Current state of land prep" "Energy access & cost" and lastly "Physical access". This scale then ranks the potential farm and a score of less than 18 (numerical average) is a risky venture and the lower the score the higher the risk.

Distance to Supply Hub or Market	Very Poor 1	Poor 2	Neutral 3	Good 4	Very Good 5
Water Availability & Quality	Very Poor 1	Poor 2	Neutral 3	Good 4	Very Good 5
Soil Operability & Quality	Very Poor 1	Poor 2	Neutral 3	Good 4	Very Good 5
Current State of Land Preparation	Very Poor 1	Poor 2	Neutral 3	Good 4	Very Good 5
Energy Access & Cost	Very Poor 1	Poor 2	Neutral 3	Good 4	Very Good 5
Physical Access	Very Poor 1	Poor 2	Neutral 3	Good 4	Very Good 5

Alaska Market Co-op Development Timeline

Figure 9:

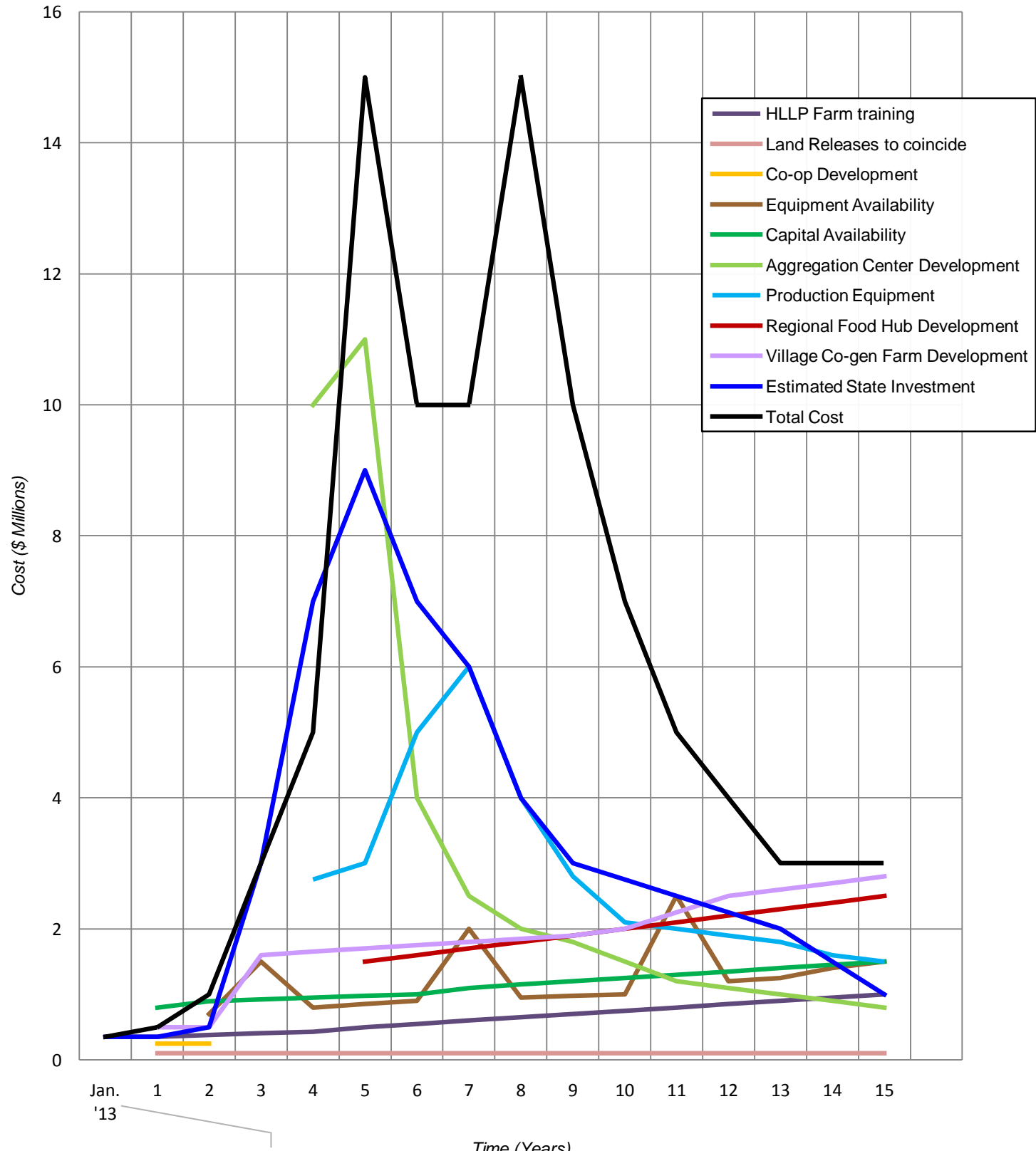


¹² Production equipment consists of French fry cutters, tater tot extruders, juice lines, mobile slaughterhouse units

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Time-Cost Comparison Chart

Figure 10:



Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Annual Costs (\$ Millions)	.35	.5	3.0	5.0	15	10	10	15	10	7	5	4	3	3	3	\$93 Million
Annual Production Values (\$Millions)	30	35	40	45	50	60	75	100	125	150	175	215	250	350	500	\$2.2 Billion

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Facing the Facts

Alaska imports 97% of consumables from external agricultural suppliers and maintaining a short-term supply of food for a mere 3-5 days. **Alaska is dependent on importing food and not prepared to supply the state in the event of an emergency.**

There are approximately 900,000 acres reserved for farming, and yet only 30,772 acres are currently used in food production. The acreage of in harvested crops and produce continues to **decline**. **There needs to be more farming in Alaska to utilize the land for its original purposes.**

Only 4% of Alaska's designated farmland is even accessible and viable for farming. **Infrastructure needs to be strengthened to allow farmland to be accessible and viable for farmers.**

For the 680 farms that are in existence, more than half of them are smaller farms, with only 320 farms having incomes greater than \$10,000/year. **Most small farmers are producing far less than expected and can barely make a profit. They need help to maximize their agricultural potential.**

The value of the Alaskan agricultural market is approximately \$30 million with less than \$10 million vested into growing vegetables and potatoes. Of the 30,000 acres of land currently in production, 20,000 are used for hay. **Aside from hay production, Alaska has the potential to grow various types of vegetable, dairy, and meat products.**

Food spoilage rates are as high as 40% for consumers— a huge pressing issue with Alaskans living in rural communities. **Long shipping distances and expensive transportation costs for shipping must be alleviated by pursuing local production.**

The rural population is decreasing, becoming a net-outflow entity due to scarce economic opportunities. **There needs to be more opportunities in rural areas for individuals to thrive.**

There **IS** viable land out there for farming; 900,000 acres have been reserved for farming. With a land-release program petitioned to the state, land can be used effectively by the appropriate owners as intended.

There **IS** a market for locally-grown Alaskan products-- A majority of retailers reported a willingness to pay 5 to 10% more for locally grown produce with two saying they would even pay 20% more for local produce.

Creating the Alaska Market Co-op for aggregating, processing, and distributing food products **is** possible and **can** be sustainable!



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VI. Conclusion:

The Alaska Market Co-op offers the competitive edge for long-term sustainability and self-sufficiency in the global market. From the top-down approach but based on pent-up demand, a petition to procure a land-release program from the state and a centralized network of farmers will get Alaska in the best position to strengthen its agricultural industry. At the same time, a bottom-up approach is necessary to gain support and cooperation from farmers to enable this with this new agricultural infrastructure to be utilized effectively, thus finally leading agriculture in the state of Alaska to economic viability.

The facts are clear and apparent. Alaska imports 97% of its food, making the state severely *food insecure*. The agriculture industry is suffering with small farms and businesses failing at an increasing rate, many with a life expectancy of less than two years leading to bankruptcy^{xxxviii}. Spoilage rates reach 40% for rural communities and many people are permanently leaving the rural areas for job opportunities without ever returning.

The most direct solution is to target infrastructure; the best way to do that is the Alaskan Market Co-op. By pursuing policies that actively increase accessibility to markets, equipment, and training needed for potential farmers, it will be a profitable and sustainable success, ultimately forging the way for farms to expand while strengthening the food security, access, affordability, and quality of produce and consumables for the Alaskan people. 500 **new farm ventures**¹³ must be created to reach the goal of 10% locally produced food within the next ten years. Future farmers will be engaged, educated, and ready to overcome the agriculture challenge that has faced Alaska for far too long.

The decision to ‘accomplish’ this project rests on one question: *Whether or not Alaska is satisfied with the current rate of agricultural business failure*. The state can continue to function as a neo-colonial economy where major business decisions are made *for* it by external forces, or it can invest in itself and create the infrastructure necessary for Alaskan entrepreneurs to fulfill our purchasing needs and begin developing value-added products in quantities large

enough to attract institutional level sales both in and out of the state and nation. With a potential market of about \$7.5 billion dollars in Alaska alone, with guaranteed high returns on investment, supporting the Alaska Market Co-op *drives* the belief and security of Alaska’s future.

In this paper we have paid out the roadmap to properly accomplish an agriculture program here in Alaska. Technical innovations and lessons learned by Alaskan farmers have pushed the envelope and made agriculture economically viable to a greater extent than it has even been. The Alaska market is large enough for economic growth but there is also demand from outside the state for agricultural production and products from Alaska to feed a hungry country and world. Alaskan agriculture can be the next big state-wide economic generator the way that furs, fish, mining and oil have been in the past. The difference is that this economic sector is also long term sustainable and nowhere else in the country is there as much raw fertile land for production that has not been tainted by past poor agricultural practices.

But to get to the point where Alaska can at least partially feed itself and regain some level of food security, we will have to invest in the infrastructure that can make it all happen. This change will not happen over-night and it must be accomplished inside of a methodology where people can earn a decent living and not put themselves in such debt that they default or never are able to reach necessary production levels. Keeping farms small and focused on high value items will keep people out of crushing long-term debt while allowing them to participate in value added production.

The Alaska Market Co-op is that foundation for success that will create and maintain the infrastructure necessary to meet the consumption needs of a greater and ever increasing portion of Alaskans with high quality nutritious locally grown foods while earning and keeping money inside of Alaska.

Fact: No other economic development sector has as much potential to create rural jobs and eliminate stranded labor pools as well as positively affect the daily lives of Alaskans than AGRICULTURE.

Let’s make it happen for Alaska!

¹³ New farm ventures defined as newly created farms on raw land.

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- ⁱ Photos Courtesy of the Meyers Farm in Bethel, Alaska
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- ^{viii} Photo courtesy of the University of Washington Libraries: Vegetable garden in Holy Cross, Alaska (1914)
- ^{ix} Matt A. Mattaini, "Substance Abuse in Rural Alaska: A Behavior Analytic Exploration," *Behavior and Social Issues*, 1:1 (1991), 3 <http://ojs.phd.org/htbin/cgiwrap/bin/ojs/index.php/bsi/article/viewFile/186/2861>
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- ^{xvi} Darcy Denton Davies, "Projects and Policy: Have They Been a Success?" University of Alaska, Fairbanks: Senior Thesis, http://www.uaf.edu/files/snras/ST_08_01.pdf (May 2007), 13.
- ^{xvii} Thomas Myers, "Resurrection of Agriculture," AMBIT, http://media.wix.com/ugd//258bcd_df63cd6db60a610032175bb81ea031e0.pdf (April 2010), 49.
- ^{xviii} Photo Courtesy of the University of Washington Libraries: Clark Family Farm, Skagway, Alaska (1914)
- ^{xix} Photo Courtesy of the University of Washington Libraries: Spring Creek Dairy Farm, Matanuska, Alaska (1960)
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- ^{xxi} Charles David Caster, "Assessing Food Security in Fairbanks, Alaska," University of Alaska, Fairbanks: Senior Thesis, http://www.uaf.edu/files/snras/ST_2011_01.pdf (May 2011) 15.
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- ^{xxiii} Photo Courtesy of the Alaska Farmland Trust
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