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Plan for Sustainable Organic Growth

Team #15

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EXECUTIVE SUMMARY

UBC Farm is a 15 acre organic farm located on UBC's South Campus. UBC Farm needs to develop a commercially sustainable business model to ensure its long term survival as this area under threat of housing development from 2012. This business plan provides a medium term vision for UBC Farm and a short-term action plan to increase the Farm's commercial viability by leveraging clear sustainable competitive advantages within a rapidly growing, attractive market sector.

Proposition

The proposition is to invest in the development of UBC Farm's infrastructure and productive capacity to create a self sustaining organic farm and a world leading educational centre by 2010. This is achieved by:

- Increasing the farmed area from the current three acres to eight
- Enhancing the product range to include processed foods such as smoothies
- Increasing awareness of UBC Farm and developing new channels to market
- Enhancing on site facilities to enable academic and commercial services

Attractiveness and Sustainable Competitive Advantage

UBC Farm benefits from a unique location and association with the UBC brand. When these inimitable assets are combined with the growing market demand for organic produce and the growing local population, it is clear that the proposition to develop UBC Farm reflects *the right products at the right place at the right time*. Furthermore, this plan supports UBC's objective to be a leader in sustainability and academic excellence.

Financial Summary

UBC Farm currently relies on grant funding of approximately \$100,000 to cover net annual losses. The business plan requires investment of \$200,000 in new equipment and infrastructure which results in an increase in the area farmed and the yield per acre to generate a positive surplus in 2010 following which grant funding will no longer be a necessity. The investment generates a positive NPV of \$194,000.

Social Values

UBC Farm is about much more than the bottom line financial return. It generates significant social value through the promotion of healthy and sustainable lifestyle in the local community and via school academic programs. In addition, UBC Farm encourages and supports research projects that benefit British Columbia's and Canada's organic industry.

Future Opportunities

There are many sources of revenues that are not included in the financial analysis, but that represent attractive commercial opportunities. These include establishing an international academic program and the hosting of events.

Risks

The key risks of the plan are the realisation of the operational efficiencies as the farmed area increases in size and the risk of crop failures through uncontrollable factors such as weather and disease. A sensitivity analysis has been performed to quantify the impact of these risks.

TABLE OF CONTENTS

1.	UBC FARM OVERVIEW.....	1
2.	PROPOSITION.....	2
2.1.	VISION.....	2
2.2.	COMMERCIAL AND SOCIAL VALUE PROPOSITION	2
2.3.	PRODUCT AND SERVICE MODEL.....	3
2.4.	MARKET GARDEN	3
2.5.	PROCESSED FOODS.....	3
2.6.	FUTURE OPPORTUNITIES.....	4
2.7.	UBC FARM’S COMPETITIVE ADVANTAGES.....	4
3.	MARKET ANALYSIS.....	5
3.1.	MARKET OVERVIEW	5
3.2.	IDENTIFICATION OF CUSTOMERS	5
3.3.	MARKET SIZE, ANALYSIS AND FORECAST	6
3.4.	INDUSTRY ANALYSIS AND FORECAST	6
3.5.	COMPETITOR ANALYSIS	7
4.	MARKETING STRATEGY	8
4.1.	OBJECTIVES AND TARGETS.....	8
4.2.	TARGET MARKET AND POSITIONING	9
4.3.	THE MARKETING MIX	9
4.4.	IMPLEMENTATION	10
5.	OPERATIONAL STRATEGY.....	11
5.1.	OVERVIEW OF CURRENT OPERATIONS	11
5.2.	ORGANIC FARMING	11
5.3.	INCREASING UBC FARM’S PRODUCTIVE CAPACITY	12
5.4.	INCREASING UBC FARM’S REVENUE PER ACRE	12
5.5.	OPERATIONAL EFFICIENCY.....	13
5.6.	MANAGEMENT TEAM AND HR OPERATIONS.....	14
5.7.	UBC OPERATING ENVIRONMENT & CONSTRAINTS	14
6.	FINANCIAL ANALYSIS.....	15
6.1.	CURRENT FINANCIAL POSITION	15
6.2.	INVESTMENT PLAN.....	15
6.3.	KEY FINANCIAL DRIVERS.....	16
6.4.	SUMMARY INCOME STATEMENT	16
6.5.	CASH FLOW AND INVESTMENT APPRAISAL.....	17
6.6.	SENSITIVITY ANALYSIS.....	18
6.7.	FUNDING	18
7.	CRITICAL RISKS.....	19
8.	SOCIAL IMPACT ANALYSIS.....	20
8.1.	SOCIALLY RESPONSIBLE OPERATIONS	20
8.2.	SOCIAL BENEFITS.....	20
	REFERENCES	I
	APPENDIX I – INTERNATIONAL PROGRAM (SUMMARY)	I
	APPENDIX II – EVENTS & SERVICES	II
	APPENDIX III – TARGET MARKET	III

TABLE OF CONTENTS CONTINUED

APPENDIX IV – PORTER’S FIVE FORCES - INDUSTRY ANALYSIS	IV
APPENDIX V – ORGANISATIONAL STRUCTURE	V
APPENDIX VI – CUSTOMER MARKET SURVEY	VI
APPENDIX VII – MARKET SURVEY	VII
APPENDIX VIII – MARKETING MIX	IX
APPENDIX IX –ORGANIC FARMING OPERATIONS	X
APPENDIX X – OPERATIONS: REVENUE PER ACRE.....	XI
APPENDIX XI– INVESTMENT SCHEDULE.....	XII
APPENDIX XIII - MARKET GARDEN INCOME STATEMENT	XIV
APPENDIX XIV - MARKET GARDEN – PRODUCTION ECONOMICS.....	XV

1. UBC FARM OVERVIEW

UBC Farm is a 15 acre teaching, research, and community Farm located to the South of the main University of British Columbia campus. The Farm is a student-driven initiative with an ultimate goal to retain and re-create UBC's existing Farm and forest lands into an internationally significant centre for sustainable agriculture, forestry and food systems. UBC's first Farm was established for agricultural research by the Faculty of Agriculture around 1915 and was located just west of the Chemistry building along what is now West Mall. Between the 1950s and 1980s, most of UBC's mid-campus was occupied by agricultural facilities, and by the mid-70's, the Farm moved from mid-campus to its current location. The Farm initiative started in 2000 and has progressively developed with small incremental projects on an annual basis.

Responsibility for the operations of UBC Farm now lies with the Faculty of Land and Food Systems. As such all aspects of the Farms operations and financing have to be considered in the context of UBC's requirements and constraints.

Today the UBC Farm is faced the prospect of being displaced forever. In 1997, in an effort to reduce commuter traffic, the university pledged to double the number of on-campus residents through construction of more residential housing. The land the Farm currently occupies is therefore escalating in value, and the Farm is challenged with showing itself to the university administration as a practical and sustainable use of land. This threat has prompted the faculty to create a long-term vision for the land as a centre of instruction, learning and research excellence that integrates principles of organic production and sustainability, and adds to the quality of life of the local community.

2. PROPOSITION

This section outlines the vision and objectives of the business plan, and details the competitive advantages that support UBC Farm's long term success.

2.1. Vision

To invest in the development of UBC Farm's infrastructure to create a step change in the productivity and commercial viability of UBC Farm, and to ensure its long term viability as part of the South Campus community. The proposed business model is based on the development of a robust, self-sustaining organic farming capability that demonstrates both diversity of produce and strong commercial and community attributes. The key steps to achieve this are:

<i>Goal</i>	<i>Key drivers</i>
<i>Increased Output</i>	<ul style="list-style-type: none">▪ <i>Investment in new farming equipment</i>▪ <i>Recruitment of full time Farm manager</i>▪ <i>Increased productive land in use and efficiency</i>
<i>Increased Sales</i>	<ul style="list-style-type: none">▪ <i>Increased awareness of UBC Farm</i>▪ <i>New product and channel development</i>
<i>Social & Community Value</i>	<ul style="list-style-type: none">▪ <i>Investment in Farm infrastructure</i>▪ <i>Development of international academic program (future opportunity)</i>

2.2. Commercial and Social Value Proposition

This investment creates multiple sources of value. These include, increased revenue yield per acre farmed from the sale of higher margin processed produce, and the potential to leverage increased venue awareness and the popularity of organic farming to generate revenues through the hosting of events and academic programming.

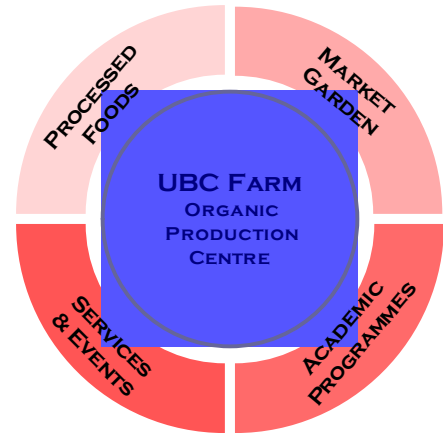
UBC Farm is far more than just a commercial asset; it is a unique academic and community asset that generates social value through school educational tours, community programmes and ongoing academic research. UBC Farm's vision is closely aligned with UBC's overall vision as expressed in Trek 2010. It helps UBC to realise the following goals:

..... by offering new programs that meet the needs of communities...throughout BC, UBC will also develop more opportunities for local communities to make use of UBC facilities and contribute actively to learning and research (UBC Trek 2010, Greenpaper)

..... Develop the University Town as a model of an engaged, sustainable community (UBC Trek 2010, Greenpaper)

2.3. Product and Service Model

UBC Farm’s operating model is summarised in this diagram. The heart of the operation is UBC Farm itself. From this core a number of products and services are supported:



2.4. Market Garden

UBC Farm’s Market Garden grows produce for retail purposes. Several types of vegetables, fruits and prepared foods are provided, with more available from local organic producers if required. Produce is mainly sold at the Saturday market held at the UBC Farm and through on-campus locations such as Sage Bistro, and Sprouts, as well as in other local restaurants.

As demand for produce exceeds supply the business plan proposition is to invest in increasing the productive capacity of the farm’s useable land, and to establish the Market Garden as a local community destination.

2.5. Processed Foods

To increase the revenue yielded from fresh produce, the proposition is to sell fruit in processed form. There is significant room for profit when the cost of processing is compared

with the price at which these products can be sold. There are many products that can be produced such as smoothies, preserves, and ice cream. The plan is to start with smoothies because the production process is the simplest, the cost of equipment is low and there is existing demand.

2.6. Future opportunities

There are many other sources of revenues that are not included in the business plan financial analysis, but represent attractive commercial opportunities once UBC Farm has become commercially sustainable in its core activity. These include:

- **International Academic Program** – UBC Farm is ideally placed to host a program targeted at government officials and students seeking knowledge of organic methods and the commercial side of organic farming (Appendix I provides more detail on this opportunity)
- **Events** - UBC Farm has the potential to earn revenues as an event facility. For example, hosting team building cooking classes. (Appendix II provides more details on this opportunity)

2.7. UBC Farm's competitive advantages

UBC Farm enjoys sustainable competitive advantages. It is positioned as the only working organic farm in Vancouver proper. It is affiliated with the UBC Brand that Vancouver area residents recognize and typically support. It is located close to the University village and the University Endowment Lands, which are rapidly growing. The farm is also in close proximity to other organically conscience neighbourhoods such as West Point Grey, Kitsilano, Kerrisdale and Dunbar.

3. MARKET ANALYSIS

This section talks about the Market and Industry analysis for the Organic Farm industry and the competitive advantages of UBC Farm with respect to other farms in the industry.

3.1. Market Overview

Organic farming is a growing trend in North America. Organic food is increasingly considered to an important aspect of healthy living. The U.S. Organic Center, based on their research on organic foods concluded that, on average, organically grown food has 30% more antioxidant levels (helpful for reducing risks to various diseases) than non organically grown products (Benbrook). This relates to health and lifestyle conscience people driving up the demand for organic foods.

The market growth rate for organic products in Canada is 15% per annum. Almost 71% of Canadians have tried organic food once, out of which 40% regularly purchase organic food regularly (more than 2 times per year). Organic purchasers are characterized by higher education, health and nutrition conscience, lower price sensitive and come from all income brackets (Cunningham, 2001).

3.2. Identification of Customers

The chart in Appendix III-A highlights that the market is driven by both customers above 35 years of age and health conscious individuals of the younger generation. In terms of education, the more educated the person, the more likely is he or she to purchase organic foods. In addition, the higher concentrations of organic food consumers are found in the income brackets of \$20,000 to \$40,000.

3.3. Market size, analysis and forecast

It is estimated that in the overall target market (UBC, Dunbar and Kitsilano) the percentage of people buying organic food several times a year will increase from 27% in 2006 to 44% in 2010. Appendix III B gives a graphical representation of the growth trends for the target locations. In addition, the development of housing for 4000 residents in South Campus increases the size of UBC Farm's target market. (Szeto, 2005)

3.4. Industry analysis and forecast

Industry Characteristics

Organic food refers to food grown under specific environmental friendly production methods, which include avoiding synthetic chemicals, promoting soil health and biodiversity.

The organic foods industry is in the growth stage of its life cycle. Currently organic foods represent a relatively small portion of all farm products. An increasing focus on healthy eating, concerns about food safety and a desire by an aging population to prevent disease are all factors will enhance the growth of the industry in the future.

The organic foods industry is currently believed to be non-cyclical. The industry is characterised by a large number of small producers.

Industry Competitiveness/Attractiveness

Please refer Appendix IV for a detailed analysis of Porter's five forces which talk about the industry attractiveness of the organic farm industry. They are briefly discussed below.

Barriers to entry: The barrier to entry to organic food industry is relatively higher than the conventional food industry. The requirements and regulations for organic land are high.

Intensity of Rivalry: Due to the entry of big companies into the market, competition in the industry has intensified. The typical way of operation for these large new comers is purchasing established brands rather than developing their own products.

Substitution threat: The major substitution to organic foods is the conventional foods. Although switching costs are low, health conscious people reduce the substitution risk.

Suppliers: The major suppliers for the organic food industry are the provider of seeds, tools and equipment. The supplier concentration is low, thus keeping the purchase cost low for farmers relative to total costs in the industry. The bargaining power of the suppliers is very low.

Buyers: For Canadians the most important factor in choosing food is taste, while the least important factor is price. In addition most Canadians are willing to pay a premium price (up to 10% extra) for healthier organic foods. (Cunningham, 2001)

3.5. Competitor Analysis

Although there are numerous organic farms and three farmer's markets in the greater Vancouver area, UBC Farm is the only organic farm in an area described by the Organic Consumer Association's website as "...one of the most lucrative as well as competitive in Canada." (Wong, 2005). This could mean that the competition might increase which necessitates UBC farm to be prepared for more intense competition in the future.

4. MARKETING STRATEGY

The marketing strategy section of the business plan details the target market, marketing activities and resources required to achieve the targeted sales objectives of increasing awareness, visits to the farm on a weekly basis, increased commercial purchases and other “off-farm” sales.

4.1. Objectives and targets

The overall objectives of the marketing strategy are to:

- Increase awareness of UBC Farm within the target market
- Develop and exploit new channels to reach the target customers
- Promote the new value added processed products

This is achieved through the recruitment of an additional marketing co-ordinator (see Appendix V for Organisational Structure) to develop sales channels and a small increase in marketing expenditure to build awareness within the target market. The table below summarises the key objectives and targets for UBC Farm’s marketing activity. These targets represent key success factors for the overall business plan.

	2005	2006	2008	2010
Visitors to the farm (average weekly)	300	400	600	900
UBC Farm awareness (in target market)				
- on Campus	73%	75%	75%	75%
- off Campus	33%	35%	40%	45%
Restaurants purchasing direct	3	5	8	10
Proportion of 'off-farm' sales	25%	30%	40%	50%

UBC Farm awareness figures based on market research found in Appendix VII and interviews with Mark Bomford, Program Coordinator at UBC Farm.

4.2. Target market and positioning

There are several dimensions to segment the target market by. The market is largely restricted by geographic region to the population of UBC Campus, University Endowment Lands, West Point Grey and Dunbar. Within this population an appropriate way to segment is by **Farm Visitors** and **Non-Visiting Farm Consumers**. This segmentation encapsulates different needs and behaviours that can be addressed by distinct marketing mixes. Market research (Appendix VII) suggested that the Visitor/Non-Visitor segmentation basis is a simpler and more effective way to target the market than segmenting by other dimensions such as student/non-student, resident/non-resident and other demographic bases. The attitudes and behaviours of these segments are as follows.

<p>Farm Visitor ▶</p>	<ul style="list-style-type: none"> ▪ UBC Farm is part of a weekly routine, a social event. They tend to come with family and friends and spend time at the farm to wander around the trails and garden. ▪ Value the sense of community and the organic, healthy lifestyle ▪ Close association with the UBC Farm brand
<p>Non Visitor ▶</p>	<ul style="list-style-type: none"> ▪ Value healthy lifestyle, fresh and tasty local produce ▪ UBC brand association (rather than UBC Farm brand) ▪ Large proportion of this group are students and on-Campus (non-residents)

4.3. The marketing mix

The table found in Appendix VIII summarises the key elements of the marketing mix for each target segment. There are two elements that are critical to the overall success.

- Increasing the overall awareness of UBC Farm, its location and opening time. Our market research identified a lack of awareness of UBC Farm in off-campus residents, and that many that are aware of UBC Farm were unsure of its location. (Appendix VII)
- Developing new sales channels to get UBC Farm produce to the non-visitor segment, such as pre-paid weekly delivery of produce which has proved interesting to some area residents.

4.4. Implementation

The marketing plan requires an additional part time student employee to take responsibility for developing and supporting new sales channels. This will free up the existing marketing co-ordinator to develop awareness of UBC Farm.

Implementation of the marketing plan requires careful management to ensure that the growth in demand is balanced with the availability of supply. Significant increases in supply are not projected until the 2007 season, therefore the increase in marketing campaign spending is not projected to commence until the end of the 2006 season.

UBC Farm's reporting will be expanded to track the marketing objectives to ensure that the increased investment in marketing is delivering the target objectives, and that the targeted objectives are resulting in appropriately increased sales.

Further, to keep abreast of market trends and customer opinion, it is recommended that UBC Farm continue to gather customer feedback through regular surveys and continuous market research. The information gathered will act as a check against the validity of the current marketing plan and help in the creation of future plans.

5. OPERATIONAL STRATEGY

The plan is to increase the UBC Farm's productive area from the current three acres to eight and to increase the average income per acre through a combination of higher yielding product, lower wastage and increased efficiency.

5.1. Overview of current operations

UBC Farm currently produces over forty types of produce, including a wide variety of seasonal vegetables as well as fruits, herbs and flowers. In recent year eggs and prepared salad mix have been added to the range require new operational processes to be adopted. UBC Farm uses basic farming equipment to assist with production, relying heavily on labour. Produce are currently planted in three acres of cultivated land as well as two large greenhouses. Production is only in the summer season, from the beginning of May until October. It does not produce any winter vegetables. Although not currently 'Certified Organic', UBC Farm uses organic methods mimicking the function and structure of a natural ecosystem.

5.2. Organic farming

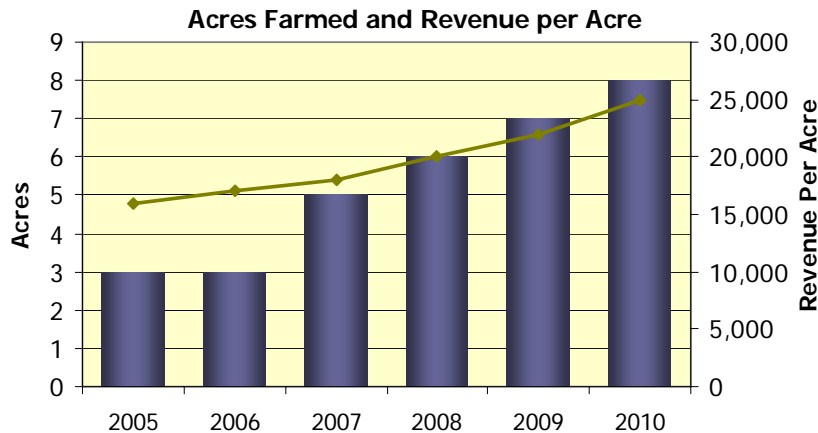
Compared to mainstream production methods, organic fruits and vegetables have inferior yields. However, the price commanded by majority of organic produce is generally higher. Overall, the yield and price combinations show that approximately half of the organic crops generate higher revenue per acre as than for conventional methods (see Appendix IX).

Organic Certification

Currently there is no official certification in Canada for organic food labelling. However, the voluntary Canadian Organic Standard is being developed by the Canadian General Standards Board. The draft of this coming organic regulation states basic requirement for the process of organic food that UBC Farm will need to comply with (see Appendix IX).

5.3. Increasing UBC Farm's productive capacity

UBC Farm has 15 Acres of which three are currently farmed. The plan is to increase the area used for production to eight acres over a five year period as shown below. On average it takes at least one year to bring land into production as it has to be prepared for the specific crops that are to be grown. The chart includes this lag:

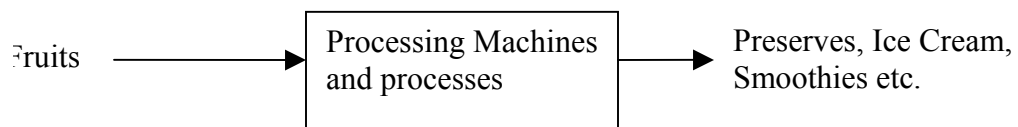


5.4. Increasing UBC Farm's revenue per acre

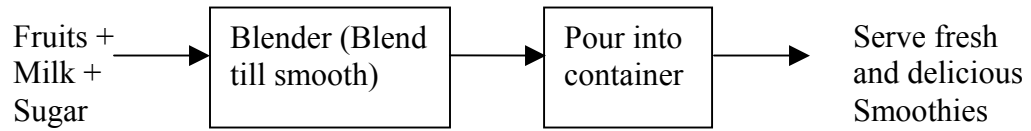
There are three key operational practices to increase the revenue per acre from UBC Farm, the production of processed produce, season extension and yield management.

Processed produce

Processed produce like preserves, smoothies and ice cream add value and boost revenues. Appendix X details the additional profit available from processed produce relative to standard fresh produce. Every different processed product requires investment in different machines.



Market research (Appendix VII) indicated that UBC students preferred smoothies to other processed goods therefore we initially concentrate on producing smoothies. Smoothies are made by mixing fresh or frozen fruits with milk.



Season Extension

Average annual revenue per acre can be increased by extending the time that land is productive by starting the seasons earlier through better winter preparation and establishing a winter crop.

Yield Management

As the land farmed increases UBC Farm will have more opportunity to grow crops purely for revenue purposes. Currently with only three acres farmed, and a mandate to produce a diversity of produce, the Farm cannot easily allocate areas just to produce large amounts of a crop for the sole purpose that it generates a higher revenue yield.

5.5. Operational efficiency

A key driver of profitability is the amount of labour required to successfully manage the farmed area. To realise operating efficiencies requires the recruitment of a full time, experienced farm manager. This will maximise the overall yield from the available space and increase the productivity of existing workers. The investment in a new utility tractor will also improve operational efficiency and reduce the average variable cost per acre.

5.6. Management Team and HR Operations

Please see Appendix V for a detailed organisational structure chart.

Farm-workers - Industry Experience & Education

UBC Farm employs students for the running of day-to-day operations. As the facility is primarily designed to be educational, this is one of the ways in which students gain hands-on agricultural experience. Students are also encouraged to create and execute new projects that add both to their learning and to the Farm's production. UBC Farm has a policy of paying students a higher wage than the average farm labourer.

Farm Manager

The business plan requires a professional farm manager to be hired to support the existing team. Not only would a professional manager improve UBC Farm's efficiency, they would also enhance the educational experience, thus further elevating the Farm's academic reputation.

5.7. UBC Operating Environment & Constraints

UBC Farm is subject to the same constraints and regulations as other parts of the university. Whilst Farm management are free to make day to day operating decisions more significant decisions require escalation to the UBC Farm Advisory Committee and potentially higher up through the UBC administration meaning that bigger decisions or investments can take a significant amount of time to finalise.

6. FINANCIAL ANALYSIS

This section contains information on the required investment, the return from that investment, financial sensitivities, and social value generation. It also identifies the cash flow funding requirements on an annual basis.

6.1. Current financial position

In the year to March 2006 UBC Farm will generate revenues of \$55,000 with expenditure of \$155,000 resulting in a net deficit of \$100,000 that has been covered by grant funding and individual and corporate donations. Without the proposed investment plan, the annual deficit is expected to remain at or around this level.

6.2. Investment Plan

To support a step-change in the commercial self-sustainability of UBC Farm a number of capital items have been identified for investment, including general items such as a utility tractor (\$50,000) and farm truck (\$40,000) and a number of project specific investments such as a Smoothie machine and a chicken shed. To support the community and academic objectives of UBC Farm, investment has been included for a new portable classroom unit and the removal of the exiting dilapidated unit. A full investment schedule is provided in Appendix XI.

6.3. Key financial drivers

Income - The primary sources of revenue and the drivers behind each source are:

<p>Farm Produce ▶</p>	<ul style="list-style-type: none"> ▪ UBC Farm generates revenues through multiple channels (Market Garden, Retail, Direct, Restaurants) and through the sale of both Fresh and Processed product. Key drivers of this revenue stream are: <ul style="list-style-type: none"> ▪ Quantity – total volume of produce available for sale, driven by the number of productive acres in use and number of weeks per year of use ▪ Price – rises with increased mix of processed foods and increased average yield through production of more high value produce (e.g. strawberries, eggs, micro-greens)
<p>Academic/Community ▶</p>	<ul style="list-style-type: none"> ▪ Academic and Community activities generate income based on a small fee. e.g. \$5 per pupil. This activity is part of the social and community objective of UBC Farm.

Expenditure - Excluding depreciation, UBC Farm’s main expenditures are employee costs and associated benefits and expenses. These are both (semi) fixed and variable in nature:

- **Fixed** –include the Program Co-ordinator, the new post of Farm Manager, Market garden co-ordinator, Marketing co-ordinator(s) and Outreach Program co-ordinator
- **Variable**– Farm workers are employed ‘in season’ and vary with the number of acres of land used for production
- **Other costs** - marketing, office administration and Market Garden expenses

6.4. Summary Income Statement

There is a lag between the initial investment and increase in revenues and moving into a positive net surplus position. This is primarily due to the long lead time between preparing the farm land for production and the land actually becoming productive. The investment in 2006

and 2007 will start to impact the results from 2008 when the benefit of increased output and production efficiencies becomes apparent. (Please refer to Appendix XII and XIII for details.)

Income Statement	2005	2006	2007	2008	2009	2010
Revenue						
Market Garden (Fresh and Processed)	46,828	61,100	107,400	150,000	189,100	252,000
Education & Community	5,578	6,000	8,000	10,000	10,000	10,000
	52,406	67,100	115,400	160,000	199,100	262,000
Net Income by segment						
Market Garden (Fresh and Processed)	(20,561)	(52,173)	(17,109)	17,482	46,449	99,215
Education & Community	(14,062)	(13,640)	(11,640)	(9,640)	(9,640)	(9,640)
	(34,623)	(65,813)	(28,749)	7,842	36,809	89,575
Shared Overhead	64,980	72,329	83,043	83,043	83,043	83,043
Net Surplus/(Deficit)	(99,603)	(138,141)	(111,792)	(75,201)	(46,234)	6,532

6.5. Cash Flow and Investment appraisal

The cash flows assume a continued level of grant funding up to the point where UBC Farm starts to generate a net surplus in 2010.

Cash Flow	2005	2006	2007	2008	2009	2010
Cash flow from:						
Operations	(99,603)	(123,149)	(91,085)	(54,494)	(25,527)	27,239
Investment		(124,500)	(40,000)			
	(99,603)	(247,649)	(131,085)	(54,494)	(25,527)	27,239
Financing (Grants/Donations)	105,730	110,000	110,000	110,000	110,000	
Net Cash Flow	6,127	(137,649)	(21,085)	55,506	84,473	27,239

Investment Appraisal	
Discount Rate	8%
NPV	193,728

The net present value of the proposed investment is \$194,000. This is based on a discount rate of 8% for UBC projects. The actual cost of capital for UBC is not publicly available. However, UBC does receive preferential rates on debt therefore 8% is considered a conservative rate. The cash flow after 2010 has been included in the NPV analysis as perpetuity with no further growth.

The NPV analysis above does not include a valuation of the social benefit generated through UBC Farm's academic, community and research activities, as discussed in section 8.

6.6. Sensitivity Analysis

All of analysis above comes from the expectation based on the currently available information. To valuate the possible risks, a sensitivity analysis is also made as below.

Criteria including productive acre and crop yield are considered.

<i>Event/Scenario</i>	Impact on Surplus/(Deficit)				
	2006	2007	2008	2009	2010
1 productive acre less per year	-	(19,800)	(23,000)	(25,300)	(25,000)
50% less crop yield in a year (2007)	-	(49,500)	-	-	-
No worker efficiency realized	-	(3,228)	(4,842)	(6,455)	(8,069)
More processed in sales mix	-	4,500	12,000	23,100	40,000
No Processed sales	(5,100)	(9,000)	(18,000)	(23,100)	(40,000)

6.7. Funding

The vision for UBC Farm requires \$200,000 capital investment. The farm is still growing and hence does not have the sufficient reserves to fund its own capital expenditure.

Funding can be acquired from the following:

- **UBC Grants or Loan:** UBC grants have kept the farm alive to date, with an average \$50,000 grant per annum. A loan or grant or a combination are the most feasible option to fund the required investment. A loan by UBC could be structured for an appropriate duration.
- **Banks and other financial institutions:** There is a growing trend for banks and financial institutions to fund corporate social responsibility related sustainable projects. However, they typically require collateral against which they grant the loan.
- **Venture Capital:** VCs generally ask for a stake in the project as part of the deal. As UBC Farm is the property of UBC this limits this option. Another drawback is the fact that the VC normally withdraws their money from the project fairly quickly for instance in 3 years.

7. CRITICAL RISKS

No business is risk free, but the key to success in any business is to make business and strategic decisions taking into consideration the risks. Few of the risks that our plan is susceptible to are as follows:

Organic market decline: There is always the risk of a decline in demand for organic foods. This reduction in demand will directly affect UBC farm's sales and revenue (especially direct sales and sales through farmers market).

Soil degradation and exhaustion: Soil degradation reduces the ability to produce higher yield per acre and in turn the overall produce level. However, at the UBC farm this risk is reduced by producing produce organically.

Crop failure: There may be crop failures due to larvae such as wire worm. These failures can have a devastating effect on UBC Farm's produce. There have been instances when farms have lost their total produce to "crop pests." This is a high risk for organic farms, who avoid using pesticides.

Land usage for housing: The UBC farm is located strategically near the UBC main campus near grocery stores and student population. There is always a threat from construction companies who want to make residential buildings in place of the farm.

Decline of UBC brand: The UBC farm is directly connected to the brand image of UBC. A decrease in UBC brand image will have negative impacts on the farm.

UBC bureaucracy: The farm is a part of UBC. Hence, to get permission regarding any major decisions about the farm (reconstruction or investments for instance) the authorization of the UBC board is required. This can very well be a hindrance in terms of slow decisions, expansion or reconstruction

8. SOCIAL IMPACT ANALYSIS

The core focus of the farm revolves around community involvement, enrichment and providing healthy food. The Farm does not focus only on profit maximization but rather on the triple bottom line. This is exhibited by operating the school programs at a deficit and paying students above the standard farm labourer wage. (Community enhancement rather than profit maximization).

8.1. Socially responsible operations

The processed foods (smoothies) manufacturing and sales will involve minimal packaging, waste minimization and reusable methods. Organic farming by default does not use harmful chemicals, which in itself is an environmentally beneficial activity. UBC Farm aims to be a “Zero Footprint” operation.

8.2. Social Benefits

The Social Marginal Benefit to society obtained from the educational programs, such as the *Community and Schools Program* and the *Community Urban Agriculture Program*, is higher than the Private Marginal Benefit to UBC farm.

The majority of benefits arising from the existence of the UBC Farm are difficult to measure. The increase in the value of the surrounding residential properties as a result of a vibrant, thriving farm, and the health benefits derived from the promotion of a healthy lifestyle focussing on the consumption of organic foods are difficult to quantify. Also difficult to place a value on are the benefits that university itself derives by hosting a facility as unique as an urban farm.

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Interviews with:

Mark Bomford, Program Coordinator, UBC Farm

Dr. Tim Durrance, Professor and Director, Faculty of Agricultural Sciences

Brenda Sawada, SEEDS Coordinator, UBC Sustainability Office

Dr. Brent Skura, Program Director, Global Resource Systems, Faculty of Land and Food Systems

Dr, Roxana Verdini, UBC Faculty of Land and Food Systems

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APPENDIX I – INTERNATIONAL PROGRAM (SUMMARY)

Overview

A four week program for government officials and students worldwide who want an in-depth knowledge of organic methods and the commercial side of organic farming.

Rationale

- Growth of Organic consumption is increasing the demand for related education
- As one of a small number of commercial and academic Organic farms, UBC is uniquely placed to offer the program
- Existing relationships with Korean universities/government agencies provides a good start point for marketing the program
- Marketing costs for the program will be relatively low as it is possible to utilise students course work activities to investigate new markets and existing UBC relationships to promote the program globally

Financial Summary

The program generates course fees estimated at \$750 per attendee per week based on prior experience and rates at competing institutions¹. The table shows an illustrative income statement for the program (this data is not included within this business plan's projections).

Program Metrics	2006	2007	2008	2009	2010
Number of courses	1	1	3	4	5
Attendees per program	10	15	15	15	15
Course price per week	750	750	750	750	750

	2006	2007	2008	2009	2010
Income	30,000	45,000	135,000	180,000	225,000
<i>Fixed Costs</i>					
- Professor	11,000	11,000	11,000	11,000	11,000
- Marketing & Admin	5,000	10,000	10,000	10,000	10,000
<i>Variable costs</i>					
- Materials & Admin	10,000	15,000	45,000	60,000	75,000
- Accommodation	4,000	6,000	18,000	24,000	30,000
Total Expenditure	30,000	42,000	84,000	105,000	126,000
Surplus/(Deficit)	-	3,000	51,000	75,000	99,000

Marketing costs for the program will be relatively low as it is possible to utilise student's course work activities to investigate new markets and existing UBC relationships to promote the program globally

¹ Competitors include: University of California (Santa Cruz) and University of Victoria (Vancouver Island)

APPENDIX II – EVENTS & SERVICES

Overview

By offering itself as a venue for events and services, the Farm can achieve incremental revenue with little recurring expenditure.

Description

Although the Farm is in a beautiful location, its current buildings can not be called picturesque. Thus, in order to expand into the event market, a new and beautiful farm facility needs to be constructed which constitutes significant expenditure.

However, there is one area that can be rapidly converted to provide income. Pacific Adventure Learning (PAL), a corporate team building company that already operates UBC's Ropes Course, is interested in combining this activity with team cooking classes at the UBC Farm. A setup, involving enough facilities for a class of twenty people, can be created at minimal cost in the existing facility.

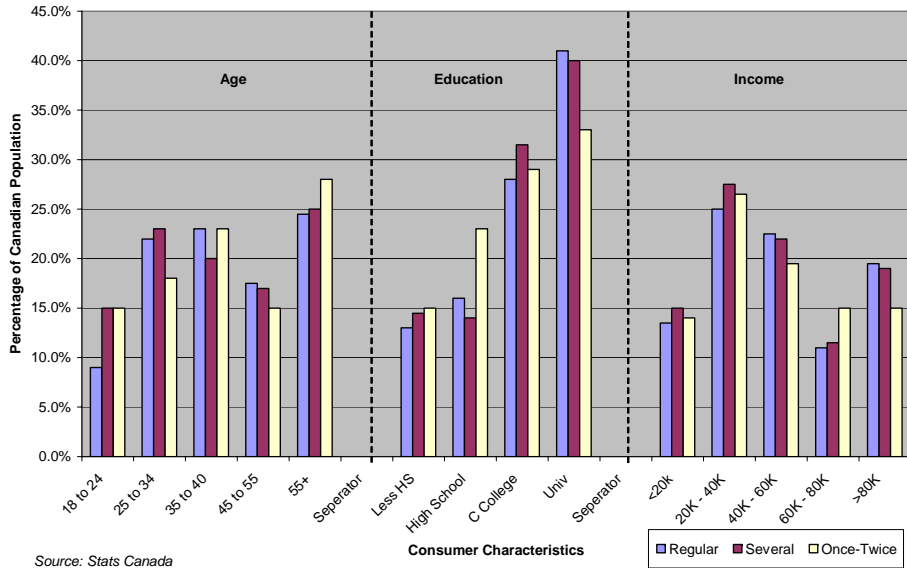
It is suggested that PAL should be charged \$50 per person for the facilities and the organic foods produced by the farm, for a total of \$1000 per full session. PAL will be responsible for providing their own team-building instructor. The cost of converting the current space only entails the purchase of two complete sets of new, top-end appliances. Allowing \$10,000 for each set, plus another \$5000 for miscellaneous kitchen items, brings the total to \$25,000. This cost can be recovered after only 25 full classes.

PAL originally approached the UBC Farm to ask if the kitchen facilities could be made available. Thus, if the facility could be created, there is already one interested customer. It would be the only kitchen classroom in the vicinity of the ropes course, providing an ideal situation for both parties.

APPENDIX III – TARGET MARKET

APPENDIX III-A: CONSUMER PROFILE

Canadian Organic Consumer Profile



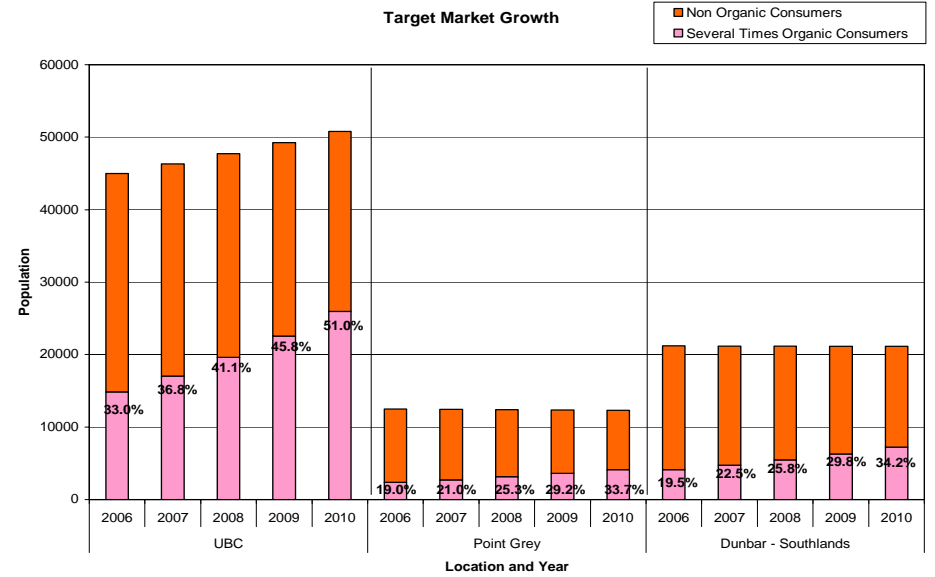
Source: Stats Canada

Source: (Rosalie Cunningham, 2001)

- **Regular** – Regularly buy organic food (Heavy Buyers).
- **Several** – Buyers who buy organic food several times a year (Light Buyers).
- **Once-Twice** – Buyers who buy organic food once or twice a year.

APPENDIX III-B: TARGET MARKET

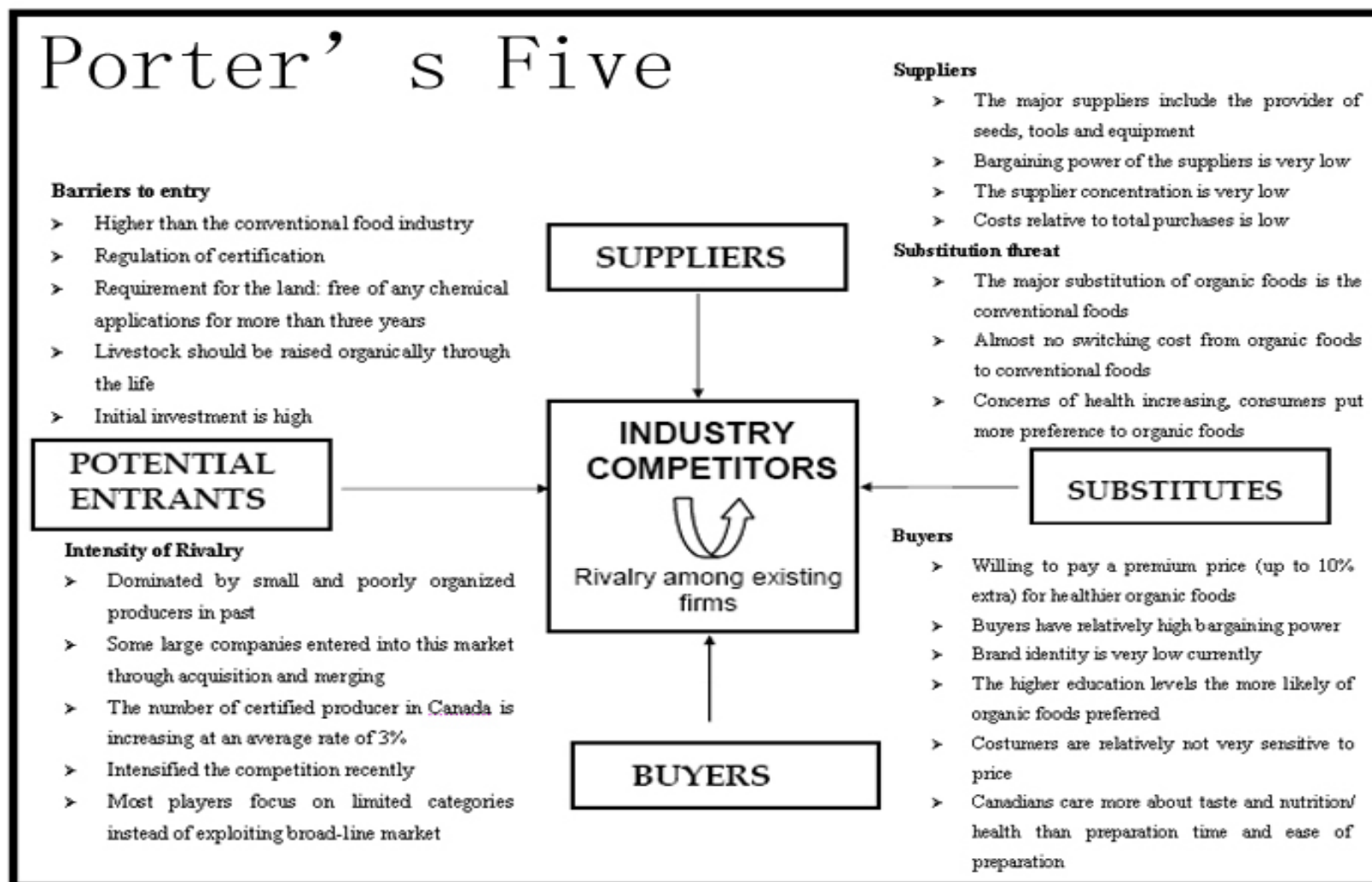
Target Market Growth



Source: (Cunningham, 2001), (Vancouver website, 2001a), (Vancouver website, 2001b), (TUPC website, July 2005), (TUPC website, March 2005). There is some approximation in the data as population trends are project depending on 1996-2001 data. Organic consumer growth data is for Canada which has been used to predict for the locations above.

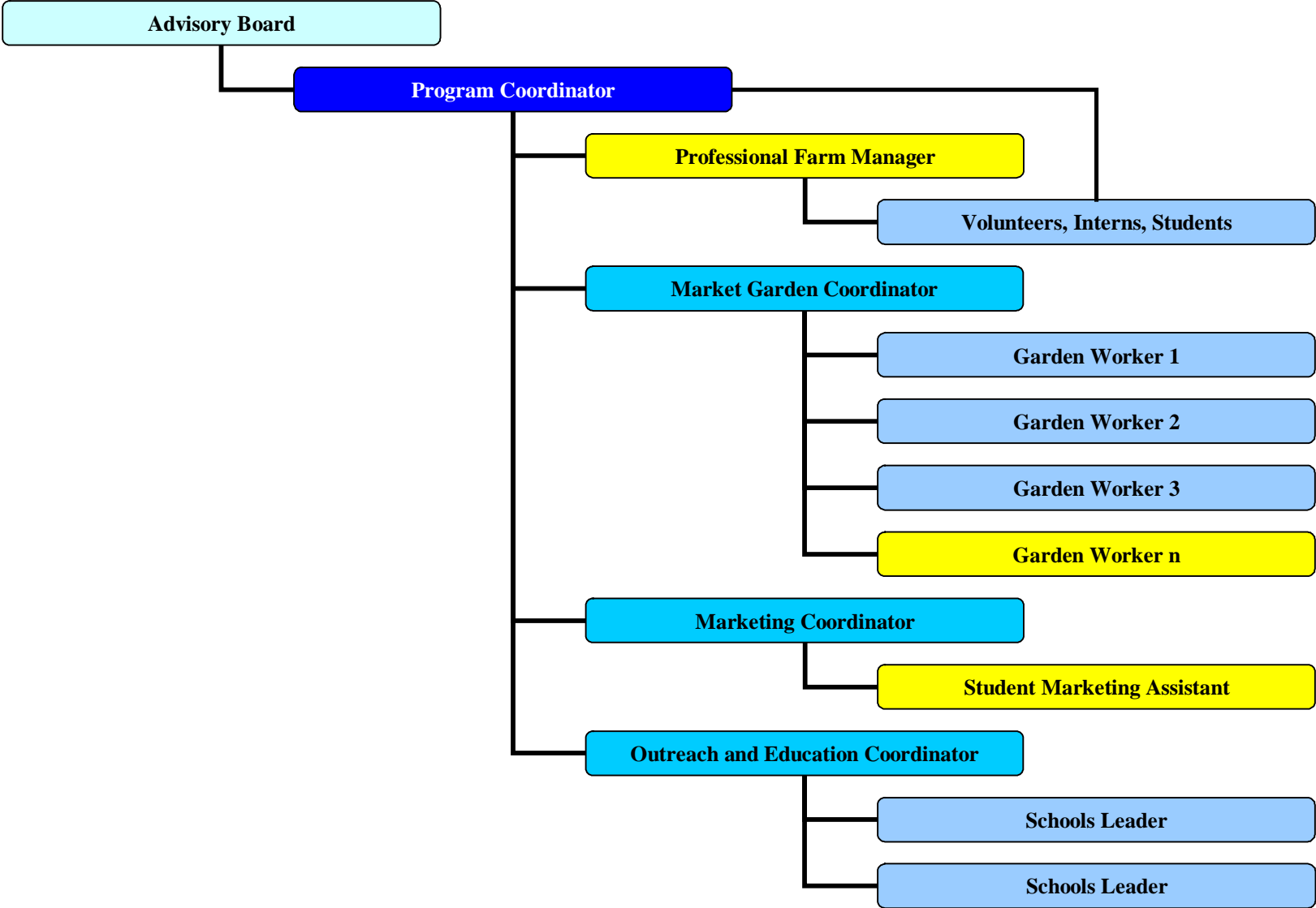
Please Note: The above graph does not show the growth in the South Campus Area where housing for approximately 4000 residents will be built

APPENDIX IV – PORTER’S FIVE FORCES - INDUSTRY ANALYSIS



Original diagram taken from class slides by Tony Boardman, content provided by authors

APPENDIX V – ORGANISATIONAL STRUCTURE



APPENDIX VI – CUSTOMER MARKET SURVEY

In summer 2005 UBC Farm conducted an online survey of 94 of its customer base who have provided email addresses for regular updates.

Summary of selected results:

Geo-demographics

- 80% of UBC Farm customers are between 26 and 60 years of age
- 26% reside in the are of UBC, UEL and West Point Grey
- 54% live in other parts if Vancouver
- 54% of customers have a current affiliation with UBC (students, teaching, staff0)

Purchasing behaviour – importance of key aspects

High importance	Average importance
<ul style="list-style-type: none"> ▪ Freshness ▪ Locally grown (BC, UBC, lower mainland) ▪ Organic 	<ul style="list-style-type: none"> ▪ Convenience ▪ Choice ▪ ‘Certified Organic’

UBC Farm - Perceptions

Excels at	Potential improvements
<ul style="list-style-type: none"> ▪ High Quality produce ▪ Reasonable prices ▪ Customer services 	<ul style="list-style-type: none"> ▪ Variety ▪ Market overall

UBC Farm – Future development areas

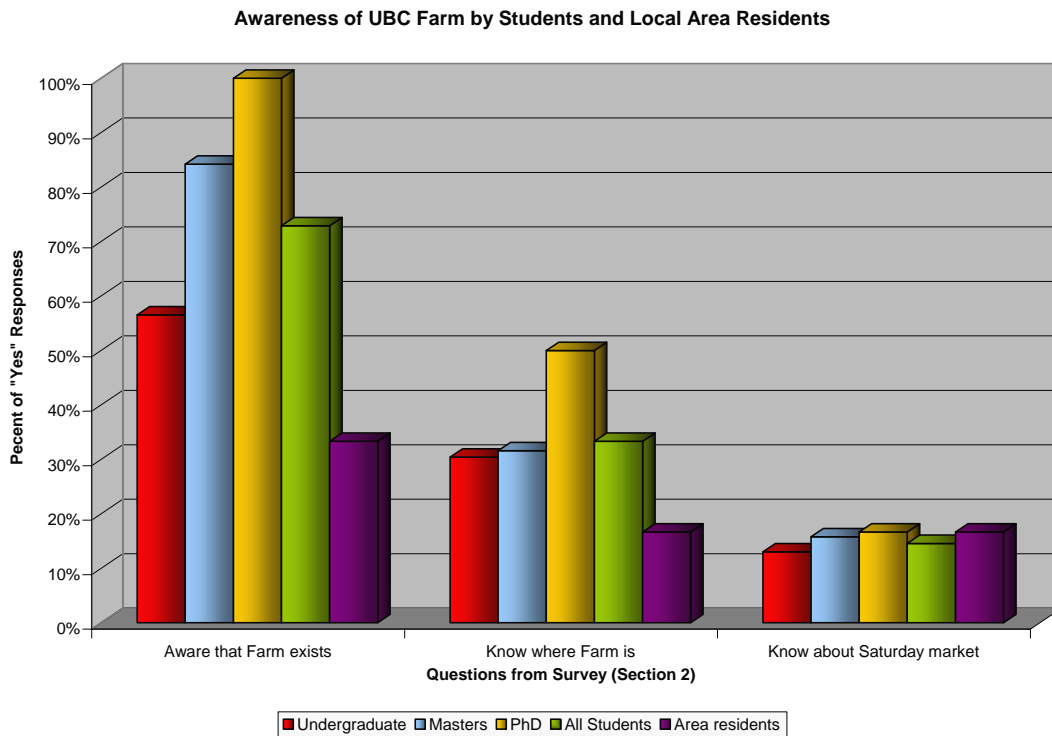
- Open longer, more often
- Increase diversity of produce
- Grow more
- Invite other vendors BUT not other vendors with processed goods

APPENDIX VII – MARKET SURVEY

The following questions were asked of randomly chosen individuals on the UBC Campus and in the Point Grey area, and the responses received shown in a graphical format. The sample size was 92 individuals, and the information was used to get a feel for overall market awareness and perception, based on the following key questions.

Awareness of UBC Farm's existence and location:

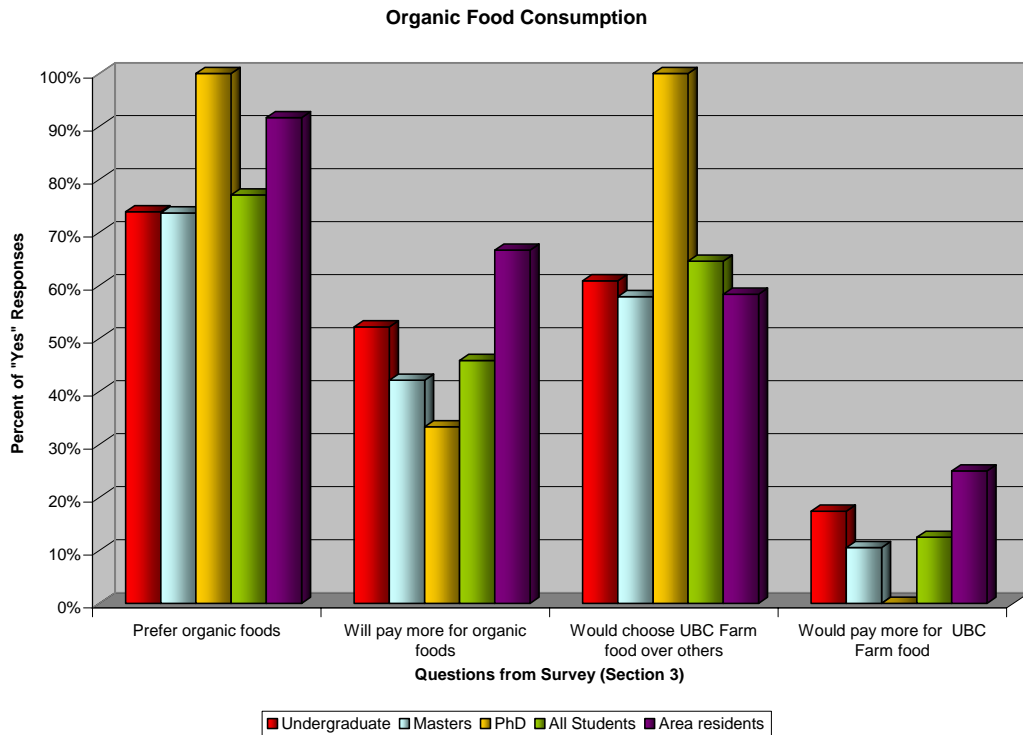
- Are you aware that UBC has a Farm?
- Do you know where the farm is located?
- Do you know where you can go to purchase UBC Farm food?
- Do you know that the farm holds a weekly Saturday market in the spring and summer?



APPENDIX VII – MARKET SURVEY (CONTINUED)

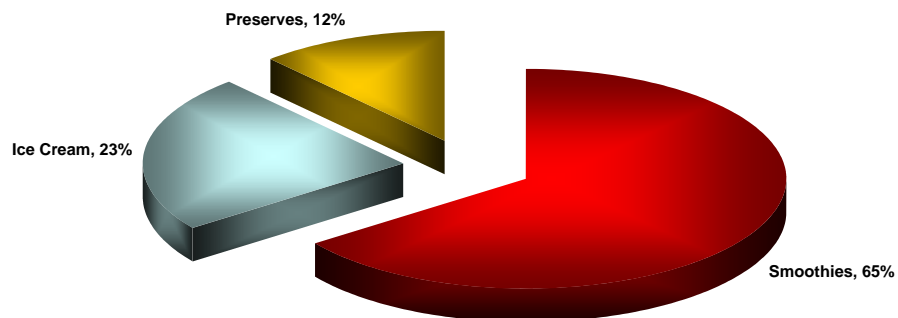
Preference for organic foods and willingness to pay:

- Do you prefer to consume organic foods?
- Are you willing to pay more for organic foods?
- Assuming the cost to be the same, would you choose UBC Farm organic foods over other organic foods?
- Would you pay more for UBC Farm organic foods?



Interest in processed foods:

- What product, made from organic foods, would you be most likely to purchase on campus?



APPENDIX VIII – MARKETING MIX

	Activity & Targets	Farm Visitor	Non-Visitor
Promotion	<p>Build UBC Farm location and brand awareness, increase number of weekly visitors, through:</p> <ul style="list-style-type: none"> - Inclusion on UBC Campus tours and higher visibility on campus map. - Establish relationships with the on-campus home developers to be included within their sales promotion materials. - Undertake a start of season leaflet drop to UEL and West Point Grey - Improve and enhance signage on campus and Marine Drive - Continue positive press coverage and PR activity. 	✓	
Channels	<p>Development of new on and off campus channels</p> <ul style="list-style-type: none"> - Establish partnership with SPUDs, a Vancouver based organic produce delivery operation - Expand the number of local restaurants supplied - Develop existing direct box delivery program to include on-campus self-catered residences and other UEL, West Point Grey residences - Increase number of on-campus outlets – for example: Thunderbirds games for Smoothies 		✓
Product	<p>As productive land capacity increases, crop planting can become more market driven. For example, Micro-greens currently have high demand (and price) and therefore 2006 production should increase.</p>	✓	✓
Pricing	<p>Pricing will continue to reflect the average organic prices in stores such as Capers and Choices. Processed produce (e.g. smoothies, preserves) prices will be based on market rate.</p> <p>Market research (Appendix VII) indicates an increased willingness to pay for organic produce but not an increased willingness to pay extra for organic produce from UBC Farm.</p>	✓	✓

APPENDIX IX –ORGANIC FARMING OPERATIONS

Organic Yield Summary

Examples of comparison of fruit and vegetable produced with organic vs. conventional methods. Canada 2000/2001				
Vegetable / Fruit	Change in Yield Vs Price		Gross Return per acre	
	Organic	Organic	Organic	Conventional
	Yield (%)	Price (%)	(\$)	(\$)
Beets	-56	229	3,600	2,500
Carrots	-40	236	5,400	2,700
Tomatoes	-23	66	6,300	4,800
Apples	-21	73	4,000	3,000
Pears	22	62	6,400	3,300
Strawberries	-9	-1	4,000	4,700

Source: William Parsons, September 2002

Organic Certification Requirements

1. Production units should not be alternated. Switching between organic and non-organic produce is not allowable.
2. “Buffer Zones must be established if there is any concern that contamination could occur, as air and water may carry contaminants.”
3. “Crops grown in the buffer zones must be considered as non-organically grown products.”
4. “Measures shall be taken to minimize risks from neighboring areas, including spray drift and exposure to or contact with prohibited substances.”
5. “Soil erosion shall be controlled by good management practices such as appropriate cultivation practices, reduced tillage, planned water drainage and other controls in accordance with the soil type, local conditions and crop.”

(The Canadian Organic Standard, 2005)

APPENDIX X – OPERATIONS: REVENUE PER ACRE

Processed produce

The analysis below (Cost/Volumes/Profits) gives a clear picture of the increased profitability of processed produce compared to ‘raw’ produce.

Value addition per kilo of strawberry *				
	Selling Produce	Selling Smoothies		
		Estimate	VC > 50%	FC > 50%
Sales	\$4.50	\$12.00	\$12.00	\$12.00
Variable costs	\$1.00	\$2.00	\$3.00	\$2.00
Contribution Margin	\$3.50	\$10.00	\$9.00	\$10.00
Fixed Costs	\$1.00	\$3.00	\$3.00	\$4.50
Net Income	\$2.50	\$7.00	\$6.00	\$5.50

The figures above are estimates of the costs and sales involved

Breakeven revenue per acre analysis

The table below shows the total fixed costs and the variable cost per acre under production. The analysis then shows the effective number of acres that need to be in production to breakeven for different levels of ‘revenue per acre’. The orange shaded area shows where the revenue per acre is at the upper end for BC organic producers.

These levels are achievable with the production of the higher margin processed produce.

Break even workings (2007 Base year)

Total Fixed	146,249
Variable Costs/per acre	10,118

Revenue per acre	17,000	19,000	21,000	23,000	25,000	27,000	29,000
Contribution margin per acre	6,882	8,882	10,882	12,882	14,882	16,882	18,882
Breakeven Acres	21	16	13	11	10	9	8

APPENDIX XI– INVESTMENT SCHEDULE

Item	Purchase	Cost	Depreciation Life*	Depreciation Charge pa
Portable Unit	2006	67,000	10	6,700
Tractor (utility)	2006	50,000	7	7,143
Truck	2007	40,000	7	5,714
Smoothie machine	2006	3,000	5	600
Chicken Shed	2006	3,500	10	350
Refridgerated Trolley	2006	1,000	5	200
		164,500		

** Depreciation rates based on UBC accounting policy (UBC Annual Report)*

Assumptions and basis for certain calculations:

- Portable unit cost - average of two quotations (from Mark Bomford - UBC farm coordinator and ATCO Structures)
- Tractor (utility), truck, smoothie machine, chicken shed, refrigerated trolley costs based on market research and interview with Mark Bomford - UBC farm coordinator.
- Depreciation method used - straight line depreciation method based on UBC depreciation policy from http://www.finance.ubc.ca/documents/financial_statements/2004-05/notes_for_statements_2005.pdf

APPENDIX XII – SUMMARY INCOME STATEMENT

Consolidated Income Statement to 2010

	2005	2006	2007	2008	2009	2010
Revenues						
Market Garden (Produce)	46,828	61,100	107,400	150,000	189,100	252,000
Education & Community	5,578	6,000	8,000	10,000	10,000	10,000
	52,406	67,100	115,400	160,000	199,100	262,000
Direct Costs						
Market Garden (produce)	67,389	113,273	124,509	132,518	142,651	152,785
Education & Community	19,640	19,640	19,640	19,640	19,640	19,640
	87,029	132,913	144,149	152,158	162,291	172,425
General overhead costs						
Program Co-ordinator	33,134	33,134	33,134	33,134	33,134	33,134
Marketing and Projects	23,330	15,686	20,686	20,686	20,686	20,686
Operating Expense	8,516	8,516	8,516	8,516	8,516	8,516
Depreciation	0	14,993	20,707	20,707	20,707	20,707
Shared Overhead	64,980	72,329	83,043	83,043	83,043	83,043
Surplus/(Deficit)	(99,603)	(138,141)	(111,792)	(75,201)	(46,234)	6,532
Grant Funding						
UBC Grant Funding	51,653	55,000	55,000	55,000	55,000	55,000
Donations and Grants	54,077	55,000	55,000	55,000	55,000	55,000
Overall Surplus/(Loss)	6,127	(28,141)	(1,792)	34,799	63,766	116,532

A more detailed income statement for the Market Garden follows in Appendix XII.

APPENDIX XIII - MARKET GARDEN INCOME STATEMENT

Market Garden – detailed income statement

<u>Income</u>	2005	2006	2007	2008	2009	2010
Market Sales - fresh produce	35,250	32,130	52,650	61,200	71,995	80,000
Direct sales - fresh produce	2,350	4,590	12,150	20,400	32,725	48,000
Restaurant sales - fresh produce	9,228	9,180	16,200	20,400	26,180	32,000
Total Fresh produce	46,828	45,900	81,000	102,000	130,900	160,000
Processed goods	-	10,200	18,000	36,000	46,200	80,000
Farmers Market Income	-	5,000	8,400	12,000	12,000	12,000
Total Income	46,828	61,100	107,400	150,000	189,100	252,000
<u>Direct Costs</u>						
Staff Costs	53,490	97,500	102,000	106,500	113,000	119,500
Other costs (seeds etc)	9,683	9,683	16,138	19,366	22,594	25,821
Benefits (12%)	7,294	11,700	12,240	12,780	13,560	14,340
Wage subsidy	(3,078)	(5,610)	(5,869)	(6,128)	(6,502)	(6,876)
Total Costs	67,389	113,273	124,509	132,518	142,651	152,785
Net Income	(20,561)	(52,173)	(17,109)	17,482	46,449	99,215

Employee Schedule

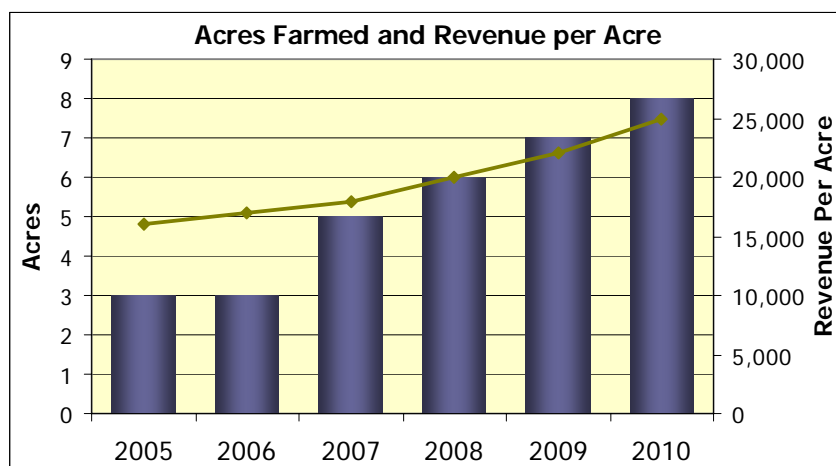
<u>Employees</u>	2005	2006	2007	2008	2009	2010
Number						
- Co-ordinator	1.0	1.0	1.0	1.0	1.0	1.0
- Full-Time Farm Manager	0.0	1.0	1.0	1.0	1.0	1.0
- Farm worker	3.0	3.5	4.0	4.5	5.0	5.5
Cost pa						
- Market Garden Co-ordinator	25,715	30,000	30,000	30,000	30,000	30,000
- Farm Manager		36,000	36,000	36,000	38,000	40,000
- Farm worker	9,000	9,000	9,000	9,000	9,000	9,000
Total Costs in year	53,490	97,500	102,000	106,500	113,000	119,500

Assumptions and basis for certain calculations

* The 2005 data is based on information from the UBC Farm budget and other financials, and from interviews with Mark Bomford (coordinator at UBC farm) unless otherwise specified.

* Total fresh produce and processed food revenue derived from calculations in "Land used for production" statements as shown in Appendix XIV.

APPENDIX XIV - MARKET GARDEN



PRODUCTION ECONOMICS

	2005	2006	2007	2008	2009	2010
Productive Acres	3	3	5	6	7	8
Farm Workers	3	3.5	4	4.5	5	5.5
Workers / Acre	1.00	1.17	0.80	0.75	0.71	0.69
Revenue / Acre	16,000	17,000	18,000	20,000	22,000	25,000
Total Base Revenue	48,000	51,000	90,000	120,000	154,000	200,000
Base revenue to processed produce	0	(5,100)	(9,000)	(18,000)	(23,100)	(40,000)
Net: Fresh produce revenue	48,000	45,900	81,000	102,000	130,900	160,000
Net: Processed Produce revenue	-	10,200	18,000	36,000	46,200	80,000
Total 'produce revenues'	48,000	56,100	99,000	138,000	177,100	240,000
% of output processed		10%	10%	15%	15%	20%

Assumptions and basis for certain calculations:

- * All of the 2005 information is based on Interview with Mark Bomford (coordinator at UBC farm) and UBC farm financials unless otherwise specified.
- * Efficiency level for workers increases per acre from 2007 onwards as a result of new equipment, professional farm management, and general economies of scale
- * Land used for production increases as efficiency increases and as the farm increases its activity level
- * Revenue generated from processed foods is twice of its production costs (based on market research and survey).