Strategic Development of B.C. Stone Fruit & Pear Varieties

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A Study for the B.C. Ministry of Agriculture

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Peach, nectarine, apricot, plum, prune and pear producers in British Columbia have experienced low profit margins and stagnant demand for several years. As a result growers have generally shifted to other crops such as apples and sweet cherries. Competition from other producers with lower production costs have also led to greater imports to Canada. This report addresses likely future conditions and presents a set of recommendations for the industry. Additional background information can be found in a separate report by the same authors that assesses current conditions within the B.C. stone fruits and pears sectors, with emphasis on variety improvements.

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Many growers, packers, intermediate marketers, retailers and others provided information and industry observations that were very helpful in preparing this report.

Steering committee members reviewed and commented on an earlier draft of this report. However the analysis, findings and conclusions are those of the authors.

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Introduction

This report is the second of two reports that evaluate stone fruit and pear variety needs and opportunities for tree fruit growers in British Columbia (B.C.). These reports were commissioned and funded by the B. C. Ministry of Agriculture.

This report covers future conditions and recommendations for the B.C. tree fruit industry with regard to variety development. For additional background, refer to the companion report, Assessment of Stone Fruit and Pear Varieties.

The authors of this report are Globalwise Inc., an economic consulting company in Vancouver, Washington in association with Belrose, Inc., Pullman, Washington and Postharvest Quality Consultants LLC, a consulting firm in Woodland, California. Globalwise and Belrose conduct a broad spectrum of economic analysis in the food and agriculture industries. Postharvest Quality Consultants conducts horticultural research for many types of fruits.

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In this report, stone fruit refers to peaches, nectarines, apricots, plums and prunes. Cherries are also a stone fruit but they are not considered here since sweet cherries were included in a separate report by the authors.

General Principle, Vision and Values

This strategic review centers on a specific strategy for the next 10 years and a tentative strategy for the subsequent decade. Long time horizons are necessary when dealing with variety development. This is because the prolonged time to conduct plant breeding, pre-commercial evaluation and finally market testing is a ten to 20 year undertaking. At the same time, there is the opportunity to obtain new varieties from other breeders but this still requires testing and evaluation.

The longer the extension of time for the strategy, the more general it becomes due to the more unforeseen conditions that will face the B.C. tree fruit industry. In that regard, the second decade plan is a provisional plan that proceeds with a more flexible outlook given external uncertainties but also greater ability of both the private and government sectors to exert more influence on outcomes given the time available for accomplishments. When the vision is clear and broadly adopted, it calls for more significant change than the shorter term strategy that is more specific but also more restrictive.

Vision

The B.C. Fruit Growers Association (BCFGA) recently stated its vision for the future in a draft document titled Tree Fruit Industry Strategy, version 4.4, dated January 26, 2015:

> "Our vision is a growing, vibrant tree fruit sector, a respected contributor to the regional and B.C. economy that is seen as a world leader in horticultural and marketing practices. To achieve this vision, the industry needs to focus on its competitive advantages and respond effectively to the challenges it faces."

The vision encompasses all phases of the industry that it can impact, from growing the fruit through its packing and first stage marketing. The industry realizes the need for competitiveness and the need to meet the key challenges that it faces.

Values Statement

It is never easy to succinctly state the values of an industry that is diverse in term of business size, cultural/ethnic makeup, land tenure, operator age, guiding business philosophy and long term personal goals. Even with these differences, it appears that the tree fruit industry generally subscribes to these key values:

- retain many small-scale growers
- protect farmland for long-term agricultural use to meet public policy objectives including environmental protection and local food production
- encourage independent business and decision-making on farms while pursuing overall industry strategies as a cohesive group
- the industry works cooperatively from growers to packers and marketers
- effectively respond to competitors by increasing grower profit

Near-term Future Environment for Growth

The potential market for B.C. soft fruits and pears in the next ten years will be heavily influenced by general world trends, by conditions in the rest of Canada, and by conditions in the provinces of British Columbia and Alberta, the core market for B.C. fruits.

Demographic Trends

While world population is forecast to increase rapidly in the next ten years, that growth will be primarily in developing countries. Population growth in the developed countries of Western Europe or Japan, once attractive export markets, will be either zero or negative. Canada and the United States will be exceptions among rich, developed countries, primarily because they have long welcomed immigrants, most of which enter as young adults.

The populations of B.C. and Alberta continue to grow faster than that of Canada as a whole, a favorable development. However, neither province will be immune from the twin problems of falling youth population, shrinking middle aged population, and a rising population aged 65 and over. Soft fruit and pear demand tends to be highest with higher income consumers and larger households, while preferences for peaches, nectarines and plums tend to be strongest among older households. In contrast, younger households appear to be more willing to try new items like pluots.

Economic Trends

In the first decade of the twenty-first century, the world economy was operating on all cylinders. Economic growth was stable in North America and Western Europe, and reached sustained, high levels in the BRICs countries (Brazil, Russia, India and China). The demand to feed these growing economies set off an industrial and agricultural commodity boom, in Asia, Africa, the Middle East and Latin America. B.C. and Alberta benefited particularly from the surge in demand for oil, wood products and other natural resources. This drove up demand for land and housing and created major cost increases for the B.C. fruit industry.

However, since the onset of the Great Recession in 2008, many developed countries have struggled to escape from the downturn. Recovery, where it has occurred, has been concentrated among the richest one-third of consumers. Brazil and Russia have fallen into recession, and growth has slowed dramatically in India and China. The value of China's imports, which had grown by 25 percent annually between 2002 and 2008, rose by only 0.4 percent in 2014. A major exception has been the growth in Chinese imports of fresh sweet cherries.

Most analysts now expect that it will take several more years for the world economy to regain its pre-2008 growth path. This suggests that for at least the first half of the 2015-2025 decade, world economic growth will be slow. The dramatic decline in world oil markets is likely to reduce the buoyancy of demand in B. C. and Alberta.

United States Major Trade Partner

The general economy and the fruit economy in B.C. are heavily influenced by trends in the economy of their major trade partner, the United States. The U.S. economy has been recovering more rapidly than that of other developed countries, but the rate of growth has remained consistently below three percent per year. However, as noted above, recovery has been stronger among the higher-income population.

The value of the Canadian dollar fell from 94.0 U.S. cents on July 1, 2014 to 78.6 U.S. cents on February 1, 2015. This alone makes U.S. products 20 percent more expensive in Canada and Canadian products more than 16 percent cheaper in the United States. The decline in the value of the Canadian dollar has provided Canadian producers of pears and soft fruits with sizable protection from U.S. imports. Since exports of these products are minimal, exports to the U.S. market are unlikely to be affected. While exchange rates tend to be volatile, long-term trends do tend to be persistent. For example, the last upward trend for the Canadian dollar against the U.S. dollar ran from 2001 to 2011. Many analysts forecast that the downward trend that began in 2011 could also last for a decade. This would provide a substantial boost in internal prices to the B.C. soft fruit and pear industries in the next few years.

International Competitive Trends

Competition in the world market for soft fruits and pears and has been becoming more intense over time. More and more of the production is in the hands of large, well-capitalized integrated firms that are grower-packer-marketers. This trend is far advanced in California and Washington State, the largest direct competitors to B.C. soft fruit and pears. These firms have modern, high-density plantings that can generate early, high production. They also have advantages in acquiring exclusive rights to promising new varieties. In soft fruits, they can supply their customers with a wide array of varieties in season. In pears, they can provide much larger volumes of the same varieties grown in B.C. In both soft fruits and pears, off-season supplies from the Southern Hemisphere have continued to expand. B.C. producers must tap unique market windows among major retailers, or local, direct or agri-tourism markets, to avoid damaging head-on competition with imported fruit.

Expected increases in world and U.S. production of soft fruit and pears means that increasing volumes will flow to export markets. As a major net importer of these products, Canada and B.C. will continue to be attractive targets.

Another ongoing competitive challenge will come from tropical and exotic fruit products. World production and exports of these products is also increasing rapidly. More affluent consumers, like those in Canada, are increasingly willing to substitute these products for traditional favorites like apples and pears.

Role of Food Activists

Food activists are playing an increasing role in how fruit products are produced, packed, stored and marketed. Many different activist organizations have distinct agendas that they seek to impose on agriculture, through public relations efforts, lobbying of bureaucrats, passing new laws and regulations, or through lawsuits. They have also gained access to organizations that advise governments on such issues. While many food activist groups originate in Europe or the United States, they are expert at spreading concern about their agenda issues rapidly to other countries. They have gained considerable influence over how farmers or agribusinesses use land, water, chemicals, or air; create or dispose of waste; treat farm workers, in terms of wages, fringe benefits, housing, rest periods, etc.; the effects of food products on food safety and health; and the processes by which products are produced, such as, organic, integrated pest management, or non-GMO.

The outcome of food activist pressure may mean restrictions in B.C. soft fruits and pears in terms of current practices, the requirement for additional, or replacement, practices, additional inspections, and additional record-keeping, all of which add to industry costs. While each issue may be of genuine social concern and the incremental costs small, the accumulation of demands from food activists has been a major factor in driving small operators out of farming.

Changing Consumers

Consumer tastes and purchasing behavior change over time in both predictable and idiosyncratic ways. They change relatively predictably as consumers move through different life stages, from schooling, to working, to increased incomes and responsibilities, to active retirement, and, finally, to the disabilities of old age. Consumers' perspectives on food change as they move from childhood, to single adulthood, to married family status to empty nests. Consumer habits and perspectives are also influenced by authority figures like doctors, teachers, politicians and religious leaders. However, from an increasingly early age and throughout their lives, consumers are now bombarded with unofficial influences from activists, bloggers, print, radio and television advertisers, popular entertainment, pop stars, celebrity chefs and social media. It is difficult to predict what influences will be "trending", that is rapidly gaining a wide audience, and which will disappear as rapidly as they appear.

The processes by which a large body of consumers arrives at similar beliefs about various aspects of food, and how that becomes reflected in their purchasing and consumption behavior, remain obscure. This is particularly true in a society like Canada where ethnic diversity is increasing. However, changing beliefs can have real consequences in the marketplace. For example, many purchasers of organic fruits believe that organic production does not involve use of any chemicals. More recently, many consumers believe that it is better to "buy local" because local products do less environmental harm from having a smaller carbon footprint than products brought in from distant sources, or because buying local helps small farmers and boosts the local economy. The validity of the beliefs is less relevant than whether those beliefs cause consumers to alter their purchasing and eating habits. A significant segment of consumers is willing to pay a substantial premium for organic foods, and an increasing number of consumers are willing to give preference to locally produced foods. The soft fruit and pear industries in B.C. may be able to capitalize on these consumer leanings.

Three other issues are of increasing importance to Canadian food consumers, thrift, convenience and health. As in many other countries, Canadian consumers have been seeking better value for money though patronizing discount stores, buying private label products and other economizing measures. Convenience has become an imperative in busy lifestyles. Consumers are also increasingly concerned about the effect on health of their food and beverage choices. At first glance, that would appear to favor purchases of products like soft fruits or pears. However, flat per capita consumption of these fruits indicates that health concerns do not automatically translate to changed behavior.

While one cannot predict how consumers' beliefs or concerns about food will change, or how that will affect purchases, there is no doubt that the battle to influence consumer choices will continue to rage. It will be crucial for the B.C. fruit industry to keep abreast of the changing beliefs, concerns and habits of domestic and foreign consumers, and to be ready to adapt their production and marketing practices to meet new consumer needs.

Changing Distribution System

The food distribution system in Canada continues to change through mergers, acquisitions and diversification of outlet types. While the major battle for the food consumer has been between domestic chains, like the Weston or Empire groups, and U.S. retail giants, like Walmart and Costco, there are also numerous independent chains and small stores serving ethnic communities.

Although bricks and mortar stores remain dominant, that dominance is now threatened by the rapid growth of online sales. Until recently, bricks and mortar stores were continually increasing in size. Retailers had to invest heavily to showcase products in an attractive setting. However, in theory, online sales can be delivered from an anonymous warehouse geared to efficiency rather than attractiveness and can accommodate an even wider range of items at lower cost. Small companies, and even single individuals, have been successful in building a loyal following for their products and services. Direct marketers of farm products, community supported agricultural (CSA) operations, small wineries, etc., have used this technique successfully.

Many consumers dislike food shopping and would buy online if their groceries could be delivered safely and economically. Through smart phones, more and more consumers can order online, where ever they are, day or night. However, delivery continues to be a challenge, particularly for perishable products. Technological giants like Amazon and Google are in a race with the major bricks and mortar retailers to find solutions to the quality, cost and scale problems of delivering online orders. Some retailers have attempted to set up their own system of pick up points at their stores or other convenient locations. Other retailers have joined forces with specialized delivery partners to service customers in their metropolitan area. It is not yet clear which delivery model will win most users.

These developments are forcing food retailers to rethink their role as warehouses of large assortments of grocery items, where they controlled the nature and breadth of products stocked, to being providers of grocery services to consumers. Inevitably, suppliers will be called upon to mesh their sales and marketing programs with this changing grocery environment. This will offer special challenges for the relatively small firms that produce most of B.C.'s soft fruit and pears.

Changing Technology

Interlocked with all these changes among consumers, retailers and suppliers is a flood of new technology that continues to alter how the food business is conducted. Some of the technologies affecting retailers and consumers have been discussed above. However, new technologies are also changing every facet of the production, storing, packing and distribution of soft fruit and pears. In the orchard, many new technologies help the grower better measure and control the physiological development of trees and fruit, with the aim of increasing yields, improving quality and lowering unit costs. Growers who wish to stay competitive with other producers in B.C. and in competing regions may have to invest in these new technologies. That could put a strain on their financial resources.

In addition, at the packing and storage level, new technologies are making it possible to measure and sort fruit by ever smaller differences in outside appearance, and to store different varieties for optimal timing of sales and optimal eating quality. Competitors in other countries are investing in these advanced technologies in order to gain marketing advantages in servicing their retail customers. B.C. Tree Fruits Cooperative (BCTFC) will have to make similar investments in its packing and marketing operations if it is to retain its customer base for soft fruit and pears. The costs of staying competitive will continue to rise.

Strengths, Weaknesses, Opportunities and Threats for the B.C. Stone Fruit and Pear Sectors

The factors given here are considered most important for the "SWOT" analysis in regard to the stone fruit and pear sector in B.C.

Strengths

- B.C. origin is helpful in selling within Canada, particularly in Western Canada in direct marketing venues and independent retail stores.
- The established reputation of BCTFC supports market development for conventional (non-organic) stone fruits and pears.
- The joint efforts of Summerland Varieties Corporation (SVC) and Pacific Agri-Food Research Centre (PARC) are globally respected for their research and variety development programs that enhance opportunities and net returns for B.C. growers.
- Organic stone fruits from B.C. are well accepted at retail in Canada in recent years and this is expected to encourage more attention to this niche market segment.

Weaknesses

- B.C. has a shorter growing season that largely confines growers of stone fruits to the southern part of the Okanagan Valley and parts of the Similkameen Valley. Climatic conditions for the main cultivars in current use plus the limited availability of controlled atmosphere storage have reduced storage life for both stone fruits and pears in relation to competitive supply regions. There are also gaps in marketing the B.C. fruit over the entire season, which encourages retailers to source fruit elsewhere.

- B.C. does not have research and grower testing programs for these stone fruits or pears. Gaining support for public funding of such programs may be difficult in these times of constrained government revenues.
- This segment of the industry is small and does not have the grower-packer strength to generate major private sector funding for promotion of targeted varieties.
- Some growers are undercapitalized or lack horticultural expertise/experience and are not producing highly desired varieties or quality fruit. This results in perception by some (including major retailers) that overall quality is lower than other supply areas.
- Packing is dominated by BCTFC which is challenged to accommodate many diverse cooperative grower/members. Volumes of some varieties are small which discourages BCTFC from developing marketing and packing programs.
- With few exceptions, the small independent B.C. packers are not in a growth mode. They do not compete significantly with BCTFC or packers from other supply areas.
- The small size of this industry segment has not attracted plant nurseries in Canada or the U.S. to offer new commercial cultivars to B.C. growers. Some growers complained about difficulty in accessing rootstock from the U.S. because of quarantine issues.

Opportunities

- The industry may be able to increase the yields, storage life, fruit appearance and other key factors that are now limitations through introduction of newer, more productive cultivars. Most of these improved varieties are freely available without royalty payments from growers.
- The new B.C. replant program provides stable, reliable support for orchard renewal and variety enhancement for the next 7 years. It also gives the industry an excellent chance to educate growers and ensure that growers use best management tools to upgrade their operations.
- Retailers in Western Canada want local seasonal fruit and give B.C. growers first priority when their fruit quality is established. This is especially true for peaches, nectarines and pears. This, along with growing direct market sales, gives stone fruit and pear growers more confidence in market expansion opportunities.
- The weaker Canadian dollar enhances the price competitiveness of B.C. in both export and domestic markets in relation to the U.S.

Threats

- Labor is difficult to schedule and attract in the critical, intense and short harvest windows. Continued government support for temporary foreign labor could become critical for this industry to maintain expansion plans.
- Land use laws governing the Agricultural Land Reserve must remain in place in order to keep the existing land base in orchards.
- Future regulation and environment constraints on pesticide or fertilization application might place new costs on growers that are added disincentives to remain in production.
- High volume/low cost, vertically integrated competitors are nearby in Washington and California. These large, aggressive, efficient grower-packers are expanding and intend to further increase their share of markets in Canada with high quality, lower cost fruit.

- Invasive species like the brown marmorated stink bug and spotted wing drosophila (fruit fly) could make production more difficult and costly in B.C., due to the high degree of urban-rural interface.

Strategy Recommendations – 2015 - 2025

Through work with the Steering Committee it has been determined that there is no research in Western Canada to develop improved rootstocks and cultivars for the stone fruits and pears covered in this report. Growers are also frustrated that they cannot get the newer cultivars of these fruits. The loss of extension staff and the limited number of horticultural consultants in the area has also left B.C. growers without ready access to important horticultural knowledge.

Current tight fiscal constraints at the provincial and federal levels make it mandatory that growers and affiliated groups clearly state their most pressing needs for support. The recommendations stated below that would be enhanced by government support will move forward when a broad coalition in the agricultural community is gained. PARC for example does not have research programs for the stone fruits and pears covered in this report. In order to establish any support at PARC for testing varieties, the industry must indicate its unified support. Broader support should include direct marketers, exporters, and independent packers along with the current “mainstream” tree fruit organizations. The leadership of the tree fruit industry must meet this challenge to drive the industry forward.

Loss of markets has also discouraged many growers from plunging into an investment in removal and replanting orchards in these stone fruits or pears. The high cost of new orchard plantings at $25,000 or more per acre coupled with the delay in revenue with replanting is one factor. The replant program clearly stimulates replanting but not in these types of tree fruits.

Given these considerations, the following recommendations form a strategic approach to assist stone fruit and pear growers advance over the next 10 years.

Revisit the Need for Promotional and Research to Support Market Growth

Generating marketing funds for promotion of all B.C. tree fruits is a major need within the industry, as discussed in the companion reports for apples and sweet cherries. A recommendation was made in the previous strategy report to establish a council or other body to develop a new plan for raising marketing funds. These funds would be used to both educate consumers on the value they receive from B.C. sourced stone fruits and pears and also promote greater consumer awareness of these fruits.

This strong need also applies to retail marketing of B.C. stone fruits and pears which are sold in Western Canada retail stores since at present there is very little promotional funding support. This is particularly important to justify the premium prices Canadian consumers pay for B.C. fruit compared to imported fruit.

Variety Database

SVC maintains a variety database that principally covers apples and sweet cherries licensed by SVC. The company is willing to create a new database with additional information on stone fruits and pears as a resource for growers and others. It is our recommendation that this database be created to cover the expanded types tree fruits so growers have the latest knowledge of the most relevant cultivars, rootstocks and other pertinent variety information. The data coverage would include names of the plant breeders, owners of intellectual property, managers of commercialization, and product attributes such as skin color, flesh color, size, firmness, Brix levels, harvest timing, orchard productivity, fresh packouts, storage life, and susceptibilities or resistance to various, insects, diseases, etc.

Along with this database, BCFGA and SVC could encourage growers to review the database and website as part of growers' systematic, objective assessment of new or different varieties. The database should include guidance to emphasize that growers need to start with advanced planning to obtain the desired nursery stock, weigh the types of risks, horticultural challenges and advantages, and consider other factors that are generally required to make well informed variety selection decisions.

Variety Exploration and Review Council

The tree fruit industry foresees major benefits from re-establishing the Tree Fruit Variety Management Council (TFVMC). The council should include all packers, marketing firms, and broadly include growers, even those who are not aligned with BCFGA or those that ship through BCTFC. The council should also have an ongoing dialogue with key retailers to capture relevant market knowledge.

The TFVMC is envisioned as a unified force to collectively evaluate fruit varieties that will be prioritized for plant breeding, field testing, sensory evaluation and other analysis to establish suitability. This varietal assessment will be global in coverage of varieties with objective reporting.

The council should also make recommendations to growers, packers and SVC to indicate varieties that are not meeting a reasonable threshold of commercial acceptance. Growers need clearer guidance on when to remove older varieties as well as newer varieties that have been experimental but not adequately proven for profitable marketing.

Another hurdle that the council might need to address is revision of protocols for plant materials that safeguard Canada from plant viruses, invasive species of pests and other phytosanitary threats while also aiding the introduction of new and useful plant materials. Since the newer stone fruit cultivars are considered virus-free this should be primarily a streamlining process.

Part of this council's charge would also include on-going evaluation of emerging and strengthening consumer trends. The evaluations need to be frequently shared within the industry so growers can interpret this for their own variety selection decision-making.

Strengthen Pre-Commercial Variety Testing and Evaluation Program

There is a need for a strong, on-going partnership between PARC, Agriculture and Agri-Food Canada (AAFC), SVC, growers, packers, marketers and horticulturists to conduct systematic, comprehensive testing of new releases that show the most promise under B.C. conditions. The goal would be to explore the pros and cons of new releases as early as possible. However, it is recognized that such systematic testing could take many years of joint efforts.

The current stone fruit cultivars in many B.C. orchards have been replaced with newer, improved cultivars in California and elsewhere. These newer cultivars are free of royalty and can be relatively quickly introduced and tested in B.C. While some testing is always advised, use of scion wood and top work grafting is perhaps the most feasible approach for many growers.

Part of testing of newer varieties should address current supply gaps in the marketing season for the stone fruits. Harvest dates need to be recorded in order to evaluate how these varieties can be utilized to improve on achieving a constant supply of the stone fruits. Evaluation of current harvest and postharvest handling for extending storage life is also an important part of the analysis that is needed.

Tests of newer varieties should measure expected revenues by evaluating yields and grower prices, and consider costs of production to estimate profitability. Some of this data might be estimated from monitoring the replant program. Other data might be projected for B.C. conditions by collecting data from other countries. This information would help growers make better decisions about new, high priority variety selections. For maximum effectiveness this information would be widely distributed to horticultural advisors, growers, grower associations and other related organizations.

It is also important for B.C. researchers to evaluate best harvest methods and the importance of postharvest management. After picking stone fruits need to quickly be cooled and maintained at about zero degrees Celsius.

Evaluate New Value Added Programs

Consideration should be given to finding new ways to create value added for these fruits. Pre-conditioning peaches, nectarines and pears are worthy of consideration because they have been found to enhance fruit quality for consumers and expand sales as practiced in the U.S. However, these programs require considerable pre-planning and cooperation from the packer and retailer.

Another possibility is the implementation of a B.C. fresh cut fruit marketing initiative for peaches and nectarines. This is being considered in California and Europe. Either of these programs could help re-invigorate sales at retail and may also be viable for some direct market outlets. Given the current limited volume of B.C. fruit available for marketing, financial feasibility of such efforts would need to be first considered before implementing either of these programs.

Work to Strengthen Direct Marketing Programs

Direct marketing outlets are very important for many small B.C. producers of stone fruit and pears. While individual direct marketing outlets can easily assess the preferences of their existing customers, they cannot discover why other customers do not use their outlets. There is need for sponsored research to discover the preferences of current and potential direct market shoppers for different types of outlets, different products (fruit categories, varieties, sizes, pack types, etc.), convenience of access, cleanliness, skill and courteousness of service personnel, use of social media, etc. Based on the results of such research, it would then be desirable to provide training programs for owners, operators and staff of direct marketing outlets. The B.C. Ministry of Agriculture may have funding for such research and training programs.

Transfer Improved Varieties to Growers via the Replant Program

B.C. has embarked on a new seven year replant program backed by $8.4 million in funding for replanting of tree fruits in the province. Year one of that program is underway and the program guidelines call for grower education, use of horticultural advisors to assist growers with many important horticultural practices and planting plans, a more detailed application to assist with evaluation and a mechanism for data feedback loop with continuous improvement goals to enhance replant program performance.

This program offers the incentive for all tree fruit growers to replant with improved varieties. Stone fruit and pear growers can adapt better cultivars and rootstocks for replanting and top grafting. New cultivars and varieties need field testing but in a few years the best variety options will be known and their introduction can be greatly enhanced through the replant program.

Communicate the Positive Environmental Initiatives Underway and Planned by the B.C. Tree Fruit Industry

Current and future consumer and environmental activism impacts all tree fruit growers and strong effort should be directed at communicating the industry's effort to protect both consumers and the environment. Greater public awareness is needed for such initiatives as the Sterile Insect Release program, actions to increase orchard water efficiency, wood chipping programs for tree removal, packaging reduction and recycling initiatives throughout the supply chain. Efforts by growers and packers to maintain the highest level of food safety should also be highlighted.

These positive elements of the industry can be included in communications that also explain how the industry supports jobs, income and tax revenues throughout the province.

Evaluate and Adopt Greater Labor Saving Methods in Orchards

Research in California has shown that major labor savings can be achieved in peach, nectarine and plum orchards with semi-dwarfing rootstock, proper row widths, correct pruning and other management techniques. Washington State is also investing heavily in studying the use of picking platforms and robotic pickers. Working in orchards without ladders or at lower ladder height also reduces farm accidents. B.C. growers are adopting systems and practices to reduce orchard height but more knowledge transfer can achieve further adoption of improved orchard practices in the province.

Address Other Key Industry Challenges

The investment of the B.C. government in the new replant program with the goal of modernizing tree fruit varieties could be adversely affected if other important industry challenges are not met. These challenges include: a) addressing the looming and potentially very critical harvest labor shortage, b) ensuring that marketing programs for the main varieties expand in step with the increased production from the replant program, and c) addressing the advancing average age of farmers with the attendant need for transition to a new generation of producers.

Canada's Seasonal Agricultural Worker Program (SAWP) has been effective in counteracting the shortage of harvest labor. The harvest labor situation is critical and any lack of confidence by growers could cause a slowdown in efforts to expand stone fruit and pear production in the province.

The reinvigorated TFVMC as well as BCFGA are both appropriate entities to engage with the Ministry of Agriculture and the general public to address these related, important issues.

Long-Term Environment for Change

This project calls for looking out in the longer term (10 to 20 years) to develop strategies for the B.C. stone fruit and pear sectors. In order to do so, it is necessary to visualize how the key environmental factors affecting the fruit industry will change after 2025. In spite of the inability to accurately forecast the future, it is still useful to first look at basic conditions that the industry may face after 2025.

Demographic Trends

Population trends are relatively easy to forecast since new births tend to follow predictable patterns, and life expectancy in each age cohort also tends to be relatively stable. The Food and Agriculture Organization of the United Nations forecasts indicate that world population will grow from 7,325 million in 2015 to 8,083 million in 2025 and 8,743 million in 2035, an increase of over 1.4 billion people (almost 20 percent) in 20 years. However, most of that population growth will be in the developing world, especially in Africa. Since B.C. stone fruits and pears are expected to be consumed mainly in North America, we focused on these population trends. The population of the United States is expected to increase by 25.5 million between 2015 and 2025, and by about 23 million between 2025 and 2035. The Canadian population is forecast to increase in the same periods by 3.3 and 2.7 million respectively, for an increase of about one-sixth above the 2015 population. The populations of B.C. and Alberta, the major domestic markets for B.C. tree fruits, are expected to grow faster than that of Canada as a whole.

The other, almost inevitable, result of present population trends is that the average age of most populations will rise as birth rates fall and longevity continues to increase. The dependency ratio (that is the number of children and elderly supported by the working population) will continue to rise, especially in developed countries. Among these countries, Canada and the United States, because of their liberal immigration policies, will be least affected by increased aging and rising dependency ratios, but the effect will become more pronounced by the end of the 2025-2035 decade. These population shifts are likely to be accompanied by shifts in household size and composition, and to significantly alter consumer tastes and preferences. The fruit industry will need to be prepared to adapt to these changes.

Economic Trends

As mature economies, both Canada and the United States have been able to manage long-term economic growth of between two and three percent per year. There are strong reasons to expect that both countries can maintain those rates of growth in the future, unless major geopolitical problems arise.

Our basic premise is that the economies of both Canada and the United States can maintain steady growth after 2025. This should help top stabilize total demand for stone fruits and possibly pears as more households become affluent across the two countries. However, competition from both United States and Southern Hemisphere suppliers is likely to remain fierce, so B.C. producers will have to earn market share through superior quality or value propositions.

Trade Relations

A number of forces throughout the world are threatening the trends towards globalization, and the free movement of goods, services, capital, people and ideas around the world, that have long been promoted by the United States, Canada and many other developed countries. While many countries have joined the ranks of market economies and have benefitted from these global freedoms, other countries, including Russia and China, have put various obstacles in the way of reciprocal trade arrangements. Exports of the stone fruits and pears from B.C. are not expected to become significant over the next 20 years, but U.S suppliers will no doubt keep supplying these fruits to Canada as a top priority. The close integration of the U.S. and Canadian economies should ensure that good trade relations between Canada and the United States will continue after 2025, which also means that the trade imbalance on these fruits would remain highly tilted in favor of the U.S.

International Competitive Trends

If trends towards increased globalization remain favorable, B.C. producers of stone fruits and pears will continue to face intense competition in the domestic markets. The push for expanded production in other fruits, aided by the variety development trends with new cultivars, could per capita consumption of stone fruits and pears even lower than at present. This is especially true for pears, unless pear variety development finds newer, better varieties to re-vitalize sales of this fruit.

The competitive challenge from tropical and exotic fruits is not likely to ease up after 2025 for two reasons. More affluent consumers, such as those in Canada and in B.C., are increasingly willing and eager to substitute such products for traditional favorites like apples. In turn, promoters of tropical and exotic fruits have become more expert in marketing their products in affluent markets like Canada on a twelve-month basis.

Role of Food Activists

Food activists are playing an increasing role in how fruit products are produced, packed, stored and marketed. Many activists have developed powerful organizations and also succeeded in gaining a seat at the table of many advisory groups that influence the policy decisions of politicians, bureaucrats, and even governments. Increasing influence of activists is likely over how farmers or agribusinesses use land, water, chemicals, or air, create or dispose of waste, or treat farm workers, in terms of wages, fringe benefits, housing, rest periods, etc. Activists will also seek to control how food products impact food safety and health by influencing the processes by which products are produced, such as, organic, integrated pest management, or non- genetically modified organisms (GMO).

The outcome of food activist pressure will continue to mean more restrictions on current agricultural practices, the requirement for additional, or replacement, practices, additional inspections, and additional record-keeping, all of which add to industry costs. The accumulation of demands from food activists will continue to be a major factor driving small operators out of farming.

Changing Consumers

While one can predict with confidence that consumers will continue to change after 2025, the direction of that change is difficult to forecast precisely. However, two notable, related trends will affect consumption of fresh fruits. One is the aging of the population. In general, as consumers age, they need less total calories per day, but their senses of taste and smell tend to diminish. To offset this, many demand more pungent tastes to enhance eating pleasure. Tracking and meeting the changing tastes of major consumer groups will become more important in future variety development. How stone fruits and pears fare in this regard could significantly affect the level of future demand that will exist for these fruits.

Household composition is expected to change, with more one-person and two-person households emerging. This means less “mother-influenced” eating habits, and greater reliance on outside influences such as doctors and health bloggers battling to shape consumers' preferences. The fruit industry will face a difficult challenge in attempting to shape the outcome of this battle in a way that is favorable to itself and its products.

Buzz words, such as "organic", "natural", "local", or "sustainable", will continue to be used to influence consumer choice after 2025. Additionally, one overarching social concern that is likely to grow in importance over the next 20 years is that relating to "global warming", "climate change" and the "sustainability" of present agricultural practices. In recent years, the B.C. fruit industry has made numerous adaptations to its practices to accommodate such concerns. However, it may have to make even more adaptations in the future if it is to retain the loyalty of its retailers and consumers.

Changing Distribution System

The food distribution system in Canada and around the world will also continue to change after 2025. For much of the last two decades, the trend in food retailing was to ever larger organizations with ever larger stores that operated on a global basis. Concentration at the retail level led to increased concentration among produce suppliers. This trend towards fractionalization of the retail food sector is likely to continue for the next decade and perhaps beyond. If smaller, neighborhood stores do gain share of food retailing in Canada, if could boost demand for targeted fruits like peaches or plums that can reach pockets of consumers with greater demand for these items.

One other trend that is likely to gain favor in the next few years is the expansion of online retailing at the expense of the bricks and mortar segment. Within the next decade, online retailers are likely to solve the challenges of delivery of perishable products. While bricks and mortar retailers will be forced to rationalize the number and mix of outlets, they will to have to protect their surviving outlets by offering additional services that attract shoppers into their stores. B.C. fruit suppliers will have to be flexible enough to adjust to whatever retail changes occur.

Changing Technology

Technological advances in genetics, chemistry, electronics, sensors, computers and telecommunications will continue to alter practices in the orchard, storage, packing and marketing systems for tree fruit. Where product quality or value is affected, there will be continuing pressure from retailers for their suppliers to adopt these new technologies. Large, integrated competitors will be able to capture economies of scale in adopting many of these technologies. The continuing dilemma for industry participants in B.C. will be whether the capital costs of adopting each new technology will yield sufficient savings in costs, or enhancements in revenues, to justify the investment.

Many technology experts are predicting the advent of "the internet of everything" where numerous devices can be wirelessly linked over the internet to remotely control activities in homes and work places. Such systems have already been envisaged for the orchards of the future. Participants in the B.C. industry can expect that by 2025 or beyond, customer demands or competitor initiatives will force them to make decisions about bringing their orchard, storage, packing or marketing facilities into the future.

Strategy Recommendations – 2025 - 2035

Given the trends described above and considering the major changes that have occurred over the last 10 to 20 years, the next 10 to 20 years should be very challenging but also rewarding for innovative businesses. However, anticipating major trends that will affect core activities in the tree fruit industry even further in the future will be essential to avoid being unprepared for what is coming.

Monitor Environmental Conditions

As long-term global warming/global weather changes take place, the dominant conditions that affect fruit tree health and production might alter variety choice by location. In a companion report pertaining to B.C. apples and sweet cherries, we recommend that a system be developed for more weather monitoring stations and intensive long-term reporting of temperatures and other meteorology studies in the B.C. growing areas. Such a system would also benefit stone fruit and pear growers and partner organizations and firms such as plant breeders, variety commercialization firms like SVC, consulting and research horticulturalists and commercial nurseries.

Consider the Impact of "Big Data" and Consumer Preferences

A clear long-term trend that is gaining traction is the ability of retailers of all types to track the buying habits and tendencies of consumers through loyalty programs and other technologies. This will allow retailers to seek more suitable products with precision in terms of time of demand, and the strength of demand. Just as this trend affects growers and packers of apples and sweet cherries, it also has important implications for other stone fruit and pear growers and packers. To remain competitive and make variety adjustments, all B.C. tree fruit growers need to have access to market trends identified by major retail fruit purveyors. This may require that the tree fruit industry periodically conduct its own consumer focus groups to determine how to better position itself and its products to consumer demands and preferences.

Packers are urged to monitor the firms that have or will in the future establish new methods of profitably reaching consumers with fresh fruit delivery. For stone fruits and pears, this applies mainly to firms with such services in Western Canada. The goal will be to have B.C. packers become the first and highly trusted suppliers of stone fruits and pears along with apples and sweet cherries to the leading innovators in fresh food delivery to consumers.

Since direct marketing is so important to B.C. producers of soft fruit and pears, there is a need to monitor the factors that might enhance or inhibit such outlets. This would include trends in agri-tourism, buy local issues, and food safety concerns, and packaging among others.