

**IMPROVING HEALTH, SAFETY AND HOUSING
CONDITIONS OF MEXICAN WORKERS IN BC:
A FARMER'S PERSPECTIVE**

by

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Abstract

This project investigates barriers to effective fulfilment of Occupational Health and Safety and Housing regulations by British Columbian farmers hiring seasonal agricultural workers. I survey the existing literature and conduct a survey among a small sample of BC farmers and find the major barriers to fulfilment of Occupational Health and Safety regulations are lack of information about the training resources, language barriers and the time constraint during harvesting season. Similarly, I find the high cost and limited availability of accommodations as the main obstacles to fulfilling housing requirements. The analysis of case studies in the United States shows how they have addressed similar obstacles for their large population of migrant farm workers. Using these findings, I propose policy alternatives that address Occupational Health and Safety and the housing needs of Seasonal Agricultural Workers in BC. After evaluating these alternatives based on a set of criteria, this study provides final recommendations.

Keywords: Temporary seasonal agricultural workers; occupational health and safety regulations; housing guidelines; British Columbia

Executive Summary

The Seasonal Agricultural Workers Program has played an important role in British Columbia's agricultural communities since its introduction in 2004. Seasonal Agricultural Workers have been able to meet the labour needs of the industry facing persistent labour shortages. However, with the growing scope of the program in British Columbia, there are increasing concerns over workers' occupational health and safety and their housing needs. Evidence across BC reveals violations of Occupational Health and Safety regulations and substandard, overcrowded facilities for Seasonal Agricultural Workers. This study addresses the issue from a farmer's perspective by identifying factors that constrain farmers' ability to fulfill regulations requirements. Barriers are identified using evidence from existing literature and a survey of small sample of BC farmers. After identifying the barriers specific to BC, this study presents policies implemented in other jurisdictions to address similar obstacles. Evidence from existing studies, results from the small sample survey and best practices in other jurisdiction guide the design of policy options that the Province of British Columbia can implement to improve farmers' ability to fulfil regulations and guidelines.

Evidence from existing studies and survey of small sample of farmers in BC reveals that the main barriers to fulfilment of Occupational Health and Safety regulations are farmers' lack of knowledge about the available training resources, time constraint during harvesting season and poor English language skills of workers. Programs implemented in the United States to address the occupational health and safety needs of Mexican migrant workers have focused on providing training in the use of pesticides and chemicals and general safety practices. The policies suggested by this study include: the full-time hiring of a bi-lingual training contractor for

workers, agricultural training seminars for farmers and farm supervisors, and a combination of full-time hiring of the training contractor and additional monitoring by the regulatory agency.

Evidence from existing studies and the small sample survey of farmers in BC reveals that limited affordable housing and limited funding resources limits farmers' ability to provide suitable housing to their workers. Federal and states' policies in the United States have provided a number of funding resources including loans, grants and tax credit programs to facilitate provision of migrant workers' housing. This study provides three policy alternatives to address the housing needs of Seasonal Agricultural Workers in BC. They include government inspections of facilities, provision of low-interest rate loans, and hiring of an on-site manager to monitor and maintain farm workers facilities.

To assess the overall performance level of each policy alternative, each policy is ranked using a set of criteria related to effectiveness, cost, acceptability among stakeholders, and administrative feasibility. The evaluation of the policy alternatives results in the following recommendations:

- To address the health and safety issue, I recommend that the current training resources be extended by the full time hiring of the bilingual training contractor combined with more outreach strategies and information sharing with farmers;
- To improve overcrowding and maintenance of housing facilities, I recommend a programme of low-interest rate loans

The above policy recommendations would require government funding and are relatively costly to implement. However, they are effective in addressing concerns over Occupational Health and Safety and housing conditions of Seasonal Agricultural Workers in BC. The current policies in place have failed in providing effective occupational health and safety training to workers and lack any financial resources to accommodate farm workers' housing. Therefore, there is a need for additional spending by government to address these issues.

Despite the current economic crisis, the demand for agricultural goods will continue to exist and so will the demand for Seasonal Agricultural Workers. Agriculture will remain an undesirable sector for the local labour force, and Seasonal Agricultural Workers will continue to be needed to fill the gap. Therefore, it is imperative to address the existing concerns to ensure their well-being, which is necessary to the success and productivity of agricultural enterprises and the economy.

To my parents,
for their unconditional love and support
which has been vital to my academic success.

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1. Introduction

The Seasonal Agricultural Workers Program is the federal government's initiative to solve the growing labour shortages in the Canadian agricultural sector (HRSDC, 2008c). For decades, this sector has been unable to attract domestic workers due to its physically demanding nature and comparably low wages. For a wage equal to the minimum provincial wage rate, workers can often find alternative job solutions in industries with more desirable working conditions. Consequently, labour shortages are addressed through hiring of foreign workers on temporary contracts. In Canada, these temporary agricultural workers are coming from Mexico or the Caribbean countries on contract terms often shorter than 8 months. Foreign workers benefit from temporary employment opportunities through remittances send to their local communities. Incomes earned through such temporary foreign workers' programs can often contribute to increased living standards for families of foreign workers (Basok, 2002).

As the number of seasonal agricultural workers has increased, concerns have been raised over their rights, their health conditions and their living arrangements. The temporary status of these migrant workers along with their often poor language skills and literacy level make them particularly vulnerable to violations of their rights. In recent years, advocates of seasonal agricultural workers have particularly raised concerns over workers' occupational health and safety and their living conditions. Evidence suggests that occupational health and safety regulations have been violated on occasions and facilities provided to seasonal agricultural workers are often overcrowded and do not meet the housing requirements of seasonal agricultural workers' accommodation. The objective of this study is to find out why farmers who are hiring seasonal agricultural workers fail to fully implement occupational health and safety regulations and housing guidelines. The scope of this study is restricted to the province of British Columbia. I

conduct a survey among BC farmers and use existing literature to identify some of the barriers that farmers as owners of small-scale enterprises face with occupational health and safety regulations and housing guidelines. After identifying the major barriers, I use best practices in other jurisdictions to design policy alternatives that best fit the needs of BC farmers and can ensure effective fulfilment of regulations and guidelines.

This study is organized in the following way. Section 2 provides information about the federal Seasonal Agricultural Workers Program, how it is managed in BC, and what the requirements are under the employment contract. In section 3, I survey occupational health and safety regulations and housing requirements and provide evidence of violations of regulations and guidelines. Section 4 identifies barriers to fulfilment of regulations and guidelines by farmers as well as the policy problem. Section 5 describes the methodological approaches that are used in this study. Section 6 discusses the findings from the survey, identifies challenges as suggested by farmers, and surveys other jurisdiction to find how they address similar challenges. Section 7 introduces short-term and long-term policy objectives, defines six policy alternatives, and establishes a set of criteria to be used for the evaluation of the policies. Section 8 provides an evaluation of the policy alternatives based on established measures of Section 7, and makes recommendations based on the evaluation results. Finally, Section 9 provides the concluding remarks about how British Columbia needs to address the current issues through short-term and long-term strategies recommended by this study.

2. Seasonal Agricultural Workers Program

This section provides a description of the Seasonal Agricultural Workers Program (SAWP). I discuss the historical background of Canadian SAWP followed by a description of how it is managed in Canada and in partnership with participating countries. Finally, I provide a summary of the terms and conditions of the employment contract in British Columbia.

2.1. The Historical Background

SAWP is the federal government's initiative to alleviate labour shortages in agricultural sectors of Canadian provinces. The Canadian government first introduced this program in 1966 in Ontario. It was initially called the Common Wealth Caribbean Seasonal Agricultural Workers Program and it allowed Caribbean labours to work on Ontario farms. Jamaica joined in 1966, followed by Trinidad and Tobago and Barbados in 1967 (Basok, 2002, 2007). The program however did not fully meet the labour needs of the farmers, and in the early 1970s, they were hiring migrant Mexican Mennonite families and Portuguese workers. However, reports of poor living conditions, inadequate wage rates, and lack of compliance with labour regulations encouraged the federal government to expand the program with the Mexican government. An agreement ensured the legal entry of Mexican workers and the respect of their rights under Canadian labour regulations. In 1974, governments of Canada and Mexico signed a Memorandum of Understanding (MOU) creating the Common Wealth Caribbean and Mexican Seasonal Agricultural Workers Program (Basok, 2002). In 1976, the Canadian government further expanded the program to include Organization of the Eastern Caribbean States (i.e. Antigua and Barbuda, Commonwealth of Dominica, Grenada, Montserrat, St. Kitts-Nevis, Saint Lucia, St. Vincent and the Grenadines and most recently Guatemala) (Basok, 2007).

Over the years, as the program expanded, other Canadian provinces joined in to resolve their agricultural labour shortages. The only province that is not participating in the SAWP is Newfoundland and Labrador (Basok, 2007). British Columbia (BC) is the latest addition to the federal SAWP joining in 2004 (HRSDC, 2004). While some provinces such as Ontario receive workers from some or all of the participating countries, BC receives its pool of workers from Mexico solely. The next section discusses how SAWP is managed in BC.

2.2. Managing Seasonal Agricultural Workers Program in BC

Although SAWP is a relatively new program in BC compared to other provinces, the number of Mexican workers arriving in BC has been increasing rapidly. In 2004, when the program was first introduced, 9 farmers hired 47 Mexican workers. The scope of the program rapidly increased; on the second year 67 farmers hired 684 workers, and in the following year, 130 farmers hired 1253 workers (Ministry of Agriculture and Lands, 2007). Although, compared to Ontario, BC receives a small percentage of the total number of workers arriving in Canada under the federal SAWP, the role of migrant workers is becoming increasingly significant in its agricultural sector.¹

The department of Human Resource and Skills Development Canada (HRSDC) manages SAWP across Canada. HRSDC's main role is to develop policies and guidelines for administration and operation of SAWP. It also works closely with the Mexican consulate in Canada and the Citizenship and Immigration Canada (CIC) office in Mexico (Ruddick, 2004). To hire a foreign worker, an employer must obtain a Labour Market Opinion (LMO) from HRSDC's local offices, and this involves fulfilling a number of requirements. First, a potential employer

¹ In 2007, Canada received 15,718 workers, among whom 8211 workers were from Mexico, and the remaining workers were from other participating countries (F.A.R.M.S, 2008). During the same year, Ontario received 90% of the total number of temporary seasonal agricultural workers arriving in Canada (Basok, 2007). The most recent figure on the number of temporary foreign workers arriving in BC under SAWP is from 2006 and is equal to 1253 Mexican workers (Ministry of Agriculture and Lands, 2007).

must prove that he or she has advertised to hire Canadian and permanent resident workers. HRSDC's requirements include employment ads in at least two editions of the community or daily newspapers as well as an online ad through recruitment services such as the Canada Job Bank. Proof of advertisement should be included with the application package to Service Canada (HRSDC, 2009). Second, a potential employer must obtain an inspected and approved housing inspection form that ensures the suitability of farm workers' accommodation. There are three options for obtaining this form. Option 1 allows an employer to arrange for housing in a licensed commercial accommodation such as a motel; in which case the commercial accommodation provider should issue a letter stating the number of guests and duration of their stay. Option 2 is to obtain a Municipal Inspection Occupancy Permit, currently provided by the City of Abbotsford and the District of Pitt Meadows. The final option is to obtain private inspection services provided by the four inspectors from a recognized agency. This inspection report must be obtained every year prior to recruiting foreign workers (WALI, 2005).

Once an employer has completed the above requirements, he or she needs to submit to HRSDC the application package along with a signed employment contract and a visa processing fee of \$150 per worker. A potential employer is required to sign the employment contract while applying to recruit foreign workers. Later, a Mexican worker who is recruited for SAWP signs a separate copy of this contract while in Mexico. Once an application is approved, workers and employers are matched, and the two contracts form the legal employment agreement by which both parties are bound. The \$150 fee per worker is refundable if the application is not approved and can be recovered from the worker's first month salary if the application is approved (HRSDC, 2008b).

Once the application is approved, HRSDC issues a LMO and informs the employer and the Mexican Consulate of the decision. LMOs are forwarded to the Mexican Consulate in Canada, which upon receiving approvals communicates with the recruitment agencies in Mexico

with a request for a specific number of workers (HRSDC, 2008b). Based on the Memorandum of Understanding (MOU) signed between the governments of Canada and Mexico in 1974 and the amendment signed in 1995, Mexican officials responsible for recruiting workers in Mexico must ensure workers meet two criteria. First, any worker recruited “must be a bona fide agricultural worker at least of 18 years of age” and second “has no infectious or communicable disease or any other physical or medical conditions which would adversely impair the worker’s ability to satisfactorily perform his assigned job” (MOU, 1995, ANNEX 1). Mexican officials responsible for recruiting workers transfer medical examination reports and workers’ valid passports to the CIC office in Mexico for review. If all requirements are satisfied, CIC issues work permits for workers and further travel arrangements are made. The Mexican Government must assign one or two representatives to oversee the smooth operation of the program to protect both the workers and the employers and to ensure both parties to the agreement fulfil terms and conditions of the employment contract (MOU, 1995, ANNEX 1).

Finally, the Western Agricultural Workers Initiative (WALI) is a non-government agency, which has been established to assist BC’s farmers in recruiting temporary foreign workers. WALI acts as an industry representative and provides variety of services such as assisting employers with application process and referring seasonal housing inspectors, and it plays an active role in promoting BC SAWP. There is a fee associated with WALI’s services, which depends on the number of workers farmers would like to recruit. It is \$47.25 for one worker, \$94.50 for two workers and \$472.50 for ten workers (WALI, 2008).²

The next sub-section looks at the employment contract to gain a better understanding of employers’ obligations under SAWP.

² WALI is the industry representative specific to BC. The industry representatives in other provinces are Foreign Agricultural Resource Management Services (FARMS) in Ontario and Nova Scotia, and Fondation des Entreprises en Recrutement de Main-d’oeuvre agricole Étrangère (FERME) in Quebec, New Brunswick and Prince Edward Island.

2.3. The Employment Contract in British Columbia

The employment contract under SAWP is a standard contract also used in other provinces with a few modifications. First, the wage rate stated in the contract is set based on the provincial minimum wage rates. For example in BC, the hourly wage cannot be less than \$8.90 as set by provincial labour laws. BC Ministry of Social Development and labour determines the piecework rate for harvesting, and the total rate per hour cannot be lower than \$8.90 (HRSDC, 2008a). The second modification in the BC's employment contract is the cost of providing "suitable" accommodation to the workers. In BC, farmers can charge workers "7 percent of the worker's gross pay from the first day of full employment" as long as the total amount does not exceed \$550 for the entire duration of the worker's stay in Canada (HRSDC, 2008a, p.2). In other provinces, accommodations should be provided free of charge.

All the remaining provisions under the BC employment contract are similar to the standard contract used in other provinces. The agreement specifies that the term of employment should "not exceed 240 hours in a term of 6 weeks or less, nor longer than 8 months" (HRSDC, 2008a, p.1). Section four of the agreement declares employers' obligations relating to insurance for occupational and non-occupational injury and disease. Employers are obliged to follow Occupational Health and Safety (OHS) regulations as designed and enforced by the provincial regulatory powers. They are required to advance non-occupational health insurance for workers through the private RBC insurance, the cost of which can be recovered from the workers' wage (HRSDC, 2008a).³

Finally, section seven of the employment contract imposes the following conditions on the employer regarding the use of pesticides and chemicals:

³ Royal Bank of Canada (RBC) Insurance is the sole private insurance provider as specified by HRSDC's provisions. Workers are covered by this private insurance provider upon their arrival and until the provincial health care plan take into effect. The waiting period for provincial health coverage is approximately 3 months.

The **EMPLOYER** agrees that **WORKERS** handling chemicals and/or pesticides will be provided with protective clothing at no cost to the **WORKER**, receive appropriate formal or informal training, and supervision where required by law.
(HRSDC, 2008a, p.4)

More specific regulations and requirements are provided by WorkSafeBC, the agency that designs and enforces OHS regulations in BC. In the next section, I present regulations and guidelines that have raised concerns.

3. Health, Safety and Housing Issues

Workers that are well protected against occupational hazards and live in suitable accommodations can be more productive on their jobs and contribute fully to the local economies. In recent years, there have been concerns over occupational health and safety and housing conditions of temporary foreign workers living in agricultural communities. This section provides evidence of violations of some existing regulations and guidelines.

3.1. Occupational Health and Safety

Below, I first survey some of the regulations enforced by WorkSafeBC, and then, present some of the challenges identified in studies.

3.1.1. OHS Regulations

In BC, the Occupational Health and Safety (OHS) regulations and the Workers Compensation Act provide guidelines for growers to ensure health and safety of their workers. The set of guidelines and regulations are numerous, but a few are particularly important when discussing health and safety concerns of temporary foreign workers. Concerns over violations of OHS regulations are often associated with the use of pesticides and the prevalence of pesticide related illness among the farm workers. In the Workers Compensation Act, the Substance Specific Requirements section provides guidelines on the use and handling of pesticides. The regulations that are often violated concern training of the workers, use of protective clothing, restrictive entry intervals, and the personal hygiene of the workers. The training requirement of section 6.78 of the Act under procedures for mixing, loading and applying pesticides states that:

The employer must develop and implement written safe work procedures for the

- a) Handling, mixing, storage and application of pesticides,

- b) Cleanup and disposal of spilled pesticides, and
- c) Summoning of first aid and medical assistance for workers overexposed to pesticides
(WorkSafeBC, 2003, p 132)

Furthermore, section 6.81 of the requirements for the use of equipment states that:

The employer must insure that equipment used to mix, load or apply pesticides is

- a) Operated only by trained persons
(WorkSafeBC, 2003, p 133)

Section 6.89 of the act regulates the restricted entry intervals after pesticides have been applied:

The length of the restricted entry interval required by subsection (1) is a minimum of

- a) 24 hours for a pesticide which is classified as slightly toxic,
- b) 48 hours for a pesticide which is classified as moderately or very toxic , and for any mixture in which a moderately or very toxic pesticide is present, or
- c) The interval specified on a pesticide label that interval is longer than the interval determined in paragraphs (a) or (b)

(WorkSafeBC, 2003, p 135)

Personal hygiene section of the act regulates protective clothing requirements and sanitation

facilities. Section 6.95, paragraph 1 states that:

The employer must supply and maintain adequate wash facilities and, if there is the risk of body contamination, shower facilities as required by section 5.82, to all workers when

- a) Mixing, loading or applying pesticides, or handling concentrates or wet-treated lumber,
- b) Cleaning, maintaining or handling equipment, materials or surfaces contaminated with pesticide residues, or
- c) Entering fields where pesticides have been applied and where contact with pesticide residues may contaminate protective clothing and body areas

(WorkSafeBC, 2003, p 137)

Regulations also require workers to ensure personal hygiene as well. Section 6.96 states that:

“A worker must immediately cleanse any body area contaminated with pesticide.”

(WorkSafeBC, 2003, p 137)

Finally, section 6.97 mandates employers to provide personal protective clothing and equipment to workers dealing with mixing, loading and applying pesticides (WorkSafeBC, 2003, p 137).

The next sub-section provides evidence of violations of these regulations.

3.1.2. Violations of OHS Regulations

Several studies on the treatment of rights of foreign agricultural workers provide evidence of violations of the above regulations. For British Columbia, Fairey et al. (2008) study Mexican and Indo-Canadian farm workers in the Fraser Valley and provide evidence of lack of compliance with regulations. The study presents results of the interviews with 28 Indo-Canadian and 25 foreign temporary Mexican workers between June 2006 and December 2007. Workers' concerns over their health and safety conditions include lack of adequate washroom and eating facilities on the farms, lack of protective clothing while working with pesticides and lack of health and safety training to work with chemicals and pesticides. More recently, in September 2008, three workers were reported dead on a BC mushroom farm due to an "accidental or intentional release of a toxic chemical in a utility shed containing chemicals used in composting" (CBC, 2008).

A recent study of temporary agricultural workers in Ontario also provides similar evidence. Gibb (2006) conducts interviews with SAWP participants in Ontario farm communities and with the returning SAWP participants to Mexico and other Caribbean countries. She finds that 33% of the participants have suffered some kind of injury on their jobs. Among Mexican participants, only 50% received some kind of informal training. Among those who had received training, only 15% were educated in using chemicals and pesticides; while 37% were being asked to work with chemicals. Also 34% of the Mexican survey participants had claimed that they were asked to return to fields after they had just been sprayed with pesticides.

A report looking at the prevalence of pesticide related illness among California's farm workers during 1998-1999 finds alarming results. The report identifies how many cases of non-disinfectant pesticide-related illness were reported to the California Department of Health

Services (CDHS) during the period.⁴ The results indicate that out of 1156 cases of pesticide related illness reported during the two- year period, 486 were farm workers; predominantly Hispanic (85%) and male (79.6%) (Das et al., 2001). Yet numbers might be lower than the actual number of pesticide-related illnesses among foreign workers in California’s agriculture sector for two reasons. First, the report only looks at the surveillance report; and if a worker did not visit a health care provider, the case of pesticide related illness would have not been reported. Second, Das et al. (2001) suggests that four out of ten farm workers in California do not have the legal permits to work in California’s agriculture industry. Illegal workers are less likely to visit a health care professional in a case of pesticide-related illness because of their illegal status, possibly poor language skills and the cost associated with visiting a health care professional.

Thus, evidence from Canada and elsewhere show that a number of temporary foreign workers in agriculture industry directly work with pesticides without a formal or informal training despite existing regulations. Next, I describe the housing guidelines and provide evidence of concerns over housing conditions of foreign workers.

3.2. Suitable Housing for Seasonal Agricultural Workers

In this subsection, I first introduce the requirements for Seasonal Agricultural Workers’ (SAWs) housing in BC, then, provide evidence of issues that have been raised over the housing conditions.

⁴ US National Institute for Occupational Safety and Health (NIOSH) with the support from the United States Environmental Protection Agency (U.S. EPA) has established a surveillance program in states of Arizona, California, Florida, Louisiana, New York, Oregon, Texas and Washington. This surveillance program is not specific to agricultural industry, however, mandates health care providers to report “pesticide-related illness by telephone to the local health officer within 24 hours of examining affected patients” (Rupali et al., 2001, p. 305).

3.2.1. Housing Requirements

The housing requirements for SAWs in BC are determined by HRSDC and are stated on the employment contract as discussed in section 2.3. An employer is required to provide suitable accommodation at a minimal cost to workers. A private housing inspector licensed by the province of British Columbia must evaluate the suitability of accommodations. Housing facilities could be located on or off the farm as long as the employer provides transportation to transfer workers to and from work sites (HRSDC, 2008a, p.2).

In 2005, the BC ministry of Agriculture and Lands proposed additional guidelines to clarify the requirements for the seasonal housing of migrant farm workers in BC. The guidelines include requirements for general construction, washroom and sewage facilities, occupancy density, water supply, garbage control and safety (Fairey et al., 2008). Some municipalities including Fraser Valley and Fraser Delta have gone a step further to accommodate the housing needs of temporary foreign workers. In July 2006, city of Richmond enacted the Seasonal Farm Worker Accommodation Bylaw 8039, which permits re-zoning of the agricultural land to allow for seasonal temporary housing based on certain requirements (Ministry of Agriculture and Lands, 2007). The bylaw requires specific provisions to be met by farms larger than 8 hectares before permits for Seasonal Farm Labour Accommodation can be granted. For example, the temporary accommodation must have a minimum floor area of 10 m² per occupant; the number of workers per accommodation is determined by inspections; and the maximum number of labour occupants per accommodation cannot exceed 30 workers (City of Richmond, 2006.a). Other cities that allow temporary accommodations for farm workers include Pitt Meadows, Abbotsford, Delta and the township of Langley (Fairey et al., 2008). The district of Pitt Meadows, the City of Abbotsford and Delta and the township of Langley however do not require re-zoning of the farmland to establish temporary accommodations. Therefore, any farmer interested in placing

temporary accommodation on his or her farmland needs to get only a building permit (City of Richmond, 2006.a).

3.2.2. Violations of Housing Requirements

Despite the steps that have been taken to improve the housing needs of migrant farm workers, the conditions of some housing facilities are reported to be over-crowded and unmaintained. In BC, Fairey et al. (2008, p.47-48) suggest that some of the Fraser Valley accommodations are “substandard and inferior to Canadian standards”. Through interviews with farm workers, this study finds evidence of “overcrowded facilities, dilapidated dwellings and poor or non-existence toilet facilities”. In 2007, Justicia for Migrant Workers BC produced a report based on regular visits to accommodations where SAWP workers lived including accommodations in Fraser Valley, Delta, and Vancouver. Accommodations that are visited included trailers, new and converted housing on farm property, motels, and apartments. Results show that some accommodations violate basic guidelines and create health and safety hazards for SAWs. For example, a worker from a farm in Abbotsford reports that the two toilet facilities, which are located outside the house, are unmaintained and unusable. Visits to other accommodations reveal evidence of lack of heating facilities, supply of running water and of a well functioning kitchen ventilation system. Gibb (2006) also provides evidence of poor quality of accommodations reported by Mexican and Caribbean workers in Ontario. She reveals problems such as overcrowded housing facilities, lack of appropriate washroom facilities and not sufficient fridge and closet space. In North Carolina, interviews with 270 minority farm workers during 1998 and 293 farm workers during 1999 find similar results. Many workers complained about overcrowded camps, unmaintained washrooms, not enough showers and limited laundry facilities (Arcury et al., 2001). Thus, evidence suggests that the major concerns over the housing conditions of SAWs include over-crowded facilities, unmaintained kitchen and washroom facilities and not enough washing and cooking appliances.

In summary, although, regulations and guidelines have been in place since the introduction of SAWP across Canada, there is evidence of noncompliance with regulations, which has resulted in occupational hazards and substandard housing conditions. Therefore, the question that arises is “why don’t farmers effectively implement OHS regulations and housing guidelines?”. In the next section, I identify a few barriers that may undermine farmers’ ability to fully implement regulations and guidelines.

4. Economic Obstacles and Policy Problem

In an industry with large production costs and international competition, farmers, as owners of small-scaled operations face a number of challenges in trying to maximize their profits. Some of these challenges may contribute to insufficient training of SAWs in OHS regulations, incompliance with existing guidelines and over-crowded and substandard housing accommodations. This section surveys some of the challenges identified by research. Also discussed is the definition of the policy problem that this study addresses, and the role of stakeholders affected by this policy problem.

4.1. Barriers to Fulfilling OHS Regulations and Housing Guidelines

Five main barriers to implementation of OHS regulations and housing guidelines are identified and discussed in this section.

The first major challenge is related to the time sensitive nature of agricultural production specifically during the harvesting season. Basok (2002) studies the nature of Green House industry in Leamington Ontario. Through interviews with farmers, she finds that the nature of green house production and sensitivity of agricultural sector make it very difficult to comply fully with regulations. For example in an interview with a green house farmer, she finds that after pesticides have been applied to the fields, it can be days before workers can safely re-enter the fields. In the case of tomato production for example, if the harvesting period is postponed for too long, tomatoes can ripen too much and crack before they are picked. For farmers, this could result in large losses (Basok, 2002, p. 67).

The second barrier to training foreign workers as identified by researchers is the workers' poor language skills and often-poor literacy levels. This topic has been studied on a population of

Mexican farm workers in the United States, who share similar characteristics with the Mexican farm workers in Canada. It is found that only 5% of Mexican farm workers are capable of speaking English. Among those with adequate English skills, 95% had lived in the United States for 5 years or more. Workers often reported that because of their poor English skills, they were often unable to understand safety trainings, to read warnings signs and understand educational materials (Das et al., 2001). Therefore, considering the time constraints during harvest season, and workers' poor communication skills, training can be a major challenge for farmers with the limited resources.

The short term of employment contracts of temporary foreign workers also creates a third barrier to OHS training. Workers often are unable to improve their language skills during the very short term of the contract (maximum 8 months). In addition, short employment contracts distort training incentives for farmers. Guadalupe (2002) in her comparative study of accident rates among fixed term workers versus permanent workers suggests that higher accident rates are observed among temporary workers. She argues that employers' investment in safety training is a form of human capital investment, the extend of which depends on its rate of return. In the case of short-term employment, the employer is reluctant to invest in training since the employee does not stay long enough to contribute high returns. Furthermore, she suggests that if there are potentials of future rehiring by the same employer, the employee would want to impress that particular employer by for example working faster or more intensely. This by itself can increase the rate of accidents.

Fourth, studies indicate that poor health and safety performance is a common characteristic of small and middle-sized enterprises. Walters (1998) links the high rates of injuries in industries such as construction and agriculture to the nature of small-sized enterprises. He identifies a number of economic and non-economic factors that contribute to the poor health and safety performance of small enterprises. They include factors such as "limited resources, limited

knowledge of regulatory requirements, poor awareness of the economic advantages of health and safety, poor knowledge and understanding of safe working practices, short term economic pressure and competition, and inadequate enforcement and absence of preventive services” (Walters, 1998, p.182).

Finally, the general problem of housing affordability and low vacancy rate in the province of British Columbia may have an impact on farmers’ ability to provide low cost housing to farm workers. In 2006, 43.7% of renters and 22.8% of owners spent over 30% of their household income on shelter. According to BC Housing, an affordable rent is defined as costing no more than 30% of a household’s total gross monthly income. In addition to the affordability problem, the low vacancy rate also is a major barrier to providing suitable housing to farm workers. In 2008, the vacancy rate in British Columbia was 1.1%, the second lowest in Canada (Snow, 2008). As mentioned in section, 3.2, one of the major concerns over housing of foreign workers is overcrowding. In a housing market where accommodations are costly and in short supply, farmers with their limited resources may face difficulties in providing suitable housing while charging workers a very small fee.

To summarize, farmers’ ability to effectively implement OHS regulations and housing requirements are affected by a number of economic factors. The nature of agricultural production and time sensitivity of harvesting season adds additional obstacles to training farm workers. In addition, the problem of poor communication skills lowers the effectiveness of training. Finally, expensive housing and tight supply limits the availability of suitable housing. Strategies should be considered to remove such barriers and to help farmers better implement regulations and guidelines. The next sub-section states the policy problem and the key stakeholders affected by this policy problem.

4.2. Policy Problem and Key Stakeholders

Why do BC farmers fail to fully implement Occupational Health and Safety regulations and housing requirements? This is the policy question this study is attempting to address. In light of evidence provided, temporary Mexican workers employed in BC's agriculture sector lack sufficient OHS training, are often exposed to health hazards, and live in overcrowded, substandard housing accommodations. The evidence also suggests that farmers have access to limited resources and face economic pressures. In an industry with large production costs and international competition, farmers as owners of small-scaled operations face a number of challenges when trying to maximize their profits. Some of these challenges may contribute to insufficient training of foreign workers in OHS regulations and violations of housing requirements. Labour cost is one of the few expenses that farmers have direct control over. Therefore, when facing rising costs of equipment, machinery, energy prices, and raw production inputs, farmers have a tendency to minimize labour costs in any way possible.

The main stakeholders involved in these issues are primarily BC farmers and SAWs. Farmers' involvement in these issues relates to the farmers' role in fulfilment of OHS regulations and housing guidelines. As discussed in the earlier sections, farmers are responsible for providing training in OHS regulations and for suitable accommodations for SAWs. However, their ability to fulfill regulations and guidelines has been affected by a number of obstacles. SAWs are also directly affected when they do not receive sufficient training in OHS regulations and live in substandard, overcrowded facilities. Other agencies concerned by these issues are WorkSafeBC and Farm and Ranch Safety and Health Association (FARSHA). WorkSafeBC is the regulatory power that enforces OHS regulation and guidelines in BC's agricultural sector. FARSHA provides variety of services including training programs, booklets and brochures and site visit evaluations to ensure the health and safety of farm workers. Both agencies are actively involved in ensuring health and safety of foreign workers and play vital roles in promoting policies that

guarantee better fulfilment of regulations and guidelines. Therefore, they are likely to have an interest in the policy recommendations provided by this study.

In the next section, I introduce the two methodologies used in this study.

5. Methodology

This study employs two methodologies: a survey analysis and a case study analysis. The survey analysis help determine the barriers to full implementation of OHS regulations and housing guidelines. The analyses of case studies help identify the alternatives that other jurisdictions have adopted in order to alleviate existing barriers. This section discusses the two methodologies in more details.

5.1. Survey

In order to identify challenges faced by farmers in BC, I mailed a letter of introduction (Appendix A) along with the three-page survey (Appendix B) I designed to members of BC Raspberry Industry Development Council on January 29th, 2008. I allowed a period of 3 weeks to receive responses from the growers. Pre-paid envelopes were included to ensure anonymity of the respondents. I separated the survey into two separate sections in order to target two groups of famers: Group 1 or those who have experience in hiring SAWs and Group 2 or those who have never previously hired seasonal agricultural workers. Group 1 farmers were asked to fill out the first two pages of the survey while Group 2 farmers were asked to complete page 3 of the survey. In designing the survey I had two objectives: first to find what kind of challenges Group 1 farmers have been facing in fulfilling OHS regulations and housing guidelines, and second to find whether or not fulfilment of OHS regulations and housing guidelines are creating barriers to recruiting SAWs by Group 2 farmers. Both sections of the survey have 3 general categories of questions as summarized in Table 1 below.

Table 1. Structure of the Survey

	Type of Questions	
	Group 1	Group2
Part A: General Characteristics	<ul style="list-style-type: none"> • Kind of crop, size of production area • Number of foreign workers, length of foreign workers' contracts, possibility of rehiring of foreign workers after the first term • Reasons for recruiting foreign workers 	<ul style="list-style-type: none"> • Kind of crop, size of production area • Number of workers during peak season • Reasons for not hiring foreign workers so far
Part B: OHS Regulations and Training	<ul style="list-style-type: none"> • Access to information on OHS regulations and requirements • Impact of time constraint on OHS training • Impact of cost on OHS training • Effectiveness of the current policies in facilitating OHS training • Impact of workers' language skills and OHS training • Difficulty of monitoring workers to ensure compliance with OHS regulations 	<ul style="list-style-type: none"> • Why implementing OHS regulations would be a barrier to hiring foreign workers
Part C: Housing Requirements	<ul style="list-style-type: none"> • Housing affordability • Availability of housing and accommodations • The effectiveness of the current policies in facilitating housing requirements 	<ul style="list-style-type: none"> • Why fulfilling housing requirements would be a barrier to hiring foreign workers

For Group 1 farmers, the general characteristics category collected information on the nature and the size of farm production, the size of labour pool during harvesting season, and the size of SAWs with the average term of their contracts. Second, category of questions aims to identify the barriers to fulfilment of OHS regulations. Finally, the third category of questions aims to identify the barriers to providing suitable housing to SAWP workers. For Group 2 farmers, the general characteristics category asks about the size and nature of farm production only. Second category aims to find whether OHS regulations and training requirements are discouraging farmers from hiring workers under SAWP. The final category aims to find whether housing requirements are discouraging farmers from hiring SAWP workers.

5.2. Case Studies

The second methodology uses case studies to identify what steps have been taken by other jurisdictions to address occupational health and safety and housing needs of migrant workers. The cases are all policy initiatives by the federal and State governments in the United States. The factors determining the choice of case studies are similarities in seasonal agricultural workers program, similarities in characteristics of agricultural labour force and similarities in issues affecting migrant farm workers housing and their occupational health and safety.

The American H-2A program is the closest program to the Canadian SAWP in terms of design, implementation and policy goals it hopes to achieve. This program is fully discussed in section 6.2.1. In addition, migrant agricultural workers in the U.S. have very similar characteristics in terms of place of origin, literacy and language proficiency. Also as discussed in sections 3.1.2 and 3.2.2, there has been evidence of violations of OHS regulations and housing guidelines in the U.S. Considering the larger migrant worker population in the U.S. , more vigorous approaches have been taken in order to address the migrant workers' need for OHS training and suitable housing. The next section covers the analysis of both methodologies.

6. Analysis

This section provides analysis of survey findings and case studies.

6.1. Survey Analysis

This section provides a description and analysis of the survey findings. Out of 358 surveys that were mailed to the members of the BC Raspberry Industry Council, 21 responded on the first week. The small response rate is due to the association's decision to discontinue its support for farmers' participation in this study. However, despite these special circumstances, I find the findings useful and supportive of the evidence provided in Section 4. Among 21 respondents, 7 farmers meet their labour needs only locally, and they are eliminated from the sample; 8 farmers have experience in hiring foreign workers, and they are identified as Group 1 farmers. Finally, 6 farmers have never hired foreign workers despite their labour needs not being met locally, and they are identified as Group 2 farmers. The results are discussed separately for the two Groups and are summarized in Table 2 for Group 1 farmers and in Table 3 for Group 2 farmers.

6.1.1. Group 1 Farmers

Table 2 below summarizes findings from surveys completed by Group 1 farmers.

Table 2. Summary of Findings from Group1 Farmers

		Questions	Percentages
Part A: General Characteristics	Farm size:		
		0-10 hectares	25%
		11-50 hectares	37.5%
		50+ hectares	25%
		No answer	12.5%
		Maximum number of workers hired during peak season:	
		0-10 workers	50%
		11-50 workers	25%
		50+ workers	12.5%
		No answer	12.5%
		Maximum number of SAWs hired during peak season:	
		0-10 workers	84%
		11-50 workers	16%
		50+ workers	0
		No answer	25%
		Average length of contract for SAWs:	
	8 months	50%	
	Less than 8 months	50%	
	No answer	0	
	Percentage of SAWs that are rehired by the same employer:		
	less than 25%	50%	
	26% -50%	38%	
	50% +	12%	
	No answer	0	
Part B: OHS Regulations and Training	Access to handbook of OHS regulation by WorkSafeBC:		
		Yes	80%
		No	20%
		Knowledge of OHS training services:	
		Yes	0
		No	100%
		Language as a barrier:	
		Yes	37.5%
	No	25%	
	Somewhat	37.5%	
	Effective monitoring as a barrier:		
	Yes	80%	
	No	20%	
Part C: Housing Requirements	Housing affordability as a barrier:		
		Yes	80%
		No	20%
		Housing availability as a barrier:	
	Yes	90%	
	No	10%	

General Characteristics. The sizes of the production area of the farms for Group 1 vary by significant amounts. The majority of the farms in my sample of 8 surveys are among the small and medium-sized farms, with 25% of farmers indicating that the size of their production area is between 0-10 hectares and 37.5% indicating that it is between 11-50 hectares. There are also disparities among the average number of workers hired during the peak season. As summarized in Table 2, among 8 Group 1 farmers, 50% hired only 0-10 workers (both domestic and SAWs) during the harvesting season; and the maximum number of SAWs hired by 84% of Group 1 farmers was 0-10 SAWs. 50% of Group 1 farmers reported that the average term of contract for their SAWs is 8 months; and 50% indicated that they rehire less than 25% of their SAWs after the completion of their first work contract.

OHS Regulations and Training. The top three challenges faced by Group 1 farmers when fulfilling OHS regulations are lack of information about support services for OHS training, difficulty in monitoring workers while they are on the fields, and language barriers. As indicated in Table 2, 80% of the farmers indicated that WorkSafeBC provides them with the handbook of OHS regulations. However, none of these farmers was informed of the support service that is available to them through FARSHA. No farmer knew about the availability of the training contractor provided through FARSHA and the kind of services he provides.⁵ In addition, 37.5% of the farmers said that language barrier is a challenge when training foreign workers, and 37.5% said language barriers is somewhat challenging. Finally, 80% of the farmers suggested that monitoring workers to ensure effective fulfilment of OHS regulations is difficult during the busy harvesting season with their limited resources.

⁵ During May 1st to October 1st of 2008, FARSHA hired a training contractor to provide OHS training to seasonal agricultural workers in Spanish. The services of the training contractor is available based on the farmers' demand (FARSHA, 2009).

Housing Requirements. When farmers were asked about the barriers to providing suitable housing for their SAWs, the majority agreed that affordability (80%) and availability (90%) are barriers to providing suitable housing to SAWs.

Finally, I asked farmers to provide suggestions on what they think should be done to improve the implementation of OHS regulations and housing guidelines. To make implementation of OHS regulations easier and more affordable to farmer, some of the suggestions included: making regulations more relaxed, providing educational seminars, and providing training in Spanish to the group of SAWs upon their arrival and before they head off to their individual farms. To provide suitable and more affordable housing for temporary foreign workers, farmers' recommendations included: increasing the amount that employers can charge for providing accommodations to SAWs, providing certified contractors to build suitable housing at a discount rate, allowing small farms to install temporary accommodations on farmlands, and reducing the red tapes associated with getting building permits.

In summary, lack of information about the training support services, language barriers, and the time constraint during the harvesting season, which makes monitoring workers difficult to organize, are some of the challenges that farmers identified. In addition, higher costs and low availability of housing create barriers to providing housing for temporary foreign workers. These results support some of the factors I identified in section 4 as the major challenges to fulfilling OHS regulations and housing guidelines. In the next subsection, I discuss some of the challenges that Group 2 farmers identified as being important.

6.1.2. Group 2 Farmers

Table 3 below summarizes the findings from surveys completed by Group 2 farmers.

Table 3. Summary of Findings from Group 2 Farmers

Questions		Percentages
Part A: General Characteristics	Farm size:	
	0-10 hectares	33.3%
	11-50 hectares	33.3%
	50+ hectares	33.3%
	No answer	0
	Maximum number of workers hired during peak season:	
	0-10 workers	50%
	11-50 workers	50%
	50+ workers	0
	No answer	0
Part B: OHS Regulations and Training	Difficulty of compliance with OHS regulations being a barrier to hiring SAWs	80%
	Challenges in fulfilling OHS regulations	
	High training cost	66%
	Time associated with training	50%
	Language barriers	33%
Part C: Housing requirements	Housing requirements being a barrier to hiring SAWs	90%
	Challenges in meeting housing requirements	
	Lack of affordability of housing	100%
	Lack of availability of housing	100%

General Characteristics. As summarized in Table 2, the sizes of the 6 Group 2 farms are equally divided in to the three size categories: 33.3% in 0-10 hectares range, 33.3% in 11-50 hectares range and 33.3% in 50+ hectares range. 50% of Group 2 farmers hire 0-10 workers during the harvesting season, and the remaining 50% hire 11-50 workers during the harvesting season.

OHS Regulations and Training. 80% of the Group 2 farmers identified compliance with OHS regulations as a barrier to hiring SAWs. The concerns over fulfillment of OHS regulations included cost associated with training (66%), time associated with training (50%) and language barriers (33%).

Housing Requirements. 90% of Group 6 farmers identified housing requirements as a barrier to hiring SAWs. Concerns over housing requirements included both affordability of accommodations (80%), and availability of accommodations (100%).

Finally, I asked farmers what they think should be done to help them with improved implementation of OHS regulations and housing guidelines. To make implementation of OHS regulations easier and more affordable to farmer, suggestions included making regulations more relaxed and easier to understand, training workers in OHS in their own countries and prior to arriving in Canada, providing one day seminars. To provide suitable and more affordable housing for temporary foreign workers, some of the recommendations included: provision of government subsidies to help with financing of SAWs accommodations, facilitating the application process for installing mobile homes on the farms, allowing small farms to build temporary accommodations on their farmlands, and requiring workers to maintain their own facilities.

To summarize, using the findings of the sample of 14 farmers and evidence provided in section 4, I conclude that the major barriers to effective fulfilment of OHS regulations and housing guidelines are the following:

- Time constraint during the harvesting season and lack of information about support services
- Language barriers between farmers and seasonal agricultural workers
- Lack of affordable housing
- Lack of available housing

Having identified barriers to effective fulfilment of OHS regulations and housing guidelines, I will identify in the next section how other jurisdictions have addressed the identified barriers. The current policies in place and effective programs designed to address similar challenges will guide the design of policy alternatives that can help growers in British Columbia better implement existing regulations and guidelines.

6.2. Analysis of Case Studies

In this section, I provide an overview of the seasonal agricultural workers program in the United States, followed by a brief description of characteristics of migrant workers in the U.S. I

also introduce policies and programs implemented in the U.S. to address occupational health and safety and housing needs of migrant workers.

6.2.1. United State's H-2A Program

The U.S. have a seasonal agricultural workers program similar to Canada's SAWP in terms of design, requirements, implementation, regulations, and guidelines. The federal H-2A is managed by three federal agencies: Department of Labour (DOL), U.S. Citizenship and Immigration Services (USCIS) and the Department of States (DOS). DOL is the regulatory agency that oversees the program to ensure compliance with labour regulations. USCIS evaluates applications for hiring foreign workers also known as labour petitions. Finally, DOS issues work permits for workers at their local offices overseas (Homeland Security, 2008).

Employers in the U.S. are required to provide evidence that they have been unable to recruit local workers prior to hiring foreign workers and the wage rate for an H-2A worker must be the prevailing rate or the minimum wage rate, whichever is higher. The U.S. employers are required to provide free housing. Housing and Occupational Health and Safety regulations are both administered by DOL and are similar to those under the Canadian SAWP. Proper training and safety equipment should be provided to the workers and inspections are required to approve the suitability of housing for migrant foreign workers (U.S.DOL, 2009a).

The majority of workers arriving in the U.S. under the H-2A program are from Mexico. In 2006, 46,432 workers arrived under the H-2A program, among whom 40,283 were from Mexico (Homeland Security, 2006, Table 33). However, the number of workers arriving under the H-2A program makes up a small percentage of the total population of farm workers hired in the agricultural sectors. In 2002, the total number of farm workers was reported to be over one million (FRBSF, 2009). Only 15,628 workers arrived under the H-2A program (Homeland Security, 2006, Table 26). Regardless of their legal status in the U.S., they all share common

characteristics in terms of place of origin, language skills and social status in the country they come from. In 2002, the majority of crop workers were foreign-born (77%) and originally from Mexico (75%), but more than half did not hold a legal status (53%). Most crop workers travel across states to secure employment opportunities in agricultural sectors and are in need of temporary accommodations during their time of employment (U.S.DOL, 2002).

The large demand for temporary accommodations during the harvesting season therefore creates a challenge for farmers hiring migrant workers. FRBSF (2009) provides evidence of overcrowded, sub-standard and unmaintained accommodations. With a serious housing problem, both federal and state governments have taken steps to improve the housing needs. In addition, occupational health and safety of migrant farm workers in the U.S. has raised concerns among human right advocates. In response to these concerns, the U.S. Department of Agriculture's Risk Management Agency in collaboration with the state agencies responsible for occupational health and safety have implemented programs to facilitate effective implication of regulations. In the following 2 sub-sections, I survey initiatives implemented in the U.S. to address the problem of occupational health and safety and housing needs of migrant farm workers.

6.2.2. Addressing the Problem of Occupational Health and Safety of Migrant Workers

This section discusses some of the initiatives taken in the U.S. to address occupation health and safety of migrant farm workers. United States Department of Agriculture (USDA) has a number of partnership agreements in the area of risk management, which provides funding and assistance for research and development, education and outreach programs (USDA, 2005). A few focus on educating and training farmers and farm workers on OHS regulations and hazards. The two successful programs are the Farm worker-Farmer Partnerships to Reduce Risk and Increasing Health and Safety in Agricultural Workplace in Washington and the Agricultural Safety Seminars

in Oregon.⁶ Both programs are relatively new initiatives to address the issue of occupational hazards in the two states. Both states have experienced relatively high injury rates in their agricultural sectors. In Washington, the incidence rate⁷ for non-fatal occupational injuries for crop production was 8.6 in 2005 and 9.0 in 2006; the program was implemented in 2007. In Oregon, the incidence rate for non-fatal occupational injuries for crop production was 4.8 in 2005 and 5.7 in 2006. Although, it is unclear when the training seminars were first implemented, evidence suggests that these seminars are relatively new in the state of Oregon. It seems as high and rising injury rates have motivated the introduction of the new programs in the two states (U.S.DOL, 2009b).

The Farm worker-Farmer Partnerships to Reduce Risk and Increasing Health and Safety in Agricultural Workplace is administered by the Rural Coalition, a Washington based organization, which implements policies promoting a more sustainable agriculture sector. The project is a partnership between the growers, farm workers, an insurance company, a risk management firm and an actuarial firm, who have developed two risk management tools. Both are designed to meet the labour needs of farmers and reduce the risk of occupational hazards to farmers and farm workers. One tool is designed specifically for owner of small farms, and since the design and structures of the tools are similar (Rural Coalition, 2007a), I only describe the one focusing on the small farms.

The Small Farmer- Farm worker Risk Reduction Partnership Tool has four components:

1. An agreement between the farmers and farm workers;
2. Pesticide training and certification;
3. On-site mapping to identify potential sources of injuries; and a meeting with the farmers to correct any identified areas for potential injuries.
4. An evaluation of workers

(Rural Coalition, 2007a, p.1)

⁶ This section is based on Rural Coalition (2007b), unless otherwise stated.

⁷ Incidence rate is the number of injuries and illnesses per 100 full-time workers

The agreement identifies the rights and responsibilities of farmers and workers. Provisions include requirements on housing, health and safety training, tools and equipments, hours of work, wage and benefits and other standard terms of contract. This component of the project applies to the workers that are not H-2A workers since the H-2A requirements mandates an employment contract prior to the worker's start of employment term. The second component is the pesticide health and safety training for all the workers. The training is provided by a certified instructor and is approved by the Environmental Protection Agency (EPA). The trainer first identifies the level of pesticide knowledge among farm workers through pesticide knowledge pre-test. The training is then provided in the language of farm workers and in groups of no more than 18 workers to ensure active interaction. Instructions cover all aspects of pesticide use (i.e. mixing, loading and application of pesticides), use of tools and protective clothing, and regulations and personal hygiene. Once training is completed, workers are provided a training license also known as Worker Verification Card, which is produced by the EPA and is valid for 5 years. The third component of the project includes an on-site mapping exercise to identify possible physical or chemical hazard. Through this interactive exercise, instructors identify possible hazards in front of workers. They then communicate the identified sources of hazards to the farmers and advise for the necessary changes to be made. Finally, the last component is an evaluation by instructors of the level of knowledge of the farm workers about pesticide safety. Instructors also check back with the farmers to make sure the required changes if any at all is being made.

The second program is the Agricultural Safety Seminars. Seminars are run by a non-profit workers' compensation insurance company based in Oregon. They are free and designed to educate farmers on risk management, fatal hazards, pesticides and farm safety. They are also open to other farm staff including the supervisors or those involved in handling pesticides and chemicals. For the past two years, from October to March, 24 seminars are held throughout 16 cities across Oregon, some of which are presented in Spanish to target the non-English speaking

population of farmers. Growers, by attending these seminars, can meet one of the requirements of the Occupational Health and Safety regulations, which exempts them from random inspections (SAIF, 2008).

To summarize, the two programs are designed to help farmers and farm workers get occupational health and safety training despite their limited resources. The next subsection discusses some of the main features of OHS training programs.

6.2.3. Comparative Success of OHS Training Programs

Occupational Health and Safety Agency for HealthCare in British Columbia (OHSAH, 2003) identified a number of characteristics for a successful occupational health and safety training program. A successful OHS training should satisfy the following criteria:

- 1) Have specific objectives
- 2) Be tailored to the needs of the participants
- 3) Be highly interactive and utilize training materials
- 4) Provide training to front line staff
- 5) Provide training to supervisors
- 6) Be made mandatory to ensure high level of participation
- 7) Provide re-training of the workers on regular basis

Table 4 below evaluates the two proposed programs based on the features of a successful training program. I give each program a ranking of 1, if it has the feature and 0 otherwise. The highest-ranking features guide the design of the policy alternatives in this study.

Based on the ranking provided in Table 4, the main features of the two programs are characteristics 1, 2 and 5. Both programs have specific objectives, use bilingual instructors to ensure trainees understand the training materials, and target supervisors. Other features that are not commonly shared between the two programs are characteristics 3, 4, 6 and 7. The Small Farmer-Farmworker Risk Reduction Partnership Tool provides mandatory training to front line

workers. The training is highly interactive and is provided every 5 years upon the expiry of the workers' verification card.

Table 4. Comparative Analysis of a Successful OHS Training Program

Characteristics	Small Farmer-Farmworker Risk Reduction Partnership Tool	Agricultural Safety Seminars	Scores
1. Training with specific objectives	√	√	2/2
2. Training tailored to the needs of employees	√	√	2/2
3. Highly interactive training	√		1/2
4. Training of the of the front line staff	√		1/2
5. Training of the supervisors	√	√	2/2
6. Mandatory training	√		1/2
7. Re-training the workers on the regular basis	√		1/2

6.2.4. Addressing the Housing Needs of Migrant Farm Workers

This section discusses some of the initiatives taken by the federal and the States governments to address the housing needs of migrant workers. On the federal level, the United States Department of Agriculture (USDA) has three programs which provide low-interest rate loans, grants and rental assistance for migrant workers' housing; they are referred to as USDA sections 514, 516 and 521 respectively (USDA, 2007). The funds from the loan or the grant can be used to build new housing or rehabilitate existing housing. Any farmer, associate of farmers, public agency or non-profit agency would be eligible for the USDA 514 loan program; however, only non-profit organizations, associations of farmers, public agencies and Indian tribes could receive grants under section 516, the grant program. The federal funds are available for the use in migrant workers' housing only and not for the H-2A workers' housing (HAC, 2008). However, in addition to the federal funding programs, many states have initiated new approaches to address the housing needs of their farm workers including the H-2A workers. Table 5 below summarizes

some of the programs designed to provide affordable housing for migrant farm workers and to improve the standard of living of existing accommodations.

Table 5. Farm Worker Housing Programs

States	Programs	Type of Funding	Eligible Use of Funds	Eligible Applicants
California	Joe Serna, Jr. Farm Worker Housing Grant Program	Grant and loan	New constructions, rehabilitation of owner occupied and rental units	local government agencies, non-profit co-operations, cooperative housing co-operation
	Rural Pre-development Loan Fund	Loan	Costs associated with moving a project to the approval stage of a long term financing	Sponsors of farm worker housing
Oregon	Farm Worker Housing Tax Credit	State tax credit	On costs associated with construction, rehabilitation and installation of farm worker housing by any investor	Organizations or individual investors
	Farm Worker Tax Credit for Lenders	State tax credit	On loans issued for construction, rehabilitation and installation of farm worker housing	Lenders
	Rural Rehabilitation Loan Fund	Loan	New construction or rehabilitation of existing rental housing	For-profit, non-profit and governmental developers of farm worker housing
Ohio	Agricultural Labour Camp Improvement Program	Grant	Housing and infrastructure improvements	Owners/operators of existing seasonal workers camps

In California, the Joe Serna, Jr. Farm Worker Housing Grant Program: is available to government agencies, non-profit organizations, cooperative housing corporations, and recognized Indian tribes. It provides loans or grant to support new construction and rehabilitation of existing farm workers housing. Applicants are required to provide a matching share to the amount of the loan or the grant that they are requesting. There is a limit for funds available for each project. In 2008, California's Department of Housing and Community Development assigned approximately \$27 million dollars as the available funds for the program (HCD, 2008). The Rural Pre-development Loan Fund provides funding for expenses that are associated with long term financing of the migrant workers' housing. It is a low-interest loan that covers expenses such as

legal and engineering fees. This loan is available to any individual or organization inquiring a loan for farm workers' accommodation (HAC, 1998).

In Oregon, the Farm Worker Housing Tax Credit Program provides funding incentives for growers and non-profit organizations to invest in farm workers housing. The tax credits are transferable, allowing non-profit organizations that do not pay income taxes to transfer their credits to other investors and encourage development of farm workers' housing. Any expense, incurred in building new accommodation, rehabilitating existing ones or installing temporary farm workers' housing can be counted towards state tax credits (CASA, 2009). The Farm Worker Tax Credit for Lenders is administered by the Oregon's Department of Revenue (ODR) as a state tax credit program. It provides tax credits to lenders that provide loans for construction of new farm worker accommodations, rehabilitation of existing ones or installation of temporary accommodations (CASA, 2009). The Rural Rehabilitation Loan Fund provides funds to non-profit, for-profit or government organizations that develop farm worker housings. Eligible projects include new constructions or rehabilitation of existing units. The maximum amount of loan is \$100,000 over a maximum of 10 years. The interest rate on the loans is a fixed rate 1% for non-profit and 3% for for-profit organizations (OHCS, 2008).

In Ohio, the Agricultural Labour Camp Improvement Program provides grants for up to \$50,000 to owners and operators of migrant worker camps who wish to make improvements on the existing housing facilities. Eligible applicants must be licensed by Ohio Department of Health (ODH) which means they should meet the housing and sanitation requirements as provided by ODH (Sachs et al., 2001).

In summary, the U.S. have provided numerous financial incentives to improve the housing needs of migrant farm workers and their main features are discussed in the following subsection.

6.2.5. Comparative Success of Housing Policies

Table 6 below summarizes the main features of the U.S. housing programs. These features are common among some or all of these programs. I give each program a ranking of 1 if it has the feature and zero otherwise.

Table 6. Comparative Success of the U.S. Housing Policies

Characteristics	Federal Programs			California		Oregon			Ohio	Total Score
	USDA 514	USDA 615	USDA 521	JSJFWHG	RPLF	FHTC	FTCL	RRLF	ALCI	
Available to all Farmers	Yes	No	No	No	Yes	Yes	No	No	Yes	4/9
Restrictions on the H-2A workers	Yes	Yes	Yes	No	No	No	No	No	No	3/9
Restrictions on the amount borrowed/ tax credit rewarded	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9/9
Allow for temporary accommodations	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	8/8
Allow for rehabilitation of existing accommodation	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	8/8
Allow for the new constructions	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes	Yes	8/8

Note. JSJFWHG = J Joe Serna, Jr. Farm Worker Housing Grant Program
RPLF = Rural Pre-development Loan Fund
ALCI = Agricultural Labour Camp Improvement Program
FHTC = Farmworker Housing Tax Credit
FTCL = Farmworker Tax Credit for Lenders
RRLF = Rural Rehabilitation Loan Fund

The total scores are added to identify the features with the highest priority. Those with the highest ranking will guide the design of housing policies in this study.

The total scores presented in the last column of Table 6 suggest that the main features of the U.S. programs are:

- Restrictions on the amount of loans available/ tax credits rewarded with 9 out of 9 programs having this feature
- Availability of funds for new constructions, rehabilitation of existing farms and for installing of temporary accommodations with 8 out of 8 programs having this feature

The second highest-ranking feature is the availability of programs to all farmers, which ranks 4 out of 9. The programs that are not available to farmers are only available to government or non-government agencies that specialize in development of farm workers' housing. None of the U.S. programs restricts eligibility based on the size of farm.

These findings are particularly important since the highest-ranking features address some of the concerns raised by the participants of my survey. As discussed in section 6.1., affordability of suitable housing is a major challenge for BC farmers hiring SAWs. They also felt that allowing for temporary accommodations on the farms is a positive step towards addressing the housing issue of migrant workers; however, this new policy should be available to all farmers regardless of the size of their farms, and application fees and red tapes should be reduced to make this policy more effective.

7. Policy Objectives, Alternatives and Criteria

This section first explains the long-term and the short-term objectives for policy recommendations, and second provides a set of policy alternatives designed to address the ineffective fulfilment of OHS regulations and housing guidelines. Then, a set of measures and criteria are introduced to guide the evaluation of policy alternatives in the following section.

7.1. Policy Objectives

The time horizon for achieving long-term policy goals is 10 years and I assign two long-term policy objectives to guide my recommendations:

- Effective fulfilment of OHS regulations
- Effective fulfilment of Housing requirements

This study has shown that farmers face a number of obstacles, which affect their ability to respect regulations and guidelines. Hence, to alleviate these challenges farmers must be induced to protect the rights and well-being of their foreign workers. To achieve the identified long-term goals, I set short-term objectives, which should be achieved within 4 years:

- For OHS, reduce the injury rate among Seasonal Agricultural Workers (SAW) to reach the rate equal to or lower than that of all BC industries combined⁸
- For housing, reduce the over crowdedness of temporary farm workers accommodation; and improve the condition of temporary farm workers' accommodations

⁸ Injury Rate is the number of Non-Health Care Only (Non-HCO) claims per 100 person years of employment. Non-HCO Claims refers to the local number of Non-Health Care Only claims. A Non-HCO claim must have a Short Term Disability (STD), Long Term Disability (LTD) or Fatal benefit in the year or in the following 3 months. A Person Year is equivalent to one person working full time at an occupation for one-year period.

First, Figure 1 shows the trend of the injury rate in BC’s agriculture sector and that of all other sectors combined from 2003 to 2007. Clearly, the rate for agriculture is above the injury rate of all other sectors combined, and policy recommendations should target to reduce it to at least the combined level of all other BC industries. The injury rate among SAW should be equal if not more than the overall injury rate in agricultural industry. Their poor language skill and inability to understand training materials may enhance their risk to OHS hazards. Hence, due to lack of better estimates on injury rate among SAWs, the assumption made here is that the injury rate among SAWs is the same as that of the overall agriculture industry. Hence, since the focus of this study is on health and safety of SAWs, the short-term goal is to reduce the rate among this group of workers.

Figure 1. Injury Rate



Note. Adapted from WorkSafeBC (2009b).

Second, policy recommendations with the objective to facilitate the effective fulfillment of housing requirements should provide alternatives for less crowded accommodations and better

maintenance of facilities. Addressing the problem of overcrowding for the most part resolves the issue of the poor maintenance of facilities. Less crowded facilities often are better maintained as fewer occupants use the facilities. A combination of better housekeeping, fewer occupants per accommodation and improved accommodation maintenance can improve standards of accommodations greatly. Having identified important policy goals, the next section translates the findings from existing literature, survey analysis and case studies into policy alternatives.

7.2. Policy Alternatives

This section presents policy alternatives that the province of British Columbia in coordination with the federal government can implement to help the effective implementation of OHS regulations and housing requirements. For each category of occupational health and safety and housing of seasonal agricultural workers, I provide three policy alternatives. I start with policies addressing OHS concerns and then suggest policies for housing.

7.2.1. OHS Policies

The current approach although effective in principle to provide training to SAWs, has not fully been utilized and is in need to be more proactive. From May 1st to October 1st, 2008, Farm and Ranch Safety and Health Association (FARSHA) hired a Spanish speaking training contractor to provide services such as on-site orientation of new workers, occupational health and safety training and to assist with Spanish learning resources. Farmers need to contact FARSHA to arrange for the services. FARSHA also provides training materials and brochures to assist training of farm workers (FARSHA, 2008). As indicated in section 6, farmers were not aware of these services. Therefore, I provide policies to better utilize the current resources available to the farmers.

❖ *Policy Alternative 1: The Full-Time Hiring of the Training Contractor*

As discussed in earlier sections, the training of the farm workers is an effective and vital step to alleviate farm accidents. In addition, farmers should have a better knowledge about the resources that are available to them. Finally, training should be provided and communicated in a language that workers understand. The temporary hiring of the bi-lingual trainer, although a positive step needs to be adopted on a more permanent basis. Better outreach strategies should take place to educate farmers about the availability of such services. For example, an information book, which summarizes all the necessary requirements for farmers hiring SAWs, should be prepared to inform farmers of their responsibilities and the resources available to them. In addition, co-ordination between FARSHA and agencies managing SAWP perhaps can provide the link between farmers hiring SAWs and FARSHA and provide farmers with a better access to such training resources.

❖ *Policy Alternative 2: Free Educational Seminars for All Farmers and Supervisors*

Educational seminars are an effective strategy that is used to provide information and training to farmers and farm supervisors. As discussed in section 6.1., some participants of my survey suggested that the availability of educational seminars would help them in better implementation of OHS regulations. These seminars can cover variety of topics including risk management principals, general occupational health and safety education and pesticide knowledge and training. Either WorkSafeBC or FARSHA can organize agricultural training seminars in BC's farm communities. The seminars should be presented in both English and Punjabi for both English speaking and Punjabi speaking farmers and supervisors. Agricultural seminars can help farmers of all size operations and improve their knowledge of OHS regulations and requirements. Supervisors and farm managers should also be required to attend the training seminars since they directly monitor workers. Schedules of training seminars should be flexible and not during the busy harvesting season to ensure full participation by farmers and supervisors.

❖ *Policy Alternative 3: Policy Alternative 1 plus Additional Monitoring*

The role of monitoring workers to ensure safe and sanitary practices is crucial in avoiding field hazards and pesticide related illness. Arcury et al. (2001) provides three main strategies to prevent pesticide-related illness. The first strategy is to provide workers with safety equipment and sanitation facilities on the fields. The second strategy is to educate workers about the risks associated with exposure to pesticides and chemicals and learn how to alleviate the risk using safety equipment and sanitation facilities. Finally, a safe work environment where employees are reminded of safe handling of pesticides is required. Hence, in conjunction with the direct training of the workers, enforcement and monitoring is an important element of an effective occupational health and safety strategy. Therefore, as the third policy alternative, I propose a combination of policy alternative 1 combined with additional monitoring and enforcement by hiring an occupational health and safety officers who visits farms hiring SAWs and ensures safe and sanitary practices and compliance with WorkSafeBC guidelines. The officer also has duties such as investigating accidents and claims and issuing compliance orders (WorkSafeBC, 2009a). It is additionally helpful if the officer speaks Spanish and can communicate with workers while visiting farms to learn about their concerns. The inspector is hired by WorkSafeBC and his/her salary is financed by the government.

7.2.2. Housing Policies

The current policy addressing the housing needs of seasonal agricultural workers in BC focuses on the provision of temporary accommodations on agricultural farmland. However, there is no fund directly allocated to the housing needs of seasonal agricultural workers. Under the employment contract, farmers are permitted to charge workers a marginal amount for providing accommodations (HRSDC, 2008a). This section provides three policy alternatives that address the overcrowding and low maintenance of farm workers' accommodations.

❖ *Policy Alternative 1: Government Inspections of the Workers' Facilities*

Policy alternative 1 requires more direct involvement of government through pre and post inspections of farm workers housing facilities. Under the current requirements for hiring SAWs, farmers are required to provide inspection reports by private licensed inspectors. The inspections are done prior to workers' arrival and on annual basis (HRSDC, 2008a, p.2). This policy alternative requires government to hire or contract inspectors of housing facilities. Currently there is no government agency or departmental organization assigned to oversee the housing of SAWs. This policy would require an agency such as WorkSafeBC to open a new administrative unit and hire new staff to inspect farm workers' facilities or to contract inspectors. Inspections should be done before and after workers' arrival according to the requirements of seasonal agricultural workers housing. The pre-inspections would include visits to facilities to check compliance with building codes and housing guidelines, advising farmers about potential need for repairs and certifying the suitability of accommodations. Inspectors may need to arrange to return to workers' facilities if repairs are required. Post-occupancy inspections are required to ensure regulations are not violated after workers occupy the facilities. Inspectors could have the power to fine farmers if they do not make the required changes within a given amount of time (NCDOL, 2008).⁹

❖ *Policy Alternative 2: Low Interest-Rate Loans*

To address the affordability problem, this policy alternative provides low interest rate loans, which can be used towards farm workers housing. The low interest rate loans will have the same structure as student loans and will be administered by the banks. The loans should be made available for the use in new constructions, rehabilitation or installing of temporary accommodations. Funds should also be available for the use in renovating existing dwellings used for farm workers housing and to cover pre-development costs associated with long term financing

⁹ Alternatively, HRSDC could apply the sanctions by limiting entry for workers for the farm for the following reason to the number that could be properly accommodated.

(i.e. legal fees, appraisal fees, and the cost of obtaining building permits). There will be no farm size requirement for eligibility for low interest rate loans. The availability of low interest loans should be tied to certain requirements such as increasing the per person livable area to 10m² or more, and to rehabilitating and better maintenance of existing accommodations. Inspections are required when applying for loans and on regular basis such as when loans are due for renewal. The inspections can be done by private housing inspectors as is the case under the status quo. Government finances the interest on the loans in the form of government subsidies.

❖ *Policy Alternative 3: Assign Managers to Farm Workers Camps*

Farmers should assign supervisors to oversee housekeeping and maintenance of workers accommodations. A study of farm workers in Colorado, through visits to 5 worker camps, finds that although some of the camps that were visited did not meet safety standards, for the most part, these camps met the requirements of migrant workers housing. Therefore, evidence suggests that although farmers satisfied most of the requirements, there was evidence of poor housekeeping by the workers. The same study finds that camps that had a manager living near the camp were better maintained and better housekeeping was observed (Vela-Acosta, 2002). Therefore, to improve sanitation and general condition of the camps, farmers can hire a supervisor, who oversees maintenance and housekeeping. The supervisor earns an hourly wage of \$12 and visits the camps 5 times per week and spends an hour during each visit monitoring and managing the facilities. In the next subsection, I describe the criteria used for the analysis of these policies.

7.3. Criteria

To evaluate my policy recommendations, I choose four criteria: effectiveness, cost, stakeholder's acceptability and administrative feasibility. I assign a measure with a benchmark to each criterion. Based on that, measures are given a performance level of High, Medium or Low,

which corresponds to a score: High =3, Medium=2 and Low=1. Table 7 summarizes the criteria and measures that I use in the analysis of my policy recommendations.

Table 7. Criteria and Measures

Criteria	Definition	Measurement	Value
Effectiveness			
OHS	By how much will the injury rate in agricultural industry (IR Ag) be reduced compared to injury rate in all other industries (IR)?	IRAg – IR ≤ 0 0.5>IRAg – IR>0 IRAg – IR ≥0.5	High Medium Low
Housing	How effective is the policy in increasing Space Per Person (SPP)?	SPP ≥ 10m2 7.44 m2 <SPP<10m2 SPP =7.44 m2	High Medium Low
	How effective is the policy in improving the condition of accommodations?	Better maintenance No change Worse Maintenance	High Medium Low
Cost			
OHS	How much will be the total annual cost (TC) of the policy recommendation per Seasonal Agricultural Worker (SAW)?	Annual TC per SAW \$761-\$780 \$781-\$800 >\$800	High Medium Low
Housing	How much will be the total annual cost (TC) of the policy recommendation per Seasonal Agricultural Worker (SAW)?	Annual TC per SAW <\$550 \$550-\$1381 ≥\$1381	High Medium Low
Acceptability among Stakeholders			
Acceptability among farmers	How does farmers' annual spending change?	Decrease No Change Increase	High Medium Low
Acceptability among government agencies financing the program	How does government's annual spending change?	Decrease No Change Increase	High Medium Low
Administrative Feasibility			
Overall Coordination	How easy is it to implement this policy?	Use Existing Staff: Need to hire new staff: Need to open a new unit for administration:	High Medium Low

Effectiveness. This measure evaluates how effective each policy option is in reaching the objectives. For OHS policies, this measure evaluates how effective the policy is in reducing the injury rate among SAWs. As the benchmark, I use the difference between the injury rate among

the SAWs (IR_{Ag}) and the injury rate in all other BC industries combined (IR) in 2007 (i.e. 0.5, see Figure 1). The policy that reduces the gap to 0 is ranked as High; one that does not reduce the gap at all is ranked as Low; any change in between is Medium.

For policies addressing the housing issue, I identify two goals: reduce the overcrowding of the accommodations and improve maintenance of the accommodations. The measure used for overcrowding is space per person (SPP). Currently, the guidelines for the provision of seasonal housing for migrant farm workers in BC sets the minimum requirement to 7.44 m² (80 sq.ft) per person of total usable floor area, which includes living and sleeping area but not the washrooms. Also, one shower and one toilet facility per occupant is required (WALI, 2005). The requirements for temporary accommodations such as mobile homes has a higher per person total usable area of 10 m² (108 sq.ft) (City of Richmond, 2006b). Therefore, I rank the policy alternative that increases the SPP to more than 10 m² as High; one that increases the SPP to a number between 7.44 m² to 10 m² as Medium; and one that does not change the SPP from its current requirement of 7.44 m² as Low.

Cost. This criterion evaluates the cost associated with implementing policy alternative; it includes both the direct cost and the opportunity cost. For OHS policies, the benchmark is the cost incurred as the result of occupational injuries. It is measured as the annual health-care-only claim cost per worker (direct cost) plus the cost of lost income resulting from lost workdays (opportunity cost). There are no statistical data on the number of workdays that SAWs miss due to a work injury. Therefore, I assume on average over the term of 8 months, migrant workers miss 3 days of work due to an injury or job related accident. At a minimum wage of \$8.90 and an average workday of 8 hours, the opportunity cost associated with a worker's injury is \$214. To calculate the annual health-care-only claim per worker, I use the total cost for health-care-only claim for the year 2007 for the agriculture industry, \$289,519 and divide it by the total number of health-care-only claims for the same year, 528 claims (WorkSafeBC, 2007). The result is

approximately \$548 per health-care-only claim. The total cost per SAW (TC per SAW) is equivalent to \$761 at the benchmark. A policy with TC per SAW more than \$761 and less than or equal to \$780 is ranked High, with TC per SAW between \$780 and \$800 is ranked Medium; and above \$800 is ranked Low.

The benchmark used in evaluating the cost of housing policies is the current cost of providing housing for a seasonal agricultural worker. To calculate the benchmark, I pick the cost of renting a 3-bedroom, one bathroom detached house in Abbotsford, BC, which, in October 2008, was \$1,151 per month (CMHC, 2008). The annual cost of renting a 3-bedroom, one bathroom, which would accommodate 10 workers based on the current requirements would be \$13,812 or approximately \$1,381 per worker. In addition, currently farmers receive from each worker a total of \$550 over the term of contract. I rank policies that cost \$550 or less as High, more than \$550 but less than \$1381 as Medium, and more than \$1381 as Low.

Acceptability among stakeholders. This criterion evaluates each stakeholder's support towards the policy alternative. The two main stakeholders affected by the policies are the farmers and the government. To estimate stakeholder's support, I consider whether each stakeholder's spending increases, decreases or remains the same under each policy alternative. The policy is ranked High for a decline in stakeholder's spending, Low for an increase in the stakeholder's spending and Medium for no change in the spending of a stakeholder.

Administrative feasibility. This criterion measures how easy it is to implement each policy for the government agencies and the farmers. If the policy can be implemented within an existing unit without the need to hire new staff or to open new units within an agency, I rank the policy's performance level as High. If the policy requires hiring of new staff to administer the policy within the existing units, I rank the policy's performance level as Medium. Finally, if there is no existing unit to administer the policy, and the policy alternative requires the opening of a new unit, I rank the policy alternative as Low. Next, I use these criteria to rank the policies.

8. Policy Analysis

Using the established criteria, I predict the overall performance level of each policy alternative. I first evaluate the policies that address occupational health and safety needs of seasonal agricultural workers in BC, and then evaluate those addressing their housing needs.

8.1. Analysis OHS Policies

The result of this analysis is summarised in Table 8.

8.1.1. Policy Alternative 1: Full-Time Hiring of the Training Contractor

Effectiveness. Workers need to be aware of the perceived risks involved in working with pesticides and chemicals and learn about the tools that they can use to reduce the risk of exposure, and farmers should be aware of such services. In addition, training should be provided in the language that the trainee communicates in. Vela-Acosta (2005) suggests that a bilingual pesticide-training program significantly increases workers' knowledge of pesticides. Ore (2008) looks at the impact of the manual handling training on the reduction of injury rate among disability services workers in Australia, and suggests that training reduces injury rates by about 42%. In the U.S., an evaluation of the Home Safe Pilot Program, which is a safety education and training program for residential construction workers, suggests that training significantly reduced injury rate among construction workers. Reportedly, injury rate declined from 17.4 injuries per 200,000 hours workers in 1994 to 14.7 in 200,000 hours worked in 1998 after the training program was completed. This is an 18% decline in prevalence of injury among construction workers over four years (Darragh et al., 2004). This finding implies that the difference between the injury rate among SAWs and the injury rate in other industries combined can be reduced by

18% or 0.65 percentage points. The difference is more than 0.5 which is the benchmark established in Table 7. Therefore, I rank this policy alternative High for its effectiveness.

Cost. The cost of administering this policy is the annual income of a full time training contractor. An occupational health and safety training contractor in construction industry would earn an average of \$20-\$30 per hour (Workopolis, 2009). Due to lack of information on the income level of FARSHA's training contractor, I use the lower value of the per hour wage of this trainer. Over the 12-month contract,¹⁰ assuming a work day of 8 hours, the training contractor would earn approximately \$41,600. Dividing this value by the latest number of seasonal agricultural workers in BC from 2006 (1,253 workers), the cost would be approximately \$33 per worker. Assuming that training would reduce injury rate by 18%, the TC per SAW would also be reduced by a small amount. At an injury rate of 3.6 (Figure 1), out of 1,253 SAWs, 45 are injured. At \$761 TC per SAW, the total annual cost of the status quo is \$34,245. If the IR_{Ag} is reduced to 2.95 under this policy alternative, 36 workers are injured and the annual cost to the government is reduced to \$27,396. This is a reduction of approximately \$5 per SAW. Reducing the TC per SAW by \$5 and adding the \$33 cost of training contractor per worker, the new TC per SAW under this policy alternative is \$789, which is more than \$761 and less than \$800. Therefore, I rank this policy Medium for cost.

Acceptability among stakeholders. Since the services of the full time contractor is free of charge to farmers, their spending will not change under this policy alternative. In addition, training reduces injury rate among workers and reduces the number of days that workers lose due to an injury. Farmers can gain from reduction in workdays lost as an outcome of this policy alternative. Therefore, I rank this policy High for acceptability by farmers. In addition, government finances the full time hiring of the contractor. That means government finances an

¹⁰ The training contractor is hired for the entire year, and there will be an overlap during the 8 months that SAWs are hired.

additional 6 month of trainer's salary under this alternative compared to the status quo. This is equivalent to an additional \$16 per worker. However, government would save \$3 per worker as the result of reduction in the injury rate of SAWs. The health-care-only claim cost as discussed earlier is \$548 per worker. Under the status quo, the direct cost to the government is \$24,660 per year for the total of 45 injured SAWs. Under this policy alternative, the number of injuries is reduced to 36 SAWs and the direct health care cost to the government is reduced to \$19,728 per year. The saving for the government is \$4,932 per year or \$3 per SAW per year. Since, government's spending per SAW is higher than its saving; I rank this policy Low for acceptability by government.

Administrative feasibility. This policy does not require hiring of new staff or opening of a new administration unit. FARSHA can use the existing training contractor to provide training resources to seasonal agricultural workers. Therefore, the administrative feasibility of this policy is ranked High.

8.1.2. Policy Alternative 2: Free Educational Seminars for Farmers and Supervisors

Effectiveness. Existing literature also assign a great value to educating farmers and supervisors. Often training programs target farmers, supervisors and the workers at the same time, as their roles on the farms are interrelated. However, under this policy alternative, workers will not be directly trained. Therefore, due to lack of better estimates, I assume that the decline in injury rate is half of that resulting from direct training of workers; and I assign a 9% reduction in injury rate from training farmers and supervisors. Since supervisors and managers take part in some training and better monitoring of SAWs' performance on the fields, the value of educating them is less than the value of direct and intense training of SAWs. Therefore, I conclude that the training seminars can reduce the gap between injury rate among SAWs and that of all other

industries by 0.32 points, which is less than 0.5. Therefore, I rank this policy Medium for its effectiveness.

Cost. FARSHA and Work Safe BC, currently provide training courses, which are mostly free of charge and are available to the farmers and supervisors (FARSHA, 2008). The goal of this policy is for FARSHA and WorkSafeBC to play a more pro-active role in reaching farmers' communities and to provide them with the same training resources in their own communities. In 2003, United States Department of Agriculture assigned a total of \$98,000 for agricultural seminars for Oregon's Association of Nurseries, which has 1,600 members (USDA, 2003). The cost of training seminars per farmer is \$61 and \$122 for a farmer and a supervisor for each farm operation. Applying the numbers to BC and considering that the latest data from 2006 indicates that 130 farmers hired 1,253 workers, the cost of agricultural seminars for one year would be \$15,860 or \$12 per SAWP. The agricultural seminars reduce the health-care-only claim cost and the workdays lost cost by a small amount of \$2.50 per worker. Therefore, the TC per SAW is \$770, which is more than \$761 and less than \$780; I rank this policy High for cost.

Acceptability among stakeholders. The attendance by farmers is free of charge, and as a result of training seminars, they can gain from reduction in lost work days. Since farmers' spending is reduced under this alternative, I rank acceptability by farmers High. Government pays \$12 per worker to arrange for training seminars and earns \$1.50 in TC per SAW. Government's spending is higher than it's saving under this policy alternative. Therefore, I rank acceptability by government as Low.

Administrative feasibility. In order to organize agricultural seminars, organizations such as FARSHA and WorkSafeBC need to hire new staff. In addition, they need to book locations in agricultural communities where they can arrange these one day seminars. Hence, I rank this policy alternative Medium for administrative feasibility.

8.1.3. Policy Alternative 3: Policy Alternative 1 plus Additional Monitoring

Effectiveness. Numerous studies have indicated that monitoring and enhanced enforcement of regulations often significantly reduce injury rates. A study of the impact of monitoring on the use of safety belts finds that enhanced enforcement reduces fatal and non-fatal injury rate by a variety of percentages, ranging from 7% to 15 % (Dinh-Zarr et al., 2001). For the purpose of this analysis, I take the lower rate of 7% to demonstrate the effectiveness of enforcement. This policy alternative provides direct training to the workers by FARSHA's training contractor and improves the enforcement of current regulations using additional inspections of farms. Therefore, there are multiple effects under this alternative: an 18% reduction in IR_{Ag} from training workers and an additional 7% reduction in IR_{Ag} from enforcing the regulations. This can result in a 0.9 point reduction in the difference between IR_{Ag} and IR . Since the point reduction is more than 0.5, I rank this policy High for effectiveness.

Cost. The cost of full-time hiring of the training contractor is \$41,600 at a wage rate of \$20 per hour and at 40 hours a week. Dividing the cost over 1,253 workers, TC per SAW is approximately \$33 per SAWs as discussed in section 8.1.1. There is also the cost of hiring an occupational health and safety officer. The salary of an occupational health and safety officer can range from \$65,876 - \$83,143 (WorkSafeBC, 2009a). For this study, I take the lower bracket of the annual salary (\$65,876) and divide it by the number SAWs in 2006 (1253). Based on the given estimates, the cost of hiring an occupational health and safety officer is approximately \$53 per SAW. The total cost of hiring a training contractor and an occupational health and safety officer is \$86 per SAW. However, as discussed above, this policy can reduce the injury rate among SAWs by approximately 25%. At an injury rate that is lower by 25%, only 33 SAWs are injured as oppose to the 45 injured SAWs under the status quo. The annual reduction of the health-care-only cost and the cost associated with lost workdays would be lower by \$9,132 or approximately \$7 per SAW. Therefore, the TC per SAW under this policy is \$761 plus the cost of

hiring a training contractor and an occupational health and safety officer (\$86) less the amount of saving resulting from avoided injuries (\$7). The TC per SAW is estimated to be \$840, which is more than \$800. Therefore, I rank this policy Low for cost.

Acceptability among stakeholders. Since the services of the training contractor is provided to farmers free of charge, farmers' spending does not change under this policy alternative. Instead, since this policy is highly effective in reducing injury rates among farm workers, farmers benefit when healthy workers do not miss days from work. Therefore, I rank acceptability by farmers High under this policy alternative. However, as discussed in section 8.1.1., the salary of the training contractor is financed by the government. Since the contractor was hired only on a temporary basis last year, by full time hiring of this training contractor, government's spending increases. In addition, this policy requires the full time hiring of an occupational health and safety officer for additional monitoring and enforcement. The cost of hiring an inspector adds additional cost, which is financed by the government. Therefore, I rank acceptability by government Low under this policy alternative.

Administrative feasibility. The training contractor is already hired by FARSHA under the policy alternative 1. However, policy alternative 3 requires the hiring of an additional occupational health and safety officer to undertake monitoring and enforcement of regulations. Therefore, the administrative feasibility of this policy alternative ranks as Medium.

8.1.4. Evaluation Summary and Policy Recommendation

Based on the results in Table 8, I make recommendations using the scores calculated for each policy alternative.

Table 8. Evaluation of Policy Alternatives

Criteria	Alternative 1	Alternative 2	Alternative 3
	Full-Time Hiring of the Training contractor	Free Educational Seminars for Farmers and Supervisors	Alternative 1 + Additional Monitoring
Effectiveness			
Reduction in IR _{Ag} – IR	High (3)	Medium (2)	High (3)
Cost			
Annual expenditure per worker	Medium (2)	High (3)	Low (1)
Acceptability among Stakeholders			
Acceptability among farmers	High (3)	High (3)	High (3)
Acceptability among government agencies financing the program	Low (1)	Low (1)	Low (1)
Administrative Feasibility			
Ease of Administration	High (3)	Medium (2)	Medium (2)
Total Score	12/15	11/15	10/15

Given the ranking of the three policy alternatives, the full time hiring of FARSHA’s training contractor is the best alternative to improve occupational health and safety of SAWs. This is the policy that I recommend for addressing the health and safety of farm workers as a more immediate strategy. The most promising feature of this policy is the direct training of the workers, which effectively lowers the injury rate among SAWs. The availability of training resources has very little impact if farmers are unaware of the services, as is the case under status quo based on results of my survey. This policy provides training services for farmers that are time constraint during the busy harvesting season. This policy also offers a more proactive role for the training contractor through information handbooks, outreach and coordination between farmers and FARSHA. Administration of this policy alternative is relatively simple considering the training contractor is already hired by FARSHA. The services will be provided to farmers free of charge as is the case under the status quo; therefore, there will be no additional financial burden

on the farmers. Although, government's spending increases under the policy alternative 1, it can save in the form of health care cost while protecting the health and well being of foreign workers in Canada.

The free educational seminars although cost the least to implement, it is not as effective in reducing injury rate among SAWs compared to the other two alternatives. Training farmers and supervisors is not as effective as training the workers that directly handle pesticides and chemicals on the farms. Alternative 3 is also highly effective in reducing the injury rate among SAWs, however it is the most costly alternative to the government. Alternatives 2 and 3 may however have spill over effects as they can also benefit workers other than SAWs. Since farmers may hire a combination of local workers and SAWs, training seminars and enhanced monitoring can benefit local workers as well. This possibility however remains outside the scope of this study

The next section provides analysis of housing policies and makes recommendations on the best policy alternative to improve the housing needs of SAWs.

8.2. Analysis of Housing Policies

The results are summarized in Table 9. Note that I assume the amount accessible through loans is enough to cover all SAWs.

8.2.1. Alternative 1: Government Inspections of Workers' Facilities

Effectiveness. This policy alternative through providing pre and post inspections by government agents ensures farm workers' facilities meet the housing guidelines. As discussed in section 3.2.1., the housing guidelines require 7.44 m² liveable area per SAW. Since this policy creates little incentive for farmers to increase space per person, I rank this policy Low for effectiveness. In addition, the current regulations do not provide any guidelines for better maintenance and housekeeping; and additional inspections may have no effect in improving the

maintenance of farm workers accommodations. Therefore, I rank this policy Medium for effectiveness in improving maintenance of farm workers' facilities.

Cost. Assuming the hiring of two inspectors would be sufficient for monitoring farm workers facilities, the cost of implementing this policy is the cost of full-time hiring of two inspectors plus the cost of providing housing to SAWs, covered by farmers and workers. The later is calculated in section 7.3 and is equal to \$1,381 per SAW for a three bedroom accommodation, which is suitable for 10 workers according to the current standards. Therefore, the TC per SAW under this policy alternative is higher than \$1,381. The policy is ranked Low for cost.

Acceptability among stakeholders. The cost of hiring an inspector is covered by the government under this policy alternative. Under the status quo, inspections are done by private inspectors and the cost is covered by the farmer. Government spending increases under this policy alternative while farmers spending decreases under this policy. Therefore, I rank this policy Low for acceptability by government and High for acceptability by farmers.

Administrative feasibility. Currently, because of government's lack of involvement in inspections of farm workers' housing facilities, there is no administrative unit or staff assigned to farm workers' housing needs. This policy requires the opening of a new administrative unit within WorkSafeBC, which would directly deal with farm workers' housing needs. It would also require hiring of new staff. Therefore, I rank this policy Low for administrative feasibility.

8.2.2. Alternative 2: Low-Interest Rate Loans

Effectiveness. Provision of low-interest rate loans is tied to satisfying a number of requirements including increasing the total liveable space per SAW. Since this requirement is to meet and exceed the minimum space per person of 7.44 m², this policy ranks High for effectiveness in improving overcrowding. This policy also requires additional inspections when a

farmer applies for the loan and when the loan is due for renewal. Additional inspections add motivations for farmers to better implement the regulations. Since farmers have better access to funding resources, they are better able to maintain the facilities and upgrade the existing household appliances. However, this policy does not provide incentive for better housekeeping by workers. Therefore, I rank the effectiveness of this policy in improving maintenance and housekeeping as Medium.

Cost. To calculate the cost of implementing this policy, I use the example of a 3-bedroom accommodation, which based on the current requirements can fit 10 workers with the annual cost per SAW of \$1,381. The total cost of policy alternative 1 is the cost of providing accommodation per SAW and the cost of interest payments of the loan per SAW, which will be financed by the government. Given the limited scope of this study, lack of knowledge about the amount of loan each farmer would require and the amount of available funds, it is difficult to evaluate the exact amount of subsidies. Another cost to the government that is not taken into account in this study is the cost associated with the possibility of farmers defaulting on the repayment of low-interest rate loans. If farmers fail to repay the amount of loan, the loss is underwritten and covered by the government. Calculating this cost is complex and is out of scope of this study. However, clearly, the TC per SAW would be higher than the status quo under this policy alternative since government would provide subsidies and potential losses due to the defaults on the loans. However, since it is clearly higher than the status quo, which is \$1,381 per SAWs, this policy ranks Low for cost.

Acceptability among Stakeholders. Although this alternative increases farmers' access to funds and smoothes out their overall spending, it also increases a farmer's overall spending per SAW. The cost to the farmer is the principal of the loan plus the interest on the loan. Here the assumption is that the farmer is planning to repay the full amount of loan. Although, the interest is lower because of government subsidy, it still adds to a farmer's spending per SAW. As

discussed in section 7.3, acceptability by farmers or the government is measured by the change in their spending pattern. Since farmers' spending increases under this alternative, I rank this policy Low for acceptability by farmers. Government's spending is going to be higher since government provides subsidies for farm workers' housing under this alternative. Furthermore, as discussed in earlier, government may be required to cover the cost of unpaid loans. Despite the limitations on the amount of loans available to the farmers and the screening process they each have to go through prior to being approved for a low-interest rate loan, there are possible losses. Government can use industry specialists to minimize potential losses, but they cannot be avoided. Therefore, since increase in government spending is unavoidable under this policy alternative, I rank this policy Low for acceptability by government.

Administrative Feasibility. The provision of low-interest rate loans is administered by the banks under this policy alternative. For the purpose of this study, administrative feasibility is defined as how easy it is to implement each policy and is measured by anticipating whether each policy can be implemented within the existing administrating unit, whether it would require hiring of new staff, or whether it would require hiring of new staff and opening of new departmental units. Clearly, in evaluating this policy for its' administrating feasibility, several factors are not explicitly taken into account given the limited scope of this study. They include factors such as the complexity of the policy development itself and the difficulty to arrange follow-ups with applicants to ensure proper use of funds. They are important factors to consider in a larger scope study. Here, I make the assumption that the current bank departments assigned to manage low-interest rate loans backed by government such as student loans can manage this policy. That means that the existing units using the existing bank staff do the process of screening the applicants and issuing the loans. Given the definition of administrative feasibility in this study, this policy ranks High for administrative feasibility.

8.2.3. Alternative 3: Assign Supervisors on Farm-Workers Facilities

Effectiveness. Hiring of an on-site supervisor to oversee farm workers' accommodations, although may not improve the overcrowding of the accommodations, plays a vital role in improving the overall maintenance and housekeeping. Therefore, I rank the effectiveness of this policy option High for improvements in housekeeping and maintenance and Low for reduction in overcrowding of accommodations.

Cost. As discussed in section 9.1.2., the cost of hiring a supervisor is \$12 per hour for 5 hours of maintenance and overseeing of housekeeping in a week. The annual cost for the hiring of this supervisor is approximately \$3,120. Using the example of the 3-bedroom accommodation, which provides housing to 10 SAWs, the cost per worker is \$312 per year. Therefore, the total cost per SAW is the cost of providing accommodation (\$1,381) and the cost of hiring a supervisor (\$312) per SAW. The total cost (\$1,693) is higher than the benchmark (\$1,381), therefore I rank this policy Low for cost.

Acceptability among Stakeholders. This policy alternative requires higher spending by the farmers. Therefore, I rank this policy Low for acceptability by the farmers. The acceptability by government is High under this policy alternative, since government's spending does not change under this policy option.

Administrative Feasibility. The administrative feasibility of this criterion is ranked as Medium. Farmers need to hire a new staff to oversee maintenance and housekeeping. There is no need for hiring of new staff and government involvement is not required under this policy alternative.

8.2.4. Evaluation Summary and Policy Recommendation

Table 9 below summarizes the results of this policy analysis for the three proposed policy alternatives discussed above.

Table 9. Evaluation of Policy Alternatives

Criteria	Alternative 1	Alternative 2	Alternative 3
	Government Inspections of Housing Facilities	Low Interest-Rate Loans	Assigning Supervisors for Farmworkers' Accommodations
Effectiveness			
Reduction in overcrowding	Low (1)	High (3)	Low (1)
Improvements in maintenance	Medium (2)	Medium (2)	High (3)
Cost			
Annual expenditure per worker	Low (1)	Low (1)	Low (1)
Acceptability among Stakeholders			
Acceptability among farmers	High (3)	Low (1)	Low (1)
Acceptability among government agencies financing the program	Low (1)	Low (1)	High (3)
Administrative Feasibility			
Ease of Administration	Low (1)	High (3)	Medium (2)
Total Score	9/18	11/18	11/18

Given the overall performance ranking of each policy alternative, policy alternatives 2 and 3 rank higher than policy alternative 1. With the overall score of 11 out of 18 for both alternatives 2 and 3, I recommend alternative 2 over alternative 3. The hiring of an on-site manager, although improves the overall maintenance of the facilities, has no effect on improving overcrowding issue. Alternative 2, not only provides financial resources to farmers, it requires higher space per person for accommodations to be eligible for low interest rate loans. In addition, participants of this study repeatedly indicated that affordability is a significant issue when providing housing to SAWs. They also suggested that the amount of funds they receive from workers to cover the housing cost is insufficient for providing suitable housing. Therefore, available funding resources can help farmers in smoothing out their spending on providing and maintaining the accommodations and should be considered as a more immediate strategy that

would address the housing needs of SAWs. As discussed in the evaluation of this policy alternative, the implementation of low-interest rate loans is a costly alternative for the government. However, considering that the affordability of housing in BC is a serious barrier to providing suitable accommodations based on the findings of this study, this issue requires government's attention in the form of provision of funding resources. Therefore, additional spending by government is unavoidable in addressing the affordability issue. To calculate the exact cost of implementing this policy, an in-depth cost benefit analysis is required, which hasn't been covered in this study due to the complexity of cost-benefit analysis and the limited scope of this study. There is a need for a future detailed analysis of costs and benefits of implementing a low-interest rate loan policy. Data for this kind of cost-benefit analysis can be collected from jurisdictions in the U.S. which have had similar low-interest rate loan policies in place.

Therefore, using the findings from the survey analysis and the analysis of case studies, alternative 2 becomes the more desirable alternative. Alternative 3 adds additional financial burden to farmers and will not be supported by the farmers. Alternative 1 ranks lowest among the three and is ineffective in improving overcrowding and maintenance of facilities and is not recommended as a viable option.

9. Conclusion

Through analysis of survey findings, case studies of best practices and a survey of relevant literature, this study recommends policy options that can improve fulfilment of OHS regulations and housing requirements by BC farmers hiring seasonal agricultural workers. This study reveals that barriers to fulfilment of OHS regulations are farmer's poor access to training resources, time constraint during the harvesting season, which constraints training and workers poor language skills, which makes training ineffective. In addition, limited affordable housing constrains farmers in providing suitable housing to SAWs. As British Columbia takes steps towards integrating a larger population of SAWs into its agricultural sector, it is important to track and overcome the current issues before they become more complex and costly to resolve

Study of other jurisdictions with farm workers population facing similar issues provides several options for addressing occupational health and safety and housing needs of migrant farm workers. After in depth evaluation of several policy options, this study makes two policy recommendations to help improve the fulfilment of OHS regulations and housing guidelines. To reduce injuries among SAWs in BC, this study recommends full time hiring of the training contractor, who was hired last year on the temporary basis. The training contractor through outreach strategies can provide his services to farmers hiring SAWs and provide training in Spanish to ensure effectiveness of training. The training will cover variety of topics including safe handling of chemicals and pesticides and general farm safety practices. To improve the housing needs of SAWs, this study recommends the provision of low interest rate loans, which can finance the housing of SAWs. The low interest rate loans are available to farmers who meet and exceed the current housing requirements. They provide financing resources to farmers while ensuring less overcrowded and better-maintained facilities.

The recommendations of this study require government resources. Despite the current economic crisis and limited government budget, it is unlikely for the demand for agricultural products to decline drastically. It is also unlikely for the agricultural sector to attract local labour force considering its relatively lower wages and harsh work environment. Therefore, labour shortages and the need for SAWs will persist during the tough economic times and farmers will continue to need resources to better fulfill occupational health and safety regulations and housing guidelines.

This study is based on a small sample of BC growers and over a limited time horizon; consequently, only a few challenges have been revealed by participants of this study. One possible area of future research is a province wide survey of growers in British Columbia to reveal other potential barriers to implementing OHS regulations and housing guidelines. In addition, although the Seasonal Agricultural Workers program is a federal government program, it might be relevant for the provincial government in BC to participate in research initiatives addressing occupational health and safety and the housing needs of SAWs from both workers' and farmers' perspectives. Agricultural communities play an important role in vitality of BC's economy and SAWs play an important role in future sustainability of agricultural communities. Therefore, future research should further address similar challenges facing farmers and farm workers.

Appendix A.

Letter of Introduction



SIMON FRASER
UNIVERSITY

Dear Farmer

My Name is Shaghayegh Yousefi and I am a Master of Public Policy Program student at Simon Fraser University, working on my final thesis. I would like to invite you to participate in a survey which constructs the basis for my thesis project. The goal of this survey is to evaluate the challenges that BC Farmers face in providing Occupational Health and Safety Training to foreign workers. I would also like to explore some of the challenges that farmers face with regards to providing foreign workers with suitable housing and accommodation. By participating in this survey, you are providing valuable information for this research project.

Findings of this study will be useful in highlighting the problems that BC farmers face in fulfilling Occupational Health and Safety Regulations and Housing guidelines and what policy alternatives are possible and available to facilitate fulfillment of existing guidelines and regulations.

This survey takes approximately 5 minutes to complete. If you have experience in hiring temporary foreign workers, please fill out pages one and two. If you have never hired a temporary foreign worker, please fill out page 3 only.

Your participation is confidential; therefore please do not include your name on the survey or on the enclosed return envelope. The enclosed envelope has a pre-paid stamp and the return address on it. Therefore, please simply place your completed survey in the enclosed envelope and mail the sealed envelope.

The approval to conduct this survey has been obtained from the Raspberry Industry Development Council. Your Participation is Voluntary. You are not obliged to answer any question. Your refusal to participate or your withdrawal after participation will have no adverse effects on your status as a member of the Raspberry Industry Development Council. There are no foreseen risks to the participants of this study.

Your assistance is greatly appreciated. My thesis is expected to be completed in May 2009. If you are interested in my research results, please do not hesitate to contact me. Thank you in Advance for your great support.

Best Regards
Shaghayegh Yousefi
SFU Master of Public Policy Program

Temporary Foreign Workers in BC's Agriculture



SIMON FRASER
UNIVERSITY

12. Do you think Occupational Health and Safety training is costly?
1 Yes 2 No 3 Don't know
13. How do you think these costs compare to the costs associated with training Canadian workers?
1 More Costly 2 Less Costly 3 Same
14. In April 2008, Farm and Ranch Safety and Health Association (FARSHA) hired a contractor to provide Occupational Health and Safety training in Spanish, were you aware of this service?
If your answer is "No" please go to question 17
1 Yes 2 No
15. During May 1st 2008 to October 1st 2008, did you use the services of FARSHA's training contractor?
1 Yes 2 No
16. Prior to FARSHA hiring a contractor to provide Occupational Health and Safety training to Spanish speaking workers, did you do the training yourself?
1 Yes 2 No
17. Would language barriers be a problem in Occupational Health and Safety training of foreign workers?
1 Yes 2 No 3 Somewhat
18. Have you used the services of a translator while training foreign workers about Occupational Health and Safety?
If your answer is "No" please go to question 20
1 Yes 2 No
19. If "Yes", did you have to pay for translation services?
1 Yes (Please specify) _____ 2 No
20. During busy work days, is it difficult to monitor workers while they are on the field to make sure they follow Occupational Health and Safety rules?
1 Yes 2 No
21. What do you think should be done to make implementation of health and safety regulations easier and more affordable to you?
-
-

Part C: Housing

This section will allow us to identify challenges that you, as an employer, might encounter in providing housing for the foreign workers you hire.

22. Is it more expensive now to provide suitable housing than it was 4 years ago? 1 Yes 2 No
23. Is it more difficult now to find suitable housing for workers than it was 4 years ago? 1 Yes 2 No
24. Does the new bylaw, allowing the re-zoning of farm land for the temporary accommodation of foreign workers, help resolve the housing issue? 1 Yes 2 No
25. What do you think should be done to provide suitable and more affordable housing for temporary foreign workers?
-
-

Thank You for Your Participation

Temporary Foreign Workers in BC's Agriculture



SIMON FRASER
UNIVERSITY

Please fill out this section, if you have never hired temporary foreign workers before.

1. What kind of crops do you produce? (Please specify).

2. What is the size of your production area? (Please specify in what unit: square meters, square foot or square yard)

3. What is the maximum number of workers that you hire during peak season? (Please specify)

4. Why did you decide NOT to hire temporary foreign workers? (Choose as many as applicable)

1 My labor needs are satisfied locally

2 Occupational Health and Safety regulations are too difficult to comply with

3 Housing requirements are too difficult to fulfill

4 Others (Please specify) _____

5. If your answer to question 4 is option 2, why do you think Occupational Health and Safety regulations are too difficult to comply with? (Choose as many as applicable)

1 The cost of Occupational Health and Safety training of temporary foreign workers is too high

2 Occupational Health and Safety training is time consuming

3 Accessing information on Occupational Health and Safety training is challenging

4 It is hard to train temporary foreign workers in Occupational Health and Safety regulations due to their poor English skills

5 Other (Please Specify) _____

6. If your answer to question 4 is option 3, why do you think housing requirements are too difficult to fulfill? (Choose as many as applicable)

1 The cost of providing housing for temporary foreign workers is too high

2 Suitable housing for foreign workers is too difficult to find

3 Others (Please specify) _____

7. What do you think should be done to provide suitable and more affordable housing for temporary foreign workers?

8. What do you think should be done to make the implementation of Occupational Health and Safety regulations easier and more affordable to you?

Thank You for Your Participation

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