FARM-LEVEL IMPACTS IN MEXICO OF THE PARTICIPATION IN CANADA'S SEASONAL AGRICULTURAL WORKERS PROGRAM (CSAWP)

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ABSTRACT

FARM-LEVEL IMPACTS IN MEXICO OF THE PARTICIPATION IN CANADA'S SEASONAL AGRICULTURAL WORKERS PROGRAM (CSAWP)

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In several parts of the world, the number of poor people in rural areas surpasses the capacity of agriculture to provide employment opportunities. The increasing role of off-farm income has highlighted the importance of rural migration, both within Mexico and to the United States (US) and Canada, as a vehicle for poverty reduction. A significant number of Mexican migrants are participating in guest worker programs, performing mainly agricultural activities. These programs allow Mexicans to enter the US and Canada through formal channels. Canada's Seasonal Agricultural Workers' Program (CSAWP) lets Mexican farmers enter Canada to work legally in agriculture, and participants in this Program send remittances home that are an important contribution to rural development.

The main reasons to participate in guest worker programs relate to economic factors, such as the opportunity to earn a relatively high, stable income abroad and the lack of employment opportunities in Mexico, particularly in rural areas. The number of Mexican agricultural workers temporally migrating to Canada through CSAWP has increased significantly over time and now exceeds 12,000 annually. In Mexico, the Program provides an estimated C$70 million in remittance income annually, mainly directed to

rural and poorer regions. In these regions, this fungible income supports consumption activities and expenditures on family education. However, there are also investments in farming activities, in turn enhancing agrarian incomes. This research explores the impact of remittances on farm investments by migrant workers participating in CSAWP, which in turn impact farm income levels. The results highlight the extent to which temporary migrant labour to Canadian agriculture allows Mexican farmers to enhance their agricultural activities through increased farm investments, such as buying better seeds, fertilizer and farm equipment.

The results show that, on the one hand, remittances can significantly enhance farm investments in Mexico that in turn increase farm incomes and, on the other, remittances increase non-farm incomes in Mexico, allowing farm migrants to expand their income portfolio. Hence, these results support the New Economics of Labour Migration (NELM) hypothesis that remittances relax the liquidity constraint in production/investment decisions. Furthermore, family labour availability counterbalances any temporary labour loss because of migration.

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1.1 Background

In many parts of the world, the number of poor people in rural areas exceeds the capacity of agriculture to provide or offer sustainable livelihood opportunities.[1] This lack of opportunities puts the spotlight on off-farm income.[2] In addition, around the middle of the 1960s the crisis in the agricultural sector in Latin American and other developing countries became substantial, playing an important role in pushing out-migration[3], particularly temporary or seasonal migrants who leave their place of origin and go to cities or abroad to look for another income source in the agricultural slack season (Wiggings *et al.*, 2000). This is the kind of migration on which this research focuses, through the Mexican farm workers who participate in the Canada's Seasonal Agricultural Workers Program (CSAWP) described in Chapter 5. The two major factors that contributed to this crisis were industrialization and the economic liberalization process, leaving the agricultural sector, and especially small farmers, without any margin of financial manoeuvrability (Wiggins, 2000; Preibisch, 2002; Canales, 2006; Garcia, 2004).

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* Some terms do not translate well from Spanish to English. In some cases, I have used the Spanish terminology; in other cases, I have tried to find the most appropriate English equivalent.

[1] However, this is not just a matter of number (i.e. population density) but also of land distribution, quality of land and technology.

[2] The term off-farm income refers to all the money earned undertaking any economic activities outside of a person's own farm but someone else's' farm including Canada. In other words: *OFFI = NFI+FW+ME*, where *OFFI*=off-farm income; *NFI*=non-farm income in Mexico, off own farm and not related to farming (no one else's farm either); *FW*=farm wages (outside of the person's own farm); *ME*= migration earnings, including remittances.

[3] The concept of migration is this case should be understood not as a permanent move but a temporary one according to the migration laws and conditions of the CSAWP. Workers participating in the Program are authorized to remain in Canada only for a temporary period: minimum of 240 hours (around six weeks) and not exceeding eight months (Verma et al. 2002).

This crisis has engendered disequilibria in the agricultural labour market in rural Mexico, which has affected most rural inhabitants and small farmers.[4]

Non-farm activities[5] have emerged as an important alternative income source to alleviate this economic crisis. The Mexican population in rural areas has a long history of moving internally from town to town or abroad, and changing economic activities. This means that rural people, who in past years traditionally worked in agricultural activities, have started to undertake off-farm activities. Thus, the Mexican non-agricultural population increased 412 percent over the period 1961-2002, while the agricultural population increased by only 5.8 percent over the same period (FAO, 2004). Small farmers face related concerns of whether they should leave their own farms and go to work for a medium/large farmer or continue to focus on subsistence agricultural activities. According to De Janvry and Sadoulet (2000), 73 percent of *ejidatarios*[6] derive more than half of their income from off-farm activities, which serves as a substitute for farm income derived from access to land.

As a particular case of off-farm activities, rural out-migration has been seen as a potential vehicle for poverty reduction in rural areas, particularly temporary migration. Migration remittances[7] represent an important portion of household income for a

[4] A small farmer is defined as a person who works and cultivates the land and usually *owns* or has the right to use a plot of land, usually less than five hectares of size.

[5] In Mexico (and in Spanish) there is essentially no distinction between off-farm and non-farm. Despite the fact that there are important conceptual differences between non-farm and off-farm terms, the statistical information does not make that difference, and therefore I use those terms interchangeably.

[6] In Mexico, *ejido* is a type of land tenancy that is characterized by being communal and *ejidatario* is a communal landholder. "The *ejido* sector was created by the land reform that followed the Mexican revolution. Land in that sector was allocated to peasant communities called *ejidos*. Today the *ejido* sector contains approximately 60-65 percent of the rural population and is the major reservoir of rural poverty, and the focus of rural development efforts" (De Janvry and Sadoulet, 2001, p. 468).

[7] A general definition of remittances is the net receipt of transactions between the migrant and the related household in the home country, independent of the source of income (be it wages and salaries, social benefits or any other current transfer), the migratory status of the sender in the place of destination (including short-term migrants, re-migrants and permanent migrants), and the migrant's status (e.g. employed or not, legal or illegal, etc.) (Sorensen *et al.*, 2003; Goldring, 2004; World Bank, 2006b). The Bank of Mexico has its own definition on remittance flows and states that

significant number of rural people in developing countries. Recent estimations place the total value of remittances worldwide at over US$100 billion[8] in 2003. From this total, up to 60 percent goes to developing countries (MIF and IDB, 2003), while Latin American countries receive approximately 30 percent (US$29 billion) of the total. In 1980, remittances to Mexico were estimated at only US$698 million (Migration News, quoted by Goldring, 2004), but increased to US$11 billion by 2003 and to almost US$24 billion by 2007 (Inter-American Development Bank, 2008).

In order to improve their economic standard of living, urban and rural people have been migrating (temporary or permanently) primarily to the United States,[9] which offered them better job prospects and a better quality of life. Similarly, Mexican farm workers recently started to migrate temporary to Canada through a guest worker program designed to serve the needs of both Canadian and Mexican governments, augmenting Canada's agricultural labour force and helping rural Mexicans find paid job work. These migrants send remittances to their relatives in their place of origin, where they have many economic, social and educational impacts.

1.2 Impacts of remittances

There is an ongoing debate in the literature about the uses of remittances and the consequent economic impacts. There is significant evidence that remittances are used primarily for daily consumption, leaving almost nothing to productive assets (Reichert, 1981; Rubenstein, 1982, 1983; Weist, 1984 quoted by Conway and Cohen, 1998; Canales, 2006, 2007). Other researchers, however, argue that remittances are used for

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since workers' remittance flows are between persons with a family link, they should be named "family remittances" either living permanently or temporarily in a foreign country (Bank of Mexico, 2005).

[8] Informal and underreported flows could double or triple this amount (MIF, 2003).

[9] In the US there are approximately 10 million undocumented Mexican migrants, which represents one half of all Mexican immigrants in that country (Passel, 2005).

more than just consumption and can have spillover effects on extended families and the local economy, as well as on community development (Sander, 2003; Durand, Parrado, and Massey, 1996, quoted by Conway and Cohen, 1998 for Mexican migration to United States; Basok, 2003; Wiggins *et al.*, 2000; Verduzco, 2003 for the case Mexican migration to Canada; Taylor *et al.*, 1999, 2001; Binford, 2003).

Further, recipients of remittances may keep the cash, establish savings accounts or invest their remittances in land purchases and/or development, including small-scale enterprises and small farming operations. This situation depends on whether recipients have other reliable sources of income and assets such as land (Conway and Glesne, 1986; Mora, 2004, 2005).

A clear example of the impact of remittances is provided by the work of Durand *et al.* (1996, quoted by Conway and Cohen, 1998), which focuses on the indirect regional economic impacts of remittances. These authors are convinced that "migradollar" consumer spending yields substantial and varied multiplier effects in a wide range of Mexican communities. Other related work by Massey, Goldring and Durand (1994, quoted by Conway and Cohen, 1998) identifies the determinants of migrant remittances, highlighting the importance of life-course transitions in remittance decision-making and of community-level factors for determining migratory outcomes and consequences.

This suggests that the economic impact of remittances cannot be generalized for all people, with the size of the impact depending on endowments, education, locality, availability of opportunities and assets in the community, among others. In the case of Mexico, there is evidence that remittances are important for rural families. Data from Mexico's National Institute of Geography and Statistics (INEGI) indicate that, in the year

2000, 1,252,493 households received remittances representing 5.3 percent of the national total households (Tuirán *et al.*, 2001:20, quoted by Goldring, 2004).

In turn, there is evidence that remittances can represent a way out of poverty by improving human, physical and financial assets (Verduzco and Lozano, 2003; Goldring, 2004; Preibisch, 2000, 2004; Sandoval and Vanegas, 2001; Basok, 1999). Indeed, there is increasing evidence that both large and small farmers depend, in one way or another, on the off-farm economy[10] (De Janvry and Sadoulet, 2001).

In Mexico people have a long migration history; Mexicans from both rural and urban areas have turned their sights mainly to the US, where they can access higher wages and improve their economic standards. Mexican migration has followed different channels over time. People have migrated abroad in both formal and informal ways. Guest worker programs allow Mexican people to enter the US and Canada through formal channels. For example, Canada's Seasonal Agricultural Workers' Program (CSAWP) allows Mexican farmers to enter Canada to work legally in agriculture. It is argued that such formal and structured programs provide greater security to migrants than informal migration (Griffith, 2007).

1.3 Research problem

Although the general importance of remittances from participation in the CSAWP is well explained in the existing literature, particularly on rural household consumption (Binford, 2003a, 2003b, 2006; Preibisch, 2000, 2007; Verduzco *et al.*, 2003, 2004; Verna, 2002; among others), the economic effect, especially on *farm investment and therefore on farm*

[10] For example by 1997, the average share of off-farm income out of the total household income was 55 percent, while the share of farm income was 45.1 percent. For small farmers, with less than two hectares of land, the percentages were 77 and 23 respectively for the same year, showing their dependence on off-farm economies (De Janvry and Sadoulet, 2001).

and non-farm income, for people participating in the Program is not well analysed. This impact is very important, not only for Mexican households but also for Mexican communities in general to the extent that remittances contribute not only to enhancing farm investments but also to counterbalancing the loss of labour – because of migration – and the liquidity constraints that Mexican rural households face.

1.4 Research goal and questions

The goal of this study is to analyse the farm-level impacts in Mexico of participation in Canada's Seasonal Agricultural Workers Program (CSAWP). The study attempts to uncover how remittances affect farm investments and household income from both farm and non-farm sources. The analysis has two main aspects. Firstly, the thesis examines the motivations to migrate temporarily to Canada through CSAWP, along with a push-pull factors analysis of participation in the Program. While it may seem obvious that the participation of Mexican migrants in CSAWP reflects a desire to earn more income and the lack of job opportunities in Mexico, it is useful to measure the motivations quantitatively in order to identify the relative importance of different factors. Secondly, this study examines the factors influencing decisions on how to allocate remittance income between consumption and farm investments, in order to determine whether there are secondary impacts on incomes through enhanced farm activities and/or productivity.

Thus, the main objective of the research is to assess the farm-level impacts of participation in CSAWP by evaluating the importance of off-farm activities, in particular the importance of income earned in Canada to the Mexican rural household economy. This leads to two research questions:

a) What motivates Mexican farm workers to participate in CSAWP and therefore migrate temporarily to Canada?

b) How are remittances used by rural household participating in CSAWP and to what extent do they impact on-farm investments?

In order to achieve this overall purpose, I pursued the following objectives:

1. To identify the different reasons that motivate migrants to participate in CSAWP, to assess the importance of each reason and to analyse how these differ according to a range of socio-economic characteristics.
2. To discuss the role played by remittances in rural household investment and classify the factors that influence investments of remittance income.
3. To measure the elasticity of farm investments with respect to remittances among Mexican farm workers participating in CSAWP, along with the elasticity of farm income and non-farm income with respect to remittances, among other individual and household variables.

1.5 Hypothesis

Based on the New Economics of Labour Migration[11] (NELM) theory, it is hypothesized that remittances relax liquidity constraints and enhance farm investments of those migrants engaged in farming activities, as well as enhancing both farm and non-farm income. In addition, migrants are motivated to participate in CSAWP in order to enhance on-farm capital.

Furthermore, the number of years that migrant workers have been coming to Canada through CSAWP may affect how the income earned in Canada is directed. On the one

[11] The NELM theory, detailed in Chapter 7, is appropriate for this study case mainly for two reasons. Firstly, decisions by Mexican agricultural workers to migrate are generally the result of a family decision to diversify the household income portfolio (as the theory states) and, secondly, in Mexico there is little constraint on the supply of farm labour in the areas that are the main source of migrants. Therefore, I can assume that there is not an important labour loss because of migration. Finally, and perhaps most importantly, is the fact that when respondents were asked to score the importance of *"no availability of family labour"* for investing in the farm, the answer averaged 2.31, corresponding on the Likert Scale to a constraint in the Mexican production process that is **not important**. Similarly, *"the cost of labour is too high in their communities"* was scored 2.67 on average, meaning that Mexican farmers consider this constraint **neither important nor unimportant** to agriculture in Mexico.

hand, migrants coming for a number of seasons (i.e. more than four consecutive seasons) are less likely to remit as much money as others in the Program with few seasons experience for they have already covered their basic needs with previous years' remittances. They are also more likely to have made friends in Canada and feel more familiar with the work area, such that they spend more in Canada. On the other hand, migrants participating in the Program for more seasons are more able to invest in Mexico, once basic needs are covered by the previous years' income earned in Canada. Which of these effects dominates will determine the extent to which farm-level investments are made.

1.6 Methodology

To achieve the objectives and answer the research questions, this thesis first undertakes a literature review on topics related to the importance and use of off-farm income for rural people in developing countries, paying attention to research focused on rural Mexico and particularly on the uses of remittances. At the same time, this review lays the groundwork for constructing a theoretical framework to assess the effects of remittances on the rural household economy.

The research takes both quantitative and qualitative approaches to primary and secondary data collection and analysis to answer the research questions detailed above. The research is designed in two phases. The first phase involved exploratory in-depth interviews with 20 migrant workers in rural southern Ontario towns, including Leamington, Bradford, Simcoe and Halton. The interviews followed a standard semi-structured guide and included questions related to the reasons for participation in CSAWP, how easy or difficult it was to come to Canada and the length of time spent in Canada. In addition, migrants were asked for their opinion about their Canadian

experience and the advantages of working temporarily in Canada, both for themselves and for their families. Finally, we asked whether they had learned any new skills or knowledge in Canada and, if so, whether they could apply this to their farm activities in Mexico.

The second phase consisted of a survey of 257 migrant workers in southern Ontario. The questionnaire included questions related to amounts earned in Canada and sent back to Mexico, use of the remittances in Mexico and whether remittances had improved their family's standard of living. The information from the survey made it possible to determine the relative importance of motivations to participate in CSAWP. Subsequently, an econometric model was used to assess the effect of remittances on farm investment.

1.7 Organization of the thesis

The thesis is organized into eight chapters as follows. Chapter 2 discusses the importance of remittances as a special case of off-farm labour market choice for small farmers in developing countries. It covers the structural transformation that the off-farm economy has undergone over time as it shifted from traditional to modern commodities and describes the process of migration (temporal and permanent) as the new feature of off-farm activities. In addition, it re-examines the linkages between international off-farm and domestic farm and non-farm activities, emphasizing the role of remittances as a possible link between these activities. Chapter 3 describes the general background of the Mexican economy, particularly the agricultural sector, and its significant reduction caused by the process of industrialization that lasted until the 1980s, followed by globalization. As a result of these changes, people from rural communities have chosen to participate in off-farm activities. In particular, rural Mexicans have preferred to migrate

(permanent or temporally) abroad, especially to the US, and thus remittances have become a significant source of income, not only for migrants and their family in rural communities, but the entire economy. Chapter 4 presents the survey methodology and general information on the sample of participants in CSAWP, as well as their demographic and socio-economic characteristics at both the individual and household levels. Chapter 5 summarizes the characteristics of CSAWP, its history and evolution over time, why this Program is preferred to other guest programs, and how it operates in Mexico and in Canada. Chapter 6 identifies the reasons why Mexican workers decide to participate in CSAWP, as a special case of off-farm activities, and thus to migrate temporarily to Canada to work in the fruit, vegetable and horticulture (FVH) sector. Chapter 7 assesses the farm impact of remittances sent home by Mexican workers participating in CSAWP, with specific focus on the allocation of this income to farm investment and its impacts on farm and non-farm income. Finally, Chapter 8 presents the conclusions.

Chapter 2

Rural Economy, Off-Farm Activities, Migration and Remittances

2.1 Introduction

As agriculture has failed providing sustainable livelihood opportunities, off-farm activities are seen as an escape from this lack of employment demand, and this situation puts the spotlight particularly on temporal out-migration as a special case of rural off-farm and non-farm employment as a potential vehicle for poverty reduction in rural areas.

Over time, rural economies in developing countries have changed drastically, from traditional agriculture to other, non-farm activities. In the past, the rural economy of developing countries was considered synonymous with agriculture, where rural households received most of their income from the production of food and export crops. In recent years, this perspective has begun to change. There is now a growing recognition that rural households receive their income from a diverse portfolio of activities and that some of the most important of these activities are those connected with the rural non-farm and off-farm sectors (Ellis, 1998).

Among non-farm and off-farm activities, temporal rural migration represents an "enormous escape." It represents an opportunity to earn income to cover their basic needs that is unavailable in their place of origin. Because of this temporary migration, remittances have become the centre of attention, not only for academics and politicians, but also for the majority of rural people, who started to migrate because the possibility of finding a higher paid job was greater in other regions or countries than in their place of origin. The farm/non-farm distinction centres on sectoral classifications derived from standard national accounting practices, while the on-farm/off-farm distinction reflects the

spatial distribution of activities, with "off-farm" income being generated away from one's own land (Barrett and Reardon, 2000).[12]

Three main phases describe the transformation that the agricultural sector has undergone in the process of linking the primary and secondary sectors. The first phase is characterized by the production of traditional and artisanal goods. In this phase, crops were produced through a traditional process using draft animals. The second phase, in which non-farm activities began to play a role in the rural economy, corresponded to the production of less traditional and more modern products. The third and last phase is characterized by agro-industry products and a more technological production process. During this last phase, a significant number of factories were installed in rural areas, thus linking the agricultural and industrial labour markets. In all three phases, the common denominator was the presence (in some form) of off-farm activities linking the primary and the secondary sectors. More recently, remittances have come to play a linking role between on-farm and off-farm sectors, mainly through expenditure and investment decisions.

Temporal migration flows started mainly in the third phase as a particular case of off-farm activities. They arose because of the growing linkages between rural and urban areas as people started to pass along information about urban and external migration and, with it, the possibility of diversifying the household income portfolio (Barrett and Reardon, 2000).

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[12] More accurately, "farm" activities are associated with the primary sector production processes that generate raw agri-food products from natural resources (land, rivers/lakes/ocean, air). The process can involve either growing (e.g., cropping, aquaculture, livestock husbandry, woodlot production) or gathering (e.g., hunting, fishing, forestry). "Non-farm" activities are associated with secondary and tertiary sector production that uses raw physical intermediate inputs (such as maize, milk, iron, wood) and processes them into manufactured goods (e.g., maize flour, cheese, pails, furniture) or uses financial or manufactured capital and labour to produce services (e.g., transport, commerce, banking). Notice that sectoral assignments depend only on the nature of the product and the types of factors used in the production process; they do not consider spatial aspects (working at or away from home) or the nature of employment (self-employed or hired for a salary or wage).

The purpose of this chapter is to show the importance of remittances as a special case of off-farm labour market choice for small farmers in developing countries; describe the structural transformation that the off-farm economy in Mexico has experienced over time as it shifted from traditional to modern commodities; and explore migration processes as the new face of off-farm activities. In addition, it re-examines the linkages that off-farm and non-farm form with farming, emphasizing that migration flows from less developed to more developed areas and that the remittances resulting from this movement represent an alternative household income source that may increase investment in farm and non-farm activities.[13]

2.2 Off-farm activities

The terms "off-farm," "non-farm," "non-agricultural," and "non-traditional" routinely appear in apparently synonymous ways, but they are slightly different. Reardon and Berdegué (1999) make a distinction between off-farm income (OFFI) and non-farm income (NFI), emphasizing that the former is a broader category than NFI. OFI embraces rural non-farm income (NFI) plus agricultural/farm wages (FW) – income earned performing agricultural activities on someone else's land – plus migration earnings (ME). In effect, this means everything except the income earned from one's own farm. It can be described by the following equation:

$$OFFI=NFI+FW+ME \qquad [2.1]$$

In addition, the term "farm" needs to be understood explicitly as referring to a set of economic activities, rather than to the location where any particular activity is performed. Hence, a distinction between "farm" and "agriculture" would also be appropriate, where

[13] Most of the studies reported in the literature suffer from a severe endogeneity bias between migration and remittances with investment decisions in the sense to know which variable goes first if people migrate because they need to send remittances home or remittances are sent because of migration; this issue will be addressed in Chapter 7.

the latter refers exclusively to crop cultivation, while the former also includes the auxiliary agricultural activities mentioned above.

In Equation [2.1], the term ME includes remittances sent back home by migrants as a part of household income. Therefore, ME encompasses the income from a diversity of economic activities in a range of sectors abroad. In general, ME is the smallest share in household income, but for some people it could represent the only household income source (De Janvry and Sadoulet, 2001; Reardon, Cruz and Berdegué, 1998; Adams, 1991).

2.2.1 Economic importance

Developing countries generally show some kind of dualism in their labour markets, be it with respect to production structure (traditional and modern), to geographical location (rural and urban or some combination – e.g. rural-town/peri-urban), to the legal nature of activities (formal and underground or illegal), and to the composition of the labour force (skilled and non-skilled) (Lanjouw and Lanjouw, 2001). Further, the activities that rural populations engage in are heterogeneous, ranging from agro-processing and manufacturing to construction and services. Often, self-employment and household enterprises are as important as wage-labour activities. As total income rises, the share of income from off-farm activities also tends to rise, suggesting that this sector represents a potential route out of poverty. Nevertheless, employment in off-farm activities appears to be strongly associated with higher education levels and better access to infrastructure, factors that may limit participation by the poor (Lanjouw and Lanjouw, 2001; Wiggins *et al.*, 2000; De Janvry *et al.*, 1997; Escobal, 2001; Reardon *et al.*, 2001; Yunez-Naude, 2001).

Developing countries have experienced a rapid increase in their non-agricultural population,[14] and therefore non-agricultural employment has become an important income source. The income earned in these activities not only is used to alleviate poverty in terms of consumption but also to invest in farm production factors, and/or to improve household assets (e.g. children's education). *Table 2.1* shows global trends in agricultural and non-agricultural populations as well as trends in specific developing countries. In 40 years, the total non-agricultural population increased twofold, while in Africa the increase was almost fivefold.

In contrast, the agricultural population for developing countries increased just 62 percent. One noteworthy point is that while agricultural and non-agricultural populations have increased in all the countries cited, in Latin American countries the trend is reversed: the agricultural population decreased four percent from 1961 to 2002. A closer examination shows the agricultural population in Latin American countries increased until the 1980s but after then started to decrease. This tendency shows not only an increase in the non-agricultural population *per se* but also a switch in activities from agricultural to non-agricultural.

[14] This is also true for developed countries like the United States. Johnson (2004) argues that communities in developed countries are less dependent on farms than farms are dependent on communities. In 2000, only 420 non-metropolitan and 39 metropolitan counties depended on farms for more than 15 percent of income, but between 80-90 percent of farm family income comes from off-farm sources, and more than two thirds of this comes from off-farm jobs in the community.

Table 2.1 Agricultural and non-agricultural population (Thousands of people)

	1961	1970	1980	1990	2000	2001	2002	Growth rates 1961-2002 (%)
World								
TOTAL	3,080,130	3,692,499	4,434,675	5,263,586	6,070,586	6,148,063	6,224,978	102.1
Agr. Pop	1,794,727	1,995,884	2,218,581	2,443,394	2,573,456	2,581,373	2,588,425	44.2
Non-Agr. Pop	1,285,403	1,696,615	2,216,094	2,820,192	3,497,130	3,566,690	3,636,553	182.9
Dev. Countries								
TOTAL	2,098,764	2,613,995	3,263,267	4,006,557	4,754,077	4,827,164	4,899,943	133.5
Agr. Pop	1,541,500	1,801,217	2,059,728	2,309,401	2,473,704	2,484,627	2,494,610	61.8
Non-Agr. Pop	557,264	812,778	1,203,539	1,697,156	2,280,373	2,342,537	2,405,333	331.6
Africa								
TOTAL	284,173	357,284	469,616	622,440	795,672	813,799	832,089	192.8
Agr. Pop	222,568	265,608	314,027	378,849	443,150	449,108	454,954	104.4
Non-Agr. Pop	61,605	91,676	155,589	243,591	352,522	364,691	377,135	512.2
India								
TOTAL	462,780	554,911	688,856	846,418	1,016,938	1,033,395	1,049,549	126.1
Agr. Pop	323,782	374,784	441,865	492,969	545,722	549,669	553,281	70.9
Non-Agr. Pop	138,998	180,127	246,991	353,449	471,217	483,725	496,268	257.0
Latin Amer. & Caribbean								
TOTAL	224,405	284,858	361,401	441,526	520,231	527,948	535,626	138.7
Agr. Pop	111,166	122,606	127,135	117,024	108,311	107,276	106,212	- 4.46
Non-Agr. Pop	113,237	162,253	234,268	324,502	411,921	420,677	429,416	279.3

Source: FAO, 2004. "The demographic data collected in a census of agriculture refers only to persons attached to agricultural holdings. A holding may consist of the holder, other persons belonging to the holders' household, and hired workers who either permanently or occasionally work on the holding. Other categories of the agricultural population – members of landless hired workers' households, persons engaged in hunting, forestry and fishery activities or agricultural services – are by definition excluded. On the other hand, the census may include people who belong to an agricultural household but are not dependent on agriculture (artisans, etc.). The number of members of the holders' households may thus be either smaller or larger than the agricultural population." (FAO, 2000)

2.3 Linkages between off-farm and on-farm activities and feedbacks to the farm

Evidence from Africa and Latin America shows that the rural non-farm sector is subordinated to the development of agricultural sector. One sector's growth affects and is affected by the other, acting to improve consumption and investment productivity in the agricultural sector (Haggblade *et al.*, 1988). Evidence from Mexico shows the agro-industrial sector initiates these linkages using farm outputs (Rello and Morales, 2002).

Linkages[15] between the farm and off-farm sectors can be divided into three key channels: **production, expenditure-consumption and investment** (Wiggins and

[15] Based on data from India, Rangarajan (1982) found that an increase of 1 percent in the agricultural growth rate stimulated an increase of 0.5 percent in the growth rate of industrial output and 0.7 percent to the growth rate of

Proctor, 1999; Hazell and Haggblade, 1993; and Reardon, 2000). **Production linkages** happen when increases in farm income lead to investment in non-farm activity in order to provide goods and services to agriculture ("backward" or "upstream" linkages) or processing and distribution services related to farm outputs ("forward" or "downstream" linkages). **Expenditure-consumption linkages** refer to the household demand for products of other activities as farmers consume non-farm products with the income generated from agriculture activities. At the same time, self-employed workers and wage earners use income from the sale of non-farm products or from working in non-farm activities to buy food and other agricultural outputs. They refer to the quantity of money households are willing to spend to cover their needs. The **investment linkages** refer to the quantity of money households use to finance farm or non-farm activities. Investment linkages are important for households since the returns on non-farm activities may be invested to initiate or increase farm activities and vice versa (Reardon *et al.*, 2002).

2.4 Motivations to undertake non-farm activities

Why do households diversify? Farm household diversification into non-farm activities emerges naturally from diminishing or time-varying returns on labour or land, from agricultural market failures or frictions from *ex ante* risk management, and from *ex post* coping with adverse shocks. As we have seen, in the 1980s and 1990s less developed countries experienced rapid labour transfer from agricultural to non-agricultural activities (*Table 2.1*).

There is a large body of literature looking at the determinants of off-farm rural diversification and its relationship with poverty. As Reardon *et al.* (1992) note, both

national income. Haggblade *et al.* (1988, p. 35) estimate "Africa's rural agricultural growth multipliers to be in the order of 1.5. That is, a $1 increase in agricultural incomes will generate about 50 cents of additional rural income, primarily among suppliers of rural non-farm goods and services. This initial estimate places the African multipliers at about 60 percent of what they appear to be in a few Asian countries for which we have estimates."

theory and empirical evidence are ambiguous about the effects of household land and non-land wealth on income source diversification behaviour. This means that people undertaking off-farm activities could be in radically different economic situations. Some farm households may be "pushed" into non-farm activities in their fight to survive, while others may be "pulled" into them by their desire to accumulate (*Table 2.2*).

Table 2.2 Push and pull factors leading to non-farm activities

Pull Factors	Push Factors
Lower risk of non-farm rural employment (NFRE) compared to on-farm activities	Higher risk on agricultural activities compare to non-farm rural employment
Rural economic development (industry)	Population growth
More income certainty	Weather conditions or temporary events and shocks
Appeal of urban life to younger people	Education
Economic opportunities and social advantages offered in urban centres and outside the region or country	Lack of access to farm input markets
Generation of cash to meet household objectives	Low farm productivity
Higher return on labour in NFRE or higher return on investment in NFRE	Low returns from farming
	Inadequate access to fertile land
	Liquidity constraints or lack of access to rural financial markets
	Land constraints
	Political instability

Source: Reardon, 1997; Davis and Pierce, 2001.

"Pull" factors are related to earning higher incomes via better returns in the non-farm sector relative to the farm sector; the realization of strategic complementarities between activities, such as crop-livestock integration or milling and hog production; and specialization according to the comparative advantage accorded by superior technologies, skills or endowments. "Push" factors include risk or land constraints, lack of insurance, and weak input credit markets. For example, farm households have to manage the periods of uncertainty that affect household income and consumption, such as drought and natural catastrophes; therefore, they decide to diversify their activities towards those with profits that have a low or negative correlation to farm activities.

Off-farm activities can be seen as one way in which households increase their portfolio of livelihoods and hence reduce risk and enhance welfare. For most developing

countries, the non-farm income share of household income is 20 to 70 percent. However, there are significant differences among countries. For example, the non-farm income share for rural people in Africa is between 25 and 30 percent, and "because non-farm activities are monetized to a much larger extent than is agricultural production, non-farm earnings constitute an even larger share of cash income" (Haggblade *et al.*, 1988, p. 5). Thus, despite the persistent image of Africa as a continent of "subsistence farmers," non-farm sources may already account for as much as 40 to 45 percent of average household income, and it seems to be growing in importance (Reardon, 1997; Little *et al.*, 2001).

Lanjouw and Lanjouw (2001) found that most surveys related to non-farm activities show that people have undertaken a job in the slack periods of the agricultural cycle. Therefore, it can be argued that the results shown in *Table 2.3* underestimate the actual percentage of labour hours devoted to non-farm activities.

Table 2.3 Aggregate statistics for the non-farm sector

Country	Percentage of rural employment that is non-farm			Sectoral breakdown				Percentage of income from non-farm activities
	Total	Male	Female	Mining and Construction	Manufacturing	Commerce and Transportation	Services	
India & Asia								
Bihar (1991)		13	6					
Kerala (1991)		44	44					
Punjab (1991)		14	43					
Uttar Pradesh (1991)		25	8					
West Bengal(1991)		26	27					
India (1994)								34
Indonesia Central	37	-	-	-	30			
Malaysia (1970)	34	38	28		5			
Malaysia (1980)	49	53	42		10			
Pakistan (1982/1983)	32				9			
Philippines (1985)	33				7(1982)			56
Sri Lanka (1981)	46				8			
Taiwan (1966)	47			3	23	16	44	
Thailand (1985)	31				5(1983)			
Africa								
Burkina Faso(1985) Sahelian zone								52
Cameroon (1976)	8	13	3	11	30	20	39	
Egypt (1997)								50
Ghana (1991) b		30	42					
Kenya (1976)								28
Malawi (1977)	9	15	3	19	30	28	23	
Mali (1976)	6	4	15	2	61	14	23	
Mauritania (1977)	21	-	-	7	18	34	41	
Rwanda (1978)	5	9	1	22	23	14	40	
Senegal (1970/1971)	18	-	-	7	34	38	21	
Sierra Leone(1974)	14	15	12	13	20	45	21	36
Tanzania (1975)								23
Latin America								
Brazil (1997)		24	30					39
Chile (1990)		19	67					
Chile (1998)		26	65					41
Colombia (1991)		31	71					
Colombia (1997)		33	78					50
Costa Rica (1990)		48	87					59
El Salvador (1997)		33	81	14	28	31	26	
Ecuador (1995)b	43	37	50	10	22	37	23	41
Honduras (1990)		19	88					38
Mexico (1996)		45	67					
Panama (1998)		47	93					50
Venezuela (1994)		35	87					

Source: Lanjouw, P. and Feder, G., 2001, p. 4-5

Haggblade *et al.* (1988) concluded that "15 to 65 percent of farmers have secondary employment in the non-farm sector and that 15 to 40 percent of total family labour hours are devoted to income-generating non-farm activities" (p. 4).

De Janvry and Sadoulet (2000) argue that heterogeneous access to assets exposes farmers to market failures, particularly those with less assets. These assets are multidimensional and include natural, human, institutional and social assets. Endowments play an important role in accessing these assets and in determining the household income level. This means that farmers with available capital, or access to it, can easily diversify their farm/off-farm activities. Evidence in Mexico shows that rural people living in well-endowed communities can invest more in agricultural inputs, buy more land and/or invest in modern/diversified activities than poor people who, having no opportunity to engage in other activities, continue in subsistence agriculture (De Janvry and Sadoulet, 2000).

Table 2.4 shows a number of Latin American countries and their non-farm income share. One can infer that the poorer the country, the greater the dependence on non-farm activities. For example, in the case of Haiti, one of the poorest countries in the region, non-farm income represents approximately 68 percent of total rural income.

Table 2.4 Rural non-farm income shares in rural income

Country	Survey year	Non-farm income share (%)	Source
Brazil	1977	39	Da Silva and Del Grossi, 1999
Chile	1977	41	Berdegué *et al.*, 1999
Colombia	1977	50	Echeverri, 1999
Costa Rica	1999	59	Weller, 1997
Ecuador	1995	41	Elbers and Lanjouw, 2000
El Salvador	1995	38	Lanjouw, 1998
Haiti	1996	68	Wiens and Sobrado, 1998
Honduras	1990	38	Weller, 1997
Mexico	1997	55	De Janvry and Sadoulet, 2001
Nicaragua	1998	42	Corral and Reardon. 1999
Peru	1997	50	Escobal, 2001

Source: Taken from Reardon, et al., 2001, p.401

2.5 Migration flows from less to more developed areas

Nowadays, international migration (permanent or temporal) is a common phenomenon for many developing countries. In general, migration can be categorized in three ways, according to: a) spatial factors, b) temporal factors and c) type of migrant:

Spatial
- **Internal migration**: Outside the community of origin but within the country of origin.
- **External migration**: Outside of the country of origin.

Temporal
- **Seasonal or temporal**: Migrants return to their community of origin after a certain period.
- **Definitive or permanent**: Migrants do not return to their community of origin for an extended period of time, if at all.

Type
- **Skilled**
- **Refugees**
- **Unskilled**

Spatial migration refers to people's movements from one country, place or locality to another; it is divided into two sublevels: internal and external. **Temporal** migration refers to the length of time people spend away from their place of origin: temporary migration or definitivee/permanent migration. The third category of migration is based on the **type** of migrant: skilled, unskilled or refugee (Wiggins and Proctor, 1999, p. 9).

Migration can also be defined as **circular, step, chain** or **seasonal.**[16] **Circular** migration is characterized by people returning to their place of origin no matter how long were they away. **Step** migration refers to people who start by migrating a short distance, and then, step-by-step, moving further away until they can migrate abroad. **Chain** migration occurs when one member of the family migrates and then pulls other family members; this kind of movement will later be called network migration. Finally, the best known form of migration in agriculture is **seasonal.**

Thus, there are many key issues involved in the migration process. Who migrates? What factors determine migration? Do migrants send money home? What are the motivations to remit? Do households spend their remittances mainly on consumption, or

[16] Wiggins, Otiendo, Proctor and Upton (2000) show that "...across developing countries, one quarter or more households have a member absent as a migrant. Perhaps surprisingly, the majority of migration is regarded as temporary, either seasonal or circular" (p. 3).

do remittances serve as investment linking farm and non-farm sectors? These questions will be addressed theoretically based on the literature review presented in this chapter and Chapter 3 and empirically for the case of Mexican agricultural workers participating in CSAWP in Chapters 6 and 7.

2.5.1 Migration motivations/decisions

There is no single theory that explains migration movements, but an integrative set of reasons involving the individual and/or family/group decisions to migrate using different sets of assumptions and concepts can provide an explanation of the new face of this globalized world. One of the earliest theories – introduced by Lewis (1955), Ranis and Fei (1961) and Harris and Todaro (1970), for example – explained labour migration as a process of development. According to this theory, international migration occurs as a response to wage differentials across countries. This macro theory has certain weakness, however, that prompted the development of a micro theory of migration that focuses on individual choice. This approach, initiated by Sjaastad (1962), treats migration as an investment in human capital. An individual migrates when the present value of the income that can be earned in the destination place is greater than the value he or she could earn at home less the costs involved in migration. Therefore, migration places a worker in an area where his or her labour skills earn a higher wage, reflecting an investment whose return can be calculated. Some of the conclusions that arise from this theory are that migration occurs in response to differentials in earnings and employment rates, and, therefore, individual characteristics that increase either of these in the destination country increase the probability of migration.

Yezer and Thruston (1976) extended the human capital approach to migration to deal with the decision of migrants either to continue staying at the destination place, to migrate to another place, or to go back to their place of origin. Empirical tests based on this theory suggest a learning process that induces more searching, and hence additional migration. Vijverberg (1993) uses an inter-temporal human capital model of migration wherein the focus is the productive characteristics of the migrants. In his study on Cote d'Ivoire, where migrants are compared with a reference group based on education, experience and other demographic features, the former are found to be more productive than non-migrants in their respective reference groups. Nakosteen and Zimmer (1980) incorporate the notion of endogenous selectivity in their model of migration. According to this approach, a migrant is inherently different from a comparable non-migrant.

There are studies that base migration not only on the individual characteristics of the migrant, but also on the features of the household from which the migrant comes. Adams (1991), using data from Egypt to find the economic and demographic determinants of international migration, found that education might not be positively related to migration. Rather, Adams describes the relationship between income and migration as a flattened inverted U-shape, where males from poor and landless households have the highest propensity to migrate.

Using a family model that incorporates social structural and socio-economic resources, as well as behavioural and interactional characteristics of the family, shows that migration of families is deterred by social ties and that married people are less likely to move than single people. On the other hand, families act collectively to maximize expected incomes, share risks, and ease liquidity constraints. According to this approach,

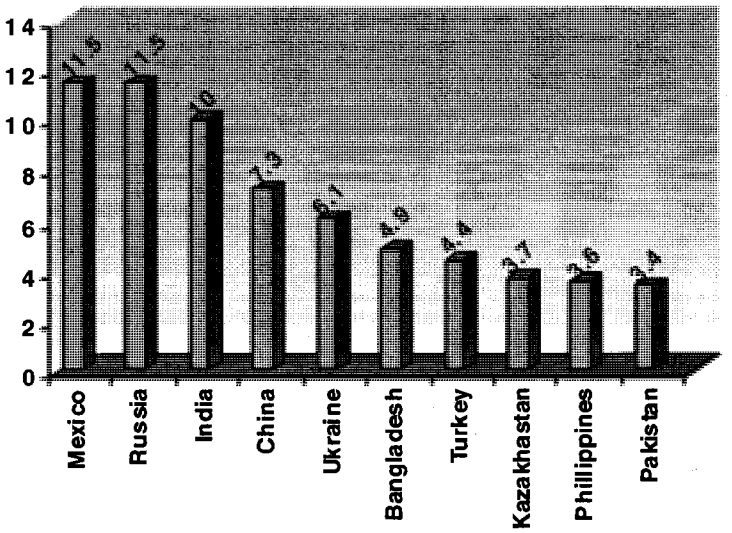
migration may occur not because of wage differentials but because of a family's decision to diversify risk. Thus, risk-averse small farmers diversify their family income portfolios by sending a migrant to an urban location (Mincer, 1978; Root and DeJong, 1991; Stark and Levhari, 1982; Stark, 1991). Stark and Lucas (1988) and Lucas and Stark (1985) view this set-up as a contractual arrangement between the migrant and the rest of his or her family who stay behind. This contract is assumed to be cooperative as the migrants send money back (remittances) because of family altruism. (Section 2.6.2 examines different theories on the motivations behind remittances.)

2.5.2 Migration data from developing countries

For any of the above reasons, or a combination of them, 145 million people from developing countries have decided to migrate (permanently or temporarily) to other areas, usually to more developed ones, as can be observed in *Figure 2.1*. Ten developing countries account for 66.4 of the total 145 million migrants.[17] Heading the list are Mexico and Russia, which share first place, followed by India and Ukraine (World Bank, 2006b).

[17] Figures here should be considered as estimations only. It is difficult to determine the exact number of migrants because there are a significant number who migrate illegally and therefore are not registered officially.

Figure 2.1 Top 10 developing countries in terms of emigration, 2005
(Number of emigrants, millions)

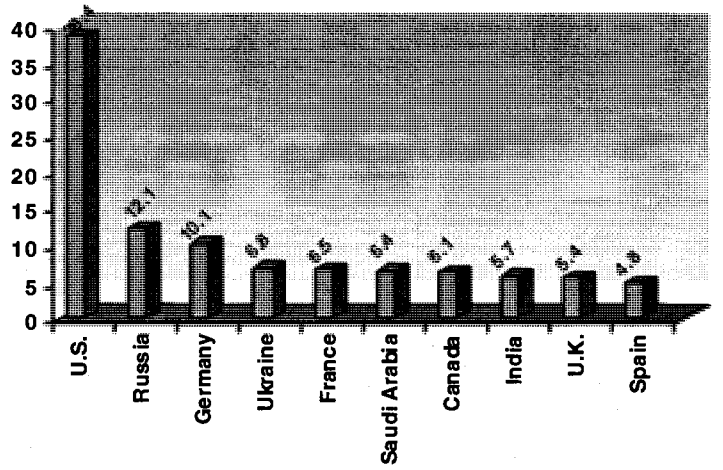


Source: World Bank, Migration and Remittances Factbook, 2006

For many years, migration corridors have been developing between countries. Either because of the closeness between countries or because of an existing network of migration, certain corridors have become famous for migrants. For example, in North America, there is a well-known migration corridor between Mexico and the US that has allowed Mexicans to reach "the other side" where they have found paid jobs and from where Mexico receives the majority of remittances. In Europe and Asia, there are bi-directional migration corridors between Ukraine and Russia and between Bangladesh and India (World Bank, 2006).

Emigration to high–income OECD countries represents 41.5 percent of the total out-migration from developing countries; to high-income non-OECD countries, 11.5 percent; to middle-income countries, 26.3 percent and to low-income countries, 12.1 percent. The remaining eight percent of the destination countries were unidentified (World Bank, 2006). The US occupies the first place among the top 10 receiving countries, followed by Russia (because of the bi-directional flow as stated above) (*Figure 2.2*).

Figure 2.2 Top 10 immigration countries, 2005
(Number of immigrants, millions)



Source: World Bank, Migration and Remittances Factbook, 2006

Most of the time, migration results in benefits to both the migrant – having a job – and the household members left behind – remittances sent home – even though it also has a very high cost in terms of separating families. The most visible product of international migration is the remittances sent and received. Not only are remittances critical to the foreign exchange position of many labour-exporting countries but they are also vital to the consumption and investment behaviour of migrant households themselves (Colby, 1997). However, it is important to note that remittances can be defined and understood in a number of different ways.

2.6 Remittances

In general, remittances to rural households are a fundamental part of off-farm income. As discussed in Section 2.2, off-farm income consists of three elements: non-farm income (NFI) earned by performing any economic activity but farming, farm wages (FW) earned through agricultural activities on another person's land, and migration earnings (ME) that come from performing farm or non-farm activity abroad. In this sense, remittances may differ from other off-farm income as the first two elements exclude certain economic

sectors and focus on work inside the country, while migration earnings can encompass any economic sector and focus on work outside the nation (Reardon *et al.*, 1994a).

2.6.1 Remittances and data reliability

All monetary remittances are registered in the balance of payments of the receiver country. There are, however, international recommendations to define and methodologically consider differences between remittances depending on who the sender is. The International Monetary Found (IMF) recommendations are based on a much broader definition and include three categories of data:[18]

Workers' remittances refer to the value of monetary transfers (recorded in the current account of the balance of payments) sent home from workers who stay abroad for more than one year, irrespective of their immigration status.

Compensation of employees refers to the wages, salaries, and other remuneration, in cash or in kind, paid to individuals who work in a country other than where they legally reside. For example, the wages earned by seasonal or other short-term migrant workers (i.e., those working abroad for less than a year) would be included in this category, as well as border workers who work, but do not reside, in a neighbouring country. It also includes wages and salaries earned by the local staff of foreign institutions, such as embassies and international organizations, and companies based abroad but operating locally. They are recorded in the current account of the balance of payments.

[18] For the case of Mexico, as will be discussed in Chapter 3, Section 3.6.3, the Bank of Mexico uses a particular methodology to distinguish remittances and family remittances among all the different amounts of money entering the country.

Migrant transfers refer to the net worth of migrants who move from one country to another and stay for more than one year or become a permanent resident. They are recorded in the capital account of the balance of payments.

The difference between these two last definitions is the time the migrant stays abroad and the account in which they are registered in the balance of payments. While **compensation of employees** includes the income of migrants who have lived in the host country for less than a year and that is registered in the current account, **migrants' transfers** are remittances from migrants who are expected to remain in the host country for more than a year, and these transfers are registered in the capital account.

In addition, the term remittances includes not only individual transfers but also collective remittances (which generally come from communal organizations, also known as Home Town Associations). According to Goldring (2004), family remittances are those made among family members; they are private transfers and are mainly used for current expenses to improve education level, social security and health. Collective remittances, while rare, are sent mainly to improve social capital in the community.

The remittances from CSAWP used in this study fall into the categorization made by the Bank of Mexico regarding "family remittances" sent by temporary migrants working in Canada.

2.6.1.1 World remittance data and the flow to developing countries

By 2006, total worldwide flows of remittances were US$268 billion (World Bank, 2006c). This amount covers only transfers that occur through official channels. Estimates suggest that unrecorded flows through informal channels may add 50 percent or more to recorded flows (World Bank, 2006c). Since remittances often add up to as much as

foreign direct investment (FDI) and are less volatile than other sources of foreign exchange earnings, they could represent a viable way to develop critical areas in rural communities in developing countries.

By 2006, remittance flows to developing countries represented about 75 percent of the world total; from that, Latin American countries captured almost 27 percent (World Bank, 2006c) (*Table 2.5*). From 2000 to 2006, total remittance flows doubled. Some of the reasons behind this trend include the increased scrutiny[19] of monetary flows since the September 11, 2001 terrorist attacks on the US, the lowering of the cost of sending remittances, expanding networks in the remittances industry and growth in migrant income. For the case of Latin America, remittances increased 165 percent between 2000 and 2006, showing a particularly strong dynamic in most recent years.

Table 2.5 Global flows of international migrant remittances (US$ billion)

Inflows	2000	2001	2002	2003	2004	2005	2006
World	132	147	170	205	230	257	268
All developing countries	85	96	117	145	163	188	199
Latin America	20	24	28	35	41	48	53

Source: World Bank, 2006c

Considering the number of immigrants in the US – up to 2005 the US had received a little more than 38 million immigrants – it is not surprising that this is the most important remittance-sending country in the world, with total remittances of almost US$43 billion (*Figure 2.3*). Using simple math, it can be argued that in 2005 each migrant in the US sent on average approximately US$1,000 to his or her place of origin.[20] Most of the top 10 remittances-sending countries are OECD members, as shown in *Figure 2.3*, which means that most immigrants prefer to migrate to more developed countries. Only three of

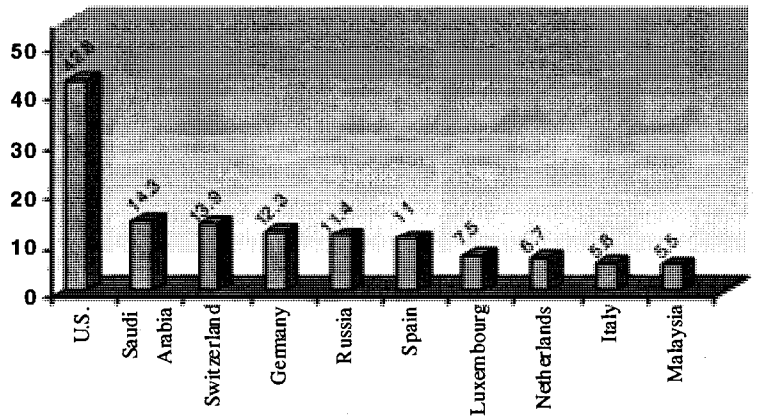
[19] By scrutiny I mean the carefulness that the Bank of Mexico now has registering these flows along with the easiness to register them because of the electronic bank migrants mainly use for sending the money home.

[20] By 2005, the US had registered remittances of almost US$43 billion.

the top 10 remittance-sending countries are not in the OECD, namely Saudi Arabia, Russia and Malaysia.

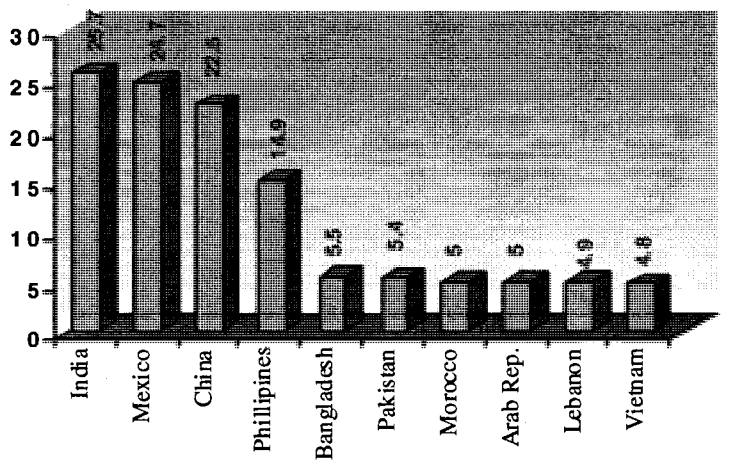
According to the World Bank, Mexico occupies the second place in the top 10 remittance-receiving countries, as can be seen in *Figure 2.4*. This situation can be explained by the significant number of Mexican migrants (both legal and illegal) in the United States and the well-built migration corridor between the two countries.

Figure 2.3 Top 10 remittance-sending countries, 2005 (US$ billion)



Source: World Bank, Migration and Remittances Factbook, 2006

Figure 2.4 Top 10 remittance-receiving developing countries, 2006 (US$ billion)



Source: World Bank, Migration and Remittances Factbook, 2006

2.6.2 Motivations to remit and gender differences

Two theoretical approaches dominate the literature on migrant-to-household remittances. On one hand, migrants can be seen as acting altruistically, sending money and other forms of support to increase the welfare of family members. On the other hand, migrants can send remittances because they have entered into a contractual arrangement with non-migrant members of their families (Massey and Basem, 1992).

Altruistic theories of remittances (Agarwal and Horowitz, 2002) argue that members of households act to improve the welfare of every member of their family. This does not imply that individual family members are not self-interested but that their behaviour is a response to the needs of other household members.[21] Making the decision to send remittances depends on a variety of factors in the host country as well as in the country of origin. These factors include family/community socioeconomic characteristics, endowments such as land and education (both of the migrant and the family) and whether other members of the family have employment. In addition, if the migrant keeps strong ties with the family left behind (mainly children) he or she tends both to send more money and to send it more frequently. For example, single mothers send as much as they can to their parents in order to help their children in their place of origin (Massey and Basem, 1992; Agarwal and Horowitz, 2002).

Contractual theory argues that remittances represent the outcome of an implicit agreement between the migrant and the household (Lucas and Stark, 1985). There are two main components of this contract: (1) repayment or prepayment by the migrant for support from the household; and (2) contemporaneous coinsurance. First, a potential

[21] For economists, this approach to altruism is formalized by including the utility of the relevant others in one's own utility function.

migrant and other members of her or his household may engage in an intertemporal contract. This intertemporal contract may also include the future transfer of land (or other property) through inheritance. Whereas Hoddinott (1994) considered land to be a tool that self-interested parents use to ensure remittances from self-interested sons, Lucas and Stark (1985) considered it to be simply one more aspect of the intertemporal contract between migrants and households. The migrant supports the other members of the household in anticipation of future repayment through the bequest of land when the parents are no longer able to farm the land or when they die (Hoddinott, 1994).

On the other hand, it is seen that, in most societies, women send greater amounts of money income from abroad than do men (Chant, 1992; Curran and Rivero-Fuentes, 2003), although this depends on a diversity of factors, including whether the migrant still has family ties in the place of origin. For example, a woman who has left her children behind will send much higher remittances than women without children to take care of and/or parents to support. Religion is also an important factor: it is found that women have stronger attachments to their faith than men do, and therefore when a religious festival takes place in their place of origin, women send money to support it (Curran and Rivero-Fuentes, 1995).

2.6.3 Remittance flows and their economic impacts

In one way or other, remittances have social and economic impacts, not only in the family economy but also in the community and in the country. The literature on the impact of remittances in regional development documents that those areas that receive collective remittances are generally better off than those that do not. Even those areas that receive individual remittances are better off than others that do not have a significant

number of remittance senders (Cohen and Rodriguez, 2005; Sorensen *et al.*, 2003; Zarate-Hoyos, 2004; Unger, 2005; among others).

Since remittances form a significant portion of the income of the receiving households, it becomes important to study how these households spend these remittances. This could be very important for small economies that receive a large amount of remittances from abroad. As far as internal migration is concerned, remittances from urban to rural areas in a country can greatly affect the pace of rural development and change the distribution of income in the economy.

To answer these questions, some authors have put forward theoretical models to analyse the effect of migration and remittances on the countries sending migrants. Rivera-Batiz (1986) developed a model of a source country with an increasing production of traded and non-traded goods and found that remittances increased production even more. In addition, migration turns income distribution in favour of labour and against capital, and the net welfare of non-migrants turns out to be positive. In an earlier study, however, Rivera-Batiz (1986) concluded that emigration reduces the welfare of non-migrants, although remittances are not included in the model. Djajic (1986) extended the later Rivera-Batiz model – including remittances – and concluded that, if the remittance flow was above a certain critical level, it could increase the welfare of non-migrants. Kirwan and Holden (1986) use a Heckscher-Ohlin model to conclude that welfare of non-migrants is dependent on the magnitude of the remittances.

An important aspect of migration in addition to effects of remittances on income distribution is the impact directly on receiving households. It is crucial to understand how these households spend the remittances that they receive and in particular whether they

invest them. Rempel and Lobdell (1978) point out the fact that most remittances are received by parents and the elderly and hence are used mainly for consumption, education of younger siblings and housing. Glytsos (1993) found that, in the case of the Greek economy, approximately 62 percent of remittances were spent on consumption and 22 percent on housing. In contrast, Adams (1991) found that remittance receivers in Egypt do not "fritter them away" on personal consumption and instead show a higher propensity to invest. This result is supported by Mahmud and Osmani (1980), who found evidence that remittance receivers in Bangladesh have a higher propensity to save than do non-receivers. Oberai and Singh's 1980 study on India found that households typically used remittances for productive investments. Malik and Sarwar (1993) reached a similar conclusion, finding that the marginal spending propensity of households receiving remittances was less than that of households not receiving remittances.

Taylor (1992) conducted a study in Mexico that supports the hypothesis that migrant remittances have both indirect short-term effects and long-term asset accumulation effects on the level and distribution of household farm incomes. The findings also suggest that, where credit and insurance markets are missing or are imperfect, migrant remittances may promote the growth of non-remittance incomes by enabling households to overcome liquidity and risk constraints. Remittances also compensate for the lack of working capital in the case for small African farmers (Waters, 1973).

2.6.4 Remittance uses linking farm and non-farm sectors

Regarding the uses of remittances in the household economy and in rural communities in general, empirical based conclusions are diverse. On the one hand, some authors conclude that remittances are used only for daily consumption with no spillover effects

(Glytsos, 1993; Rempel and Lobdell, 1978; Reichert, 1981; Rubenstein, 1983, 1982; Canales, 2006; Weist, 1984 as quoted by Conway and Cohen, 1998). On the other hand, other researchers argue that remittances can have spillover effects into extended families and the local economy (Sander, 2003; Durand, Parrado and Massey, 1996 for Mexican migration to United States; Taylor and Yunez-Naude, 1999; De la Mora, 2004; Basok, 2003; Wiggins *et al.*, 2000; Verduzco, 2000 for the case Mexican migration to Canada). And, finally, a third group of researchers conclude that recipients either keep cash, begin savings accounts, or invest their remittances in land purchases and/or development, including small-scale enterprises and small farming operations (Conway and Glesne, 1986).

Thus, remittances, like any other money, can be used productively or not; this will depend on a variety of social, economical, political and cultural factors. Those who are well endowed (material and culturally) might consider investing remittances in some form of profitable business, while those who are not well endowed may have no opportunity in the short run to invest and will spend the money on daily consumption. However, there is a third group of people who, while not investing in the short run, try to save part of their remittances for future investments.

Nevertheless, channelling remittances into local activities plays the role of linking farm and non-farm sectors, through both consumption and investment. Remittances earned by performing off-farm activities are used both to buy non-farm goods and enhance agricultural production. In this sense remittances link farm and non-farm sectors of the economy through production, consumption and investment channels (Durand, Parrado and Massey, 1996).

2.7 Summary

The farm sector has undergone significant transformations as production shifts from traditional to more modern processes. At the same time, non-farm and off-farm sectors have emerged as a complementary activity in rural areas. In the majority of cases, the linkages between the on-farm and non-farm sectors involve a one-way flow of resources from farm to non-farm, although there is bi-directional causation between these two sectors linked by remittances. Remittances imply in one way or another the physical movement of people – migration – which is at the same time one of the faces of globalization that characterizes the current economic and spatial analysis.

Migration cannot be explained by a single theory but requires a combination of arguments. In addition, migration decisions may not be individual decisions but take place within a larger social unit – the household. However, the main reason to migrate to developed areas or countries is evidently based on economic motives; lack of local employment opportunities pushes people outside the community. An integrative theory should combine different points of view, taking into account family and community as well as traditional human capital variables that shape migration decisions.

As one of the benefits of migration, remittances not only play an important role in improving the standard of living of the remittance receiver, but can help the economic and social development of the community. Even spending remittances in daily consumption creates spillover effects that reach the entire community and the surrounding communities in rural areas. Investing remittances in assets could assure the migrant's own future as well as the future of the migrant's family. Whether remittances are spent productively or not depends on a number of factors and situations.

Chapter 3

The Mexican Rural Economy, Migration and Remittances

3.1 Introduction

Around the middle of the 1960s, the crisis in the agricultural sector in Mexico and other developing countries became substantial (Yunez-Naude, 1992; Castillo, 2000). This was an important factor pushing rural Mexicans to undertake off-farm and non-farm activities inside the country and/or abroad. The two major factors that contributed to this crisis were: 1) industrialization and 2) economic liberalization processes.

The purpose of this chapter is to describe the general background of the Mexican economy, particularly of the agricultural sector, the changes it has experienced and its significant shrinkage during the country's industrialization process (1940-80s) as well as the more recent context under contemporary globalization. These changes help explain why Mexican people from rural communities have chosen to participate in off-farm activities, particularly abroad, and how Mexican remittances have become a significant source of income. International migration from Mexico was frequently synonymous with migration to the US, which is described in this chapter. However, in the 1970s a Canadian migration alternative opened to Mexicans, particularly to farm workers, through Canada's Seasonal Agricultural Workers Program (CSAWP), which will be analysed in more depth in Chapter 5.

3.2 The Mexican agricultural sector

The cultural, social and political significance of agriculture and land tenure in Mexican society can be traced back to the agrarian roots of the Mexican Revolution, which lasted until 1917, and to the rapid and extensive economic reform pursued since the 1982 debt

crisis that culminated with Mexico's entry in 1994 into the North American Free Trade Agreement (NAFTA). Under NAFTA, Mexico's rural sector came into direct competition with US agro-industrial producers. The last remaining barriers to trade were eliminated on January 1, 2008.

3.2.1 The agricultural sector: support for the Import Substitution Industrialization (ISI) process, 1940-1980[22]

For almost 25 years since the 1930s, Mexican agriculture fuelled industrialization and generated sufficient food at low prices for the urban population; while the Mexican population grew at average rate of 2.2 percent annually from 1930 to 1946, the agricultural sector grew 3.5 percent annually. Moreover, between 1946 and 1966, the rate of total population increase was 3.3 percent annually, while the population in the agriculture grew 6.1 percent on average (Rivera, 1999).

Beginning in the 1940s, the Mexican government launched a development strategy that followed the Import Substitution Industrialization (ISI) model, based on endorsement from the agricultural sector. This process lasted more than 40 years, supported by state credit programs, public investment in irrigation and expansion of the amount of agricultural land under cultivation. Agricultural production grew to such a degree that Mexico was self-sufficient in basic foods by the early 1960s; commercial income from maize and bean exports was used to finance the process of industrialization. This process was associated with a shift in social structure. *Table 3.1* shows that, during the period 1940-1970 which is termed the Mexican "economic miracle," the proportion of the

[22] Before the ISI process, during Spanish colonization and even during 19th century, landholding was concentrated in a few hands, while a significant proportion of the rural population, dedicated to agriculture, had only small plots. This was the result of a worldwide capitalist economic model in the last decades of the 19th century that convinced Mexico to adopt a regime of accumulation based on external demand for minerals and agricultural products.

population employed in the agricultural sector fell from 65 to 38 percent, while the proportion of the population employed in the secondary and tertiary sectors grew significantly. The agricultural GDP share fell drastically during this period and continued this tendency in the decades that followed.

Table 3.1 Mexico: Sectoral share of GDP and employment 1940-1980

	1940	1950	1960	1970	1980
Share of Real GDP (%)					
Agriculture	21	20	16	12	8
Industry	24	27	29	34	37
Services	55	56	55	54	54
Share of Employment (%)					
Agriculture	65	58	54	38	32
Industry	16	16	19	23	26
Services	19	26	27	39	42

Source: INEGI, 2002

Mexico's industrialization program involved government subsidies and high tariff barriers to protect local industries against foreign competition. At the same time, prices of basic foods were fixed just above the costs of production in order to keep wage costs of the industrial labour force as low as possible. This indirect support to the industrial sector affected mainly the *ejido* sector, which was most strongly oriented to the production of basic foods. The polarization of the agricultural sector into an export-oriented sub-sector and a more subsistence-focused *ejido* sub-sector was thus further cemented; in particular, government programs were focused on large, irrigated farms, reducing the scope for agricultural intensification in the *ejidos* (Heath, 1992). The granting of public credit to *ejidos* became an instrument for ensuring their simple survival, without any prospect of the loans ever being paid back or serving to enhance *ejido* productivity.[23]

[23] It must be noted, however, that it was easier for private agricultural holdings to obtain loans than for the *ejidos*. Furthermore, through its rural development bank (BANRURAL), the state exercised a stronger influence upon the choice of crops and technologies of *ejidos*. In many cases the *ejidatarios* received their seed, fertilizer and pesticides directly from the development bank, and often with some delay (Heath, 1992, p. 697).

Around the middle of the 1960s, the crisis in the agricultural sector became clear. The emaciation of the *ejido* sector led to a drop in the average growth rate of agricultural production and an increasing deterioration of the supply of basic foods, comprising maize, beans and wheat (Dunn, 2000).[24] This situation led to an increasing need to import agricultural products in order to ensure food supply.

3.2.2 The agricultural sector: structural economic change, 1980-2002

In the middle of the 1980s, under the presidencies of de la Madrid (1982–88) and Salinas de Gortari (1988–94), political forces demanded a switch to neo-liberal economic policies. Their aim was to overcome the stagnation in Mexico's economic development by means of deregulating and liberalizing the domestic market, privatizing state-owned companies and opening the economy to foreign direct investment. Agricultural policy was to play a particular role in this policy focus. The core elements of the modern wave of agricultural reform are the voluntary conversion of *ejido* parcels to private property, the termination of land redistribution,[25] the removal of agricultural price controls and the strengthening of the financial capacity of small private farmers and *ejidatarios* (Dunn, 2000).

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[24] The annual growth rate of the GDP of the agricultural sector fell from 3.7 percent in the years 1960 and 1970 to 3.4 percent in the period between 1970 and 1980 and further to 1.2 percent in the period from 1980 to 1988 (Dunn, 2000).

[25] A new way to govern was born with de la Madrid (1982-1988), who aspired to put Mexico at the same economic level as developed nations. This implementation of neo-liberalism was continued by Salinas de Gortari (1988-1994), reaching its peak in 1994. One of the characteristics of neo-liberalism was the elimination of the *ejido* structure through reform to the 27th Constitutional article. The main objective of this process within the neo-liberal paradigm was to promote both efficiency and equity through well-functioning land rental and sales markets intended to transfer land from less to more efficient producers. Now land can be rented, sold and taxed. Full transferability of land (*dominio pleno*) implies the dissolution of the *ejido* and requires a two-thirds majority vote of the *ejido* assembly (Deere and León, 2001). Additional signals of the intention to eliminate the *ejido* included the disappearance of CONASUPO, among other state enterprises, and the fact that small farmers have no marketing support.

In this way, during the 1980s and 1990s the Mexican economic development model was transformed by the State from import substitution to a policy of outward orientation. For the agricultural sector, this transformation has included the elimination or reduction of producer price supports of what historically were considered basic crops (barley, beans, maize, rice, sorghum, wheat and five oleaginous crops) and the abolition of import licenses for these products. Under NAFTA agreements, tariffs were eliminated and tariff rate quotas (TRQs) established for three crops that the Salinas government considered sensitive: barley, beans and maize (Yunez-Naude, 2001). In addition, CONASUPO (Mexico's National Basic Foods Company) was abolished, input, credit and insurance subsidies were reduced or eliminated and the land property rights of the *ejidal* were liberalized.

The expected impact of these reforms on the Mexican economy, particularly on the agricultural sector and on emigration flows of Mexicans to the US, has been a matter of deep controversy since the beginning of NAFTA negotiations. On the one hand, the official position (especially held before the crisis of 1995) was that the reforms, combined with NAFTA membership, would result in macroeconomic stability and high, sustained growth rates. Foreign direct investment (FDI), mainly directed at the urban manufacturing and service sectors, was expected to be one of the leading forces sustaining this growth. According to this position, both phenomena would lead to a reduction of the supply-push forces that promote emigration to the US. On the other hand, critics of liberalization argued that the negative impacts of the reforms and NAFTA membership, such as the trend towards the disappearance of staple production in Mexico, would outweigh the gains. Regardless, during the beginning of the 1990s, everybody –

from the government to scholars and the critics of liberalization and NAFTA – predicted that policy reforms would promote rural out-migration in the short[26] and medium run (Calva *et al.*, 1999). Thus, the share of agricultural employment fell from 65 to 20.2 percent over the period 1940 to 2002, a drastic decline in comparison with the industry and services sectors, which increased to 25.1 and 53.8 percent respectively (*Tables 3.1* and *3.2*).

Table 3.2 Mexico: Sectoral share of GDP and employment, 1980-2002

	1980	1990	2000	2002
Share of Real GDP (%)				
Agriculture	8.2	7.7	5.0	5.1
Mining	3.2	3.6	1.2	1.2
Manufacturing	22.1	22.8	19.8	18.8
Construction	6.4	5.1	3.9	3.8
Services	60.1	60.7	63.1	64.4
Share of Employment (%)				
Agriculture	27.9	25.4	20.0	20.2
Mining	1.0	1.2	0.4	0.4
Manufacturing	12.0	11.1	12.8	12.6
Construction	9.5	10.7	12.2	12.5
Services	49.0	51.0	54.1	53.8

Source: Loría, 2003 p. 77. Note: The sectoral GDPs do not add up to 100 percent since neither the corresponding bank services nor output taxes are included. Electric energy is not considered since its GDP and employment share fluctuates between one and two percent.

The de-capitalization[27] of the primary sector has progressively impoverished masses of rural Mexicans, forcing them to migrate into cities to seek jobs in non-agricultural activities, such as construction and the service sectors. The off-farm economy, therefore, has become increasingly important for rural households as a source of livelihood. Looking at the 1940-2002 period as a whole, the share of agricultural GDP in the total GDP shrunk from 20 percent to only five percent. Nowadays, people in rural

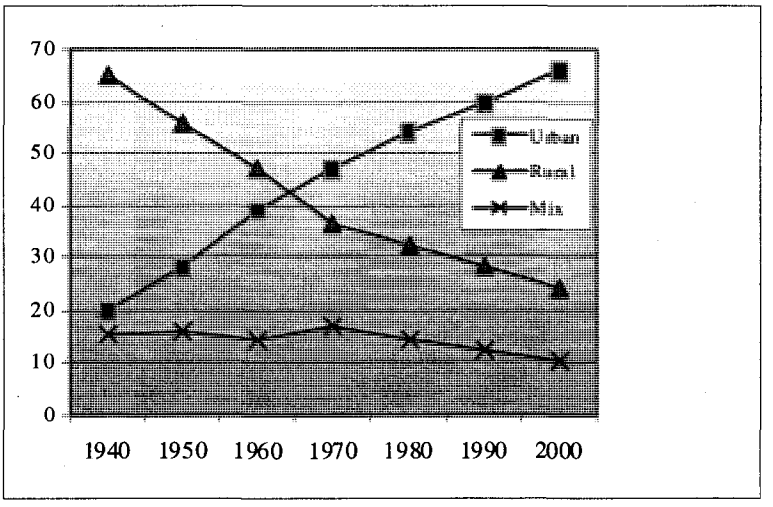
[26] According to CONAPO (2003b) estimations, approximately 400,000 people emigrated abroad annually in recent years, and about the same number moved into inner cities in Mexico.

[27] De-capitalization is defined as a process of supplying any economic sector with so little capital that operation is hindered for the secondary sector receives most of public investments (Random House Unabridged Dictionary).

communities are trying to diversify their income portfolio and, therefore, are undertaking non-farm activities.

Because of the transformation of the agricultural sector and agricultural economy, the composition of Mexico's population has changed drastically from eminently rural to predominantly urban. As can be observed in *Figure 3.1*, the urban population in 1940 represented 20 percent, while the rural population was 65 percent (the remaining 15 percent corresponded was mixed). By 2000, this relationship was inverted, with the urban population representing 66 percent, while the rural population was only 24 percent (while 10 percent was mixed).

Figure 3.1 Distribution of urban, rural and mixed population, 1940-2000 (%)



Source: CONAPO, 2003b

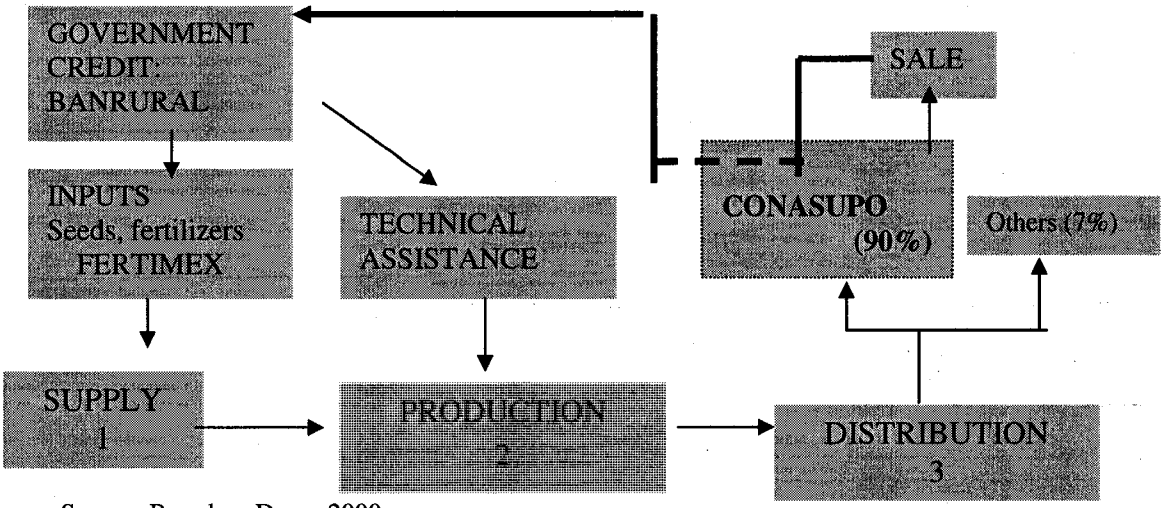
Based on this situation, the government has implemented a number of social programs in order to help farmers, particularly small producers who were seen to be the most affected by the liberalization process. These are described below.

3.2.3 Public social programs for the agricultural sector

During the 1980s, the integral agricultural development model, depicted in *Figure 3.2*, was abandoned due to the liberal economic policy pursued in Mexico. The government

had participated in three phases of the food chain: supply, production and distribution. In the first stage, the government participated through FERTIMEX (Mexican Fertilizers), which supplied inputs (like seeds and fertilizers), and through BANRURAL, which provided credit to farmers. In the second stage, professionals hired by the government provided technical assistance in the production process. Finally, distribution was guaranteed by CONASUPO (this was later eliminated), which used to buy about 90 percent of the production. After selling this production, CONASUPO injected capital to start the cycle again.

Figure 3.2 Mexico: Integral agricultural development model



Source: Based on Dunn, 2000.

The elimination of CONASUPO's price support mechanism and increased foreign competition resulting from trade liberalization under NAFTA created some cutting off among some segments of the peasantry or *campesinado*. In order to moderate such distortions, the Mexican government established several policy instruments intended to assist agricultural producers in the transition to liberalized commodity prices and increased competition. The two most important of these programs were PROCAMPO (Program of Direct Payments to the Countryside) and Alliance for the Countryside. The

main objective of PROCAMPO was to compensate agricultural producers for the anticipated decline in domestic crop prices resulting from the elimination of CONASUPO's price supports system and from the process of integrating the Mexican agricultural sector into NAFTA. The primary purpose of Alliance for the Countryside was to increase agricultural productivity and competitiveness through investments focussing on farmers with the potential to diversify their production away from basic grains (Yunez-Naude, 2001).

3.3 Evolution of non-farm activities in Mexico

Evidence shows that the Mexican agricultural sector has not had sufficient employment demand to occupy the growing labour supply since the agricultural crisis of 1960. Therefore, the labour market has experienced disequilibria affecting most rural inhabitants and small farmers in rural Mexico, and non-farm activities have emerged as an important income source alternative.

Mexico's non-agricultural population increased 412 percent over forty years (1961-2002), while the agricultural population only increased 5.77 percent over the same period (*Table 3.3*) (FAO, 2004). FAO has noted some interesting features about the Mexican agricultural sector and countryside. First, the non-agricultural population followed a steady growth trajectory over the entire period. Second, the agricultural population did not follow the same pattern of growth during the same period. It increased until the 1980s (specifically 1982, the year when the Mexican economy experienced a structural change from an internal to an external market). Subsequently it started to decrease at less than one percent per year until 1998 and more than one percent yearly from 1999 until now. Third, FAO estimations indicate that, by 2010, Mexico's agricultural population will represent only 18 percent of the total population. This means that the majority of

agricultural production will rest in only a few hands. Fourth, there are concerns about whether small farmers will abandon their own farms in favour of working for a medium/large farmer or whether they will stay in subsistence agriculture.

Table 3.3 Mexico: Agricultural and non-agricultural populations, 1961-2010 (Thousands of people)

	1961	1970	1980	1990	2000	2001	2002	2010 e/
Total	38,102	50,596	67,569	83,225	98,933	100,456	101,965	113,320
Agr. Pop	21,471	23,695	26,438	25,233	23,215	22,967	22,709	20,312
Non-Agr. Pop.	15,475	26,901	41,130	57,992	75,718	77,489	79,256	93,008

Source: FAO, 2004. e/ estimations by FAO

Approximately 73 percent of *ejidatarios* derive more than half their income from off-farm activities. De Janvry and Sadoulet (2000) state that:

> *"Off-farm sources of income serve as substitutes for farm incomes derived from access to land. Thus, in Mexico, the share of total household income derived off-farm falls from 86% on small farms to 40% on larger farms. Interestingly, control over the assets needed to derive income from off-farm activities rises with access to land. As a result, those with larger farms are able to derive larger incomes from off-farm activities, even though off-farm incomes rise with farm size less than do farm incomes. In Mexico, off-farm incomes yield 4,242 pesos on small farms and 8,726 pesos on large farms." (p. 396)*

In a similar vein, Wiggins *et al.* (2000), based on a survey conducted in rural Mexican communities, write:

> *"In Mexico, surveys of 187 households in four rural communities during 1997 revealed a large non-farm sector. All told, the median proportion of household incomes coming directly from agriculture was just 14%, despite more than 80% of the households having access to land. More than half of the households had a waged job, and almost one in five had salaried work. These jobs included agricultural, labouring, artisan crafts, teaching, domestic service, construction work, trading carpentry, soldiers and police and drivers." (p. 5)*

Using data from a nationwide survey of the *ejido* sector conducted in 1997, De Janvry and Sadoulet (2001) show that: "households have on average 1.04 members engaging in off-farm activities as their primary or secondary occupation. Of these members, 40% engage in non-agricultural wage employment and 37% in self-employment, while agricultural wage employment only occupies 25%." (p. 471). *Table*

3.4 reproduces the authors' results showing that total farm income and the share of income derived from farm activities increases with farm size. On the other hand, the share of total household's income derived from off-farm activities falls with farm size (De Janvry and Sadoulet, 2001).

Table 3.4 Sources of income in the Mexican *ejido* by farm size, 1997

Farm size in rain-fed equivalent hectares	All	<2	2-5	5-10	10-18	≥18
Number of households	928	131	244	239	179	135
Total income in pesos	25,953	12,474	17,314	28,368	30,564	44,255
Total farm income	11,697	2,855	4,869	11,856	15,377	27,454
Total off-farm income	14,256	9,619	12,444	16,512	15,187	16,801
Wages	6,397	5,022	6,393	8,620	5,568	4,898
Agricultural wages	1,235	1,245	1,300	1,197	1,732	515
Non-agricultural wages	5,162	3,777	5,094	7,424	3,836	4,383
Self-employment	2,442	2,138	2,464	1,312	3,707	3,020
Remittances	1,683	325	942	2,523	1,845	2,636
Other	3,735	2,133	2,644	4,057	4,067	6,247
Percentage of total income						
Total farm income (%)	45.1	22.9	28.1	41.8	50.3	62.0
Total off-farm income (%)	54.9	77.1	71.9	58.2	49.7	38.0
Wages (%)	24.6	40.3	36.9	30.4	18.2	11.1
Agricultural wages (%)	4.8	10.0	7.5	4.2	5.7	1.2
Non-agricultural wages (%)	19.9	30.3	29.4	26.2	12.5	9.9
Self-employment (%)	9.4	17.1	14.2	4.6	12.1	6.8
Remittances (%)	6.5	2.6	5.4	8.9	6.0	6.0
Other (%)	14.4	17.1	15.3	14.3	13.3	14.1

Source: De Janvry and Sadoulet, 2001, p. 469.

It is interesting to note that, unlike other components of off-farm income that fall with farm size, remittances flows do not vary, they represent around six percent of the total income. Hence, De Janvry and Sadoulet (2000) found that migration earnings were not related with the size of the land that rural people held in their communities. Migration and remittances therefore followed a different pattern in the off-farm income model. Chapter 6 analyses the motivations to participate in Canada's Seasonal Agricultural Workers Program (CSAWP) as one case of off-farm jobs.

3.4 Mexican migration

In the case of international migration, the predominant flow is from rural Mexico to rural areas in the US – nearly the entire US farm workforce from Mexico comes from rural

areas. When the Bracero program was operating over the period 1942-1964 (see below), migration was mainly temporary. When this program disappeared, international migration started to become mainly undocumented (illegal) but remained temporary, since Mexican migrants were not able to stay abroad for long periods or bring their families with them because of difficulties crossing the border. In 1986, the Immigration Reform and Control Act (IRCA) regularized the illegal residency of 2.3 million Mexicans. This was key in shifting migration from temporary to permanent and in substantially increasing the Mexican population in the US, since migrants were able to have their families legally with them.

3.4.1 When did Mexicans start to migrate?

Mexican migration has a long history, beginning in the nineteenth century. It contributed substantially to the construction of the US railroad system, the development of agriculture, manufacturing and, later, to the urban service economy. Until the 1970s, it followed a mainly temporary migration pattern in which most migrants originated from rural areas of the centre-west and north of Mexico, went to work in agriculture in the southwest of the United States and returned home during slack seasons in the US. A proportion of these migrants stayed permanently in the US, either in rural areas or in cities, such as Los Angeles. At times Mexican migrants were forcibly repatriated, as in the 1930s, or in the so-called "Operation Wet-Back" of the 1950s (Roberts *et al.*, 1999).

From the 1970s onwards, Mexican migration appears to have changed in major ways. Migrants have increasingly moved to urban destinations in the United States and increasingly leave from urban rather than rural parts of Mexico (Lozano, 2003). As stated above, the family reunification provisions of the IRCA legislation of 1986 contributed to

this increasing settlement, since legalized migrants could now sponsor family members to join them in the US. There is, however, considerable continuity over time in Mexican migration, with what Massey (1987) calls "cumulative causation" explaining many of the changes in migration patterns. Thus, the migrant networks tying villages and small towns in Mexico to destinations in the US facilitate the migration of women, young single adults and even urban migrants, who use ties from their villages of origin to migrate to the US. Most migrants to the US are between 15 and 35 years old (Rionda, 2003).

3.4.2 Why did Mexicans start to migrate?

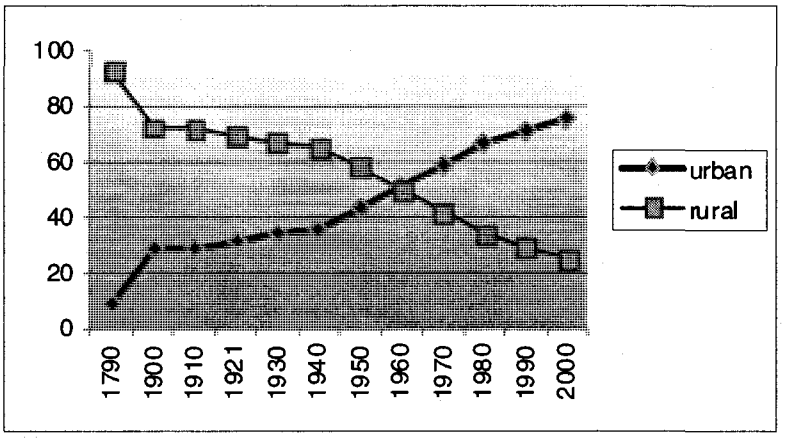
Most studies have found that motivations to migrate are focussed on three main reasons: income and employment opportunities, individuals' safety needs to ensure the migrant welfare such as job certainty, health services and education opportunities and networks that migrants have built in the destination place. For Mexicans, migration to the US represents a "hope for a better life." Unlike other countries, Mexico shares an extensive land border with the US that is difficult to control effectively, creating an "easy" way to enter. There are a number of factors affecting Mexican immigration.

Firstly, Mexico's population grew rapidly after 1940, when improved living standards and preventive health-care measures produced a dramatic increase in longevity and a decrease in infant mortality. After President Echeverría took office in 1970, he argued that rapid population growth would make it difficult for the government to generate positive rates of economic growth per capita. The Mexican economy had not been creating enough new jobs to provide its entire people with employment. By the time of the 1990 census, the nation's population had grown to 81,249,645. In 2003, Mexico had an estimated population of 104,907,991 with an average density of 53 people per

square kilometre. Because of natural population growth and the lack of job creation, there was significant movement of people from areas without job opportunities to areas where there was more economic development.

Because of the combination of both push and pull factors, migration is likely to continue (Taylor, 1987; Massey *et al.,* 2002; Stark, 1991; Verduzco, 2000). *Figure 3.3* represents the urbanization process that Mexico has undergone starting more than a century ago. Nowadays Mexico's population is very urbanized, and the break point can be observed clearly during the industrialization process around the 1950s when the agricultural sector experienced an enormous transformation, together with the consequent impoverishment of rural populations. In 1960, the agricultural crisis forced rural people to migrate to urban areas, and now for every 100 people in cities, there are only 22 in rural areas.

Figure 3.3 Rural-urban populations in Mexico, 1790-2000 (percentages)



Source: CONAPO, 2003b

Based on a national survey of employment in 2002 (INEGI, 2002), one of the main motivations for Mexicans to migrate to the US is the lack of paid jobs in Mexico (*Table 3.5*). While Mexican migrants in US are mainly illegal (*Table 3.5*), a number do have

legal status. For a significant number of Mexican migrants, legal migration was made possible through temporary migrant worker programs, such as the Bracero program (1942-1964) and the H2A program (1986 to the present). These programs are described below.

Table 3.5 Motivations to migrate to the US according to remittance behaviour

Indicators	Migrants who DO NOT transfer money to Mexico	Migrants who DO transfer money to Mexico
Migrants to the US		
Cases	1,731	3,710
Weighted population	686,382	1,624, 996
Motive for migration to the US	100	100
Looking for job	65.7	87.3
Already had a job arranged	8.6	9.2
Joining family in the US	15.5	1.4
Other motive	10.2	2.1
Migrant status	100	100
Without documents	67.6	79.4
Tourist visa	14.2	5.2
Legal residency	7.1	5.8
Other	11.1	9.6

Source: Lozano, 2003: http://repositories.cdlib.org/usmex/lozano_fernando based on INEGI, 2003

On the other hand, the border separates two economies of sharply different levels of development. The US GDP per capita in 1996 was eight times greater than Mexico's, and the difference in real wages was of approximately the same order. By 2005, this difference has decreased slightly, with the US per capita GDP six times that in Mexico. Mexican migration reflects such wage differentials and the lack of job opportunities in Mexico (Escobar-Latapi, 1999; CONAPO, 1997; Canales, 2007; Roberts *et al.*, 1999; Yunez-Naude, 2001; Taylor, 1999; Nadal, 2000).

Mexico's migration relationship with the US – and its dependency on that relationship – is unquestionable. Geographically, Mexico is divided into 32 states and 2,438 municipalities. Only 92 municipalities have no migratory links with the US. This means that 96 percent of the municipalities in Mexico has some form of migration relationship (Foro Latinoamericano, 2007).

3.5 International Mexican migration to the US through guest worker programs

Migration of low-skill labour from Mexico to the US is a dominant aspect of general Mexico-US migration. The Mexican international migration experience through guest worker programs is not new: it started more than 60 years ago with the Bracero program, which lasted 22 years and allowed approximately five million people to work temporarily in the US agricultural sector. Two more programs permitting migration to the US – H2A and H2B – were implemented during the 90s, and temporary migration to Canada was made possible through CSWAP, which was first established in 1974 (see Chapter 5).

3.5.1 The Bracero program

This migratory model was based on having a labour force with the following characteristics: legal, male, rural and temporary. The main objective was to break with the old migratory pattern known as "indentured labour" (Durand *et al.*, 1996) controlled by contractor companies that supplied Mexican labourers to the US agriculture sector, mines, rail companies and industry.

The Bracero program was focused mainly on agricultural activities, and people participating in this program were allocated primarily to California, Washington, Oregon, Arkansas and Texas. The program was established in response to the scarcity of low-skilled labour in the US during World War II. During its 22 years, the program created 4.6 million contracts (Durand, 2006). This program ended in 1964 and was never renewed, despite efforts by the Mexican government to re-establish it. President Diaz-Ordaz tried very hard to reach an agreement with the US, but President Ford declined his petition, arguing that these kinds of programs proved that Mexican workers were not protected properly (García y Griego, 1998).

3.5.2 The H-2A and H-2B visa programs

The H-2A program was established in 1964 after the Bracero program ended, although Mexican workers were not accepted until the late 1980s. After the Immigration Reform and Control Act of 1986 (IRCA) was implemented, the visa program was subdivided, where H-2A focussed only on agriculture and the new H-2B program focussed on the service sector.

The H-2A temporary agricultural program was established to help agricultural employers (which could be companies, individual proprietorships, partnerships or corporations, or even an authorized agent such as an attorney or an association) who, after looking and failing to hire a US worker, would be eligible to bring non-immigrant foreign workers to the US to perform agricultural labour or services of a temporary or seasonal nature.

The H-2B non-immigrant visa program permits employers to hire foreign workers to enter the US and perform temporary non-agricultural work, which may be one-time, seasonal, peak load or intermittent. By 2005, 87,000 people were hired under this program; 75 percent were Mexicans (Meyers, 2006).

There are similarities between the H-2A program and CSAWP; both require employers to pay for transport and offer both lodging and a place where migrants can prepare their food (Durand, 2006). However, there is an important difference: the Mexican government has no influence under the H-2A program, while it controls a significant part of CSAWP. In the H-2A program, private recruitment companies (from Mexico and the US) manage everything, without the participation of the Mexican and the

US governments.[28] It is understandable that "managing a program of this size certainly is complicated and therefore it is easier to leave it in private hands and that the US contractors will take the initiative to manage the program. (Durand, 2006, p. 57)

According to Escobar-Latapi, (1999) the H-2A program is the subject of strong criticism as it violates human rights, particularly as:

> *"... recruitment agents have been known to charge inordinate amounts to workers applying for jobs in the programme. In 1997, Mexican government officials received reports stating that a middleman in San Antonio, Texas, earns 600,000 dollars per year through both formal and informal payments made to him by workers entering the programme. Apparently, middleman payments, plus other expenses deducted from their pay, lead workers in this programme to remit very small amounts to their families, which severely diminishes the welfare and development potential of their earnings." (Escobar-Latapi, 1999, p. 167)*

3.6 Previous studies on the impact of remittances

Before analyzing the impact of remittances in the Mexican economy, it is worthy to define what and how remittances are conceptualized. The Bank of Mexico applies certain criteria depending on the place the migrants work. It considers Mexican no-frontiersman with temporary residence abroad (even residence of less than a year) as residents of the economy where they work. In additional to this methodological consideration, there is the practical restriction that there is no information about the period time of residency in a foreign country, nor about the place where the migrant live abroad. In this sense, the generalized practical difficulty to correctly identify the place where the migrant workers reside was recognized not only by the Bank of Mexico but also by other international institutions like the Organization for Economic Cooperation and Development (OECD), the International Monetary Found (IMF) and others, and thus they suggested that the concepts of remittances and workers' income should be merged. There is still no decision

[28] The US government grants only temporary work permits to Mexican workers.

made, but the number of participants supporting the suggestion that the United Nations Organization (UNO) changes its manual to aggregate these two concepts into one is increasing.

The Bank of Mexico is the governmental institution that record remittances flow. Hence, it has its own definition on remittance flows and states that since workers' remittance flows are between persons with a family link (a characteristic pointed out in the IMF manual), they should be named "family remittances." Likewise, the Bank of Mexico recognizes that the remittances sent by people working outside the country (principally in the US) to residents in Mexico are independent of how long a migrant has lived abroad. This means that the Mexican statistics on family remittances include all resources sent either by Mexicans living permanently or temporarily in a foreign country (Bank of Mexico, 2005).

Reviewing past studies on the impacts of remittances on a number of factors in migrant-sending areas helps us to know how the migrants use and/or invest their remittances. Some authors found that remittances not only do not aid economic development but in fact reduce incipient economic growth and, furthermore, put a strain on human relationships between families with migrants and families without migrants. According to Adams (1991), remittances contribute to an inequality and therefore to an impoverishment of human relationships. Furthermore, Canales (2006, 2007) argues that remittances do not aid development since the per-capita amount of remittances is very low (roughly US$55) and therefore not enough to invest in productive activities, since most of the remittance money is spent on daily consumption.

Studies on the uses and effects of remittances in households that send migrants have found that migration earnings are spent overwhelmingly on current consumption, leaving little money for productive investment. According to these findings, the amount spent on family maintenance and health; the purchase, construction, or remodelling of homes; and the purchase of consumer goods range from 67 percent of total remittances (Dinerman, 1982 for the case of Michoacán) to 93 percent (Gonzales and Escobar, 1990 for the case of Jalisco).

Table 3.6 Remittances effects/uses in Mexico

Author(s)	Instrument/ technique	Effects noted
Cohen and Rodriguez, 2005	Ethnographic survey	Enhance income spent on daily consumption but also serve as business start-up funding and investment.
Reichert, 1981	Survey (Michoacan)	Create migrant "syndrome" (dependence) among the sending households
Yunez-Naude, 2001	Social accounting matrix	Create multiplier effects on: Δ HH production and consumption Δ Inputs demand, therefore Δ local production and hence Δ community income
Taylor, 2003	Survey	Δ Livestock production and Δ other local economic activities and ∴ Δ HH and community income Every dollar remitted to Mexico generates US$2.90 of growth in the domestic product and increases production by US$3.20
Taylor and Wyatt, 1996	Survey and regression	Relax liquidity constraints in poorest households in Michoacan
Massey *et al.*, 1987	Survey	Δ Modern inputs uses
Zarate-Hoyos, 2004	Survey,1989 (ENIGH)	Increase investment in transportation and housing compared to those who do not receive remittances

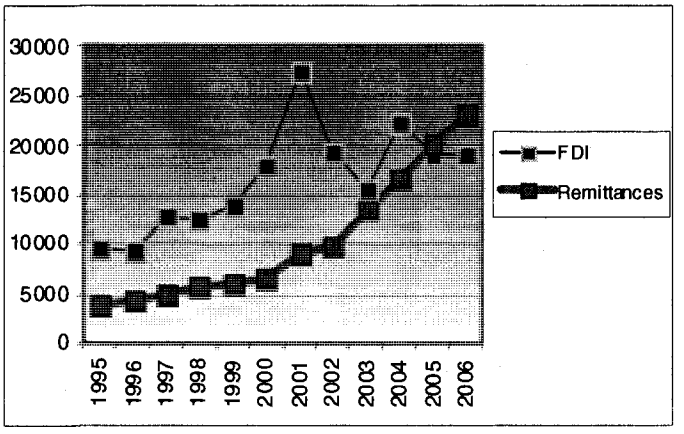
Source: Various authors.

The studies listed below are only a handful from an immense number related to the use and effects of remittances – mainly from the US – in Mexico. Most of the studies summarized in *Table 3.6* were conducted by the group of researchers who see remittances as a helpful tool to alleviate poverty and to serve as an alternative to diversify risks. These surveys focussed mainly on five migrant-sending states: Michoacan, Jalisco, Guanajuato, Oaxaca and Zacatecas.

3.7 The importance of remittances for the Mexican economy: A background

As expected, the US is the largest source of remittances to Mexico, accounting for 96 percent at US$19.6 billion by 2005. Table 3.7 shows the source of Mexican remittances by country in 2005. In recent years, remittances have emerged as a major source of external financing in developing countries. In the Mexican case, remittances are the second largest source of foreign exchange (after oil) and allow many low-income households to improve their standard of living (Lozano and Olivera, 2005; Lozano, 2003). Annual remittances to Mexico grew from US$6.5 billion in 2000 to US$20 billion in 2005. In comparison, foreign direct investment (FDI) grew from US$17.8 to US$18.8 billion over the same period (Figure 3.4), while oil exports grew from US$16.1 to US$31.9 billion (Table 3.8) (Bank of Mexico, 2006).

Figure 3.4 Mexican foreign direct investment and remittances, 1995-2006 (billion of US$)



Source: Banco de Mexico, 2007

Table 3.7 Mexican remittances by source country, 2005

Sender Country	Millions of US$
TOTAL	21,802
United States	19,600.0
Others (South)	1,768.0
Canada	89.3
Spain	87.4
Others (North)	86.5
Bolivia	23.7
Guatemala	23.0
Germany	16.9
Italy	15.6
France	13.3
United Kingdom	10.6
Others*	67.7

*Countries such as: Panama, Venezuela, Belize, Chile, Japan, Paraguay, Colombia, Netherlands, Sweden, El Salvador, Australia, Brazil, Honduras, Dominican Republic among others
Source: World Bank, 2006

Remittances in 2006, at about US$23 billion, were more than two times the value of tourism revenues (151 percent) and two thirds of oil exports (59 percent). If not for the steep rise of the price of oil after 2002, remittances would now exceed the value of oil exports; even at today's oil prices, remittances exceed Mexico's net exports of hydrocarbons.

Table 3.8 Importance of Mexican remittances in the economy, 1990-2004 (Shares)

					Exports				
Year	Remittances *	GDP	Total Exports	Total Imports	Agricultural	Extractive	Manufacturing	Oil	Tourism
1990	2.494	0.99	9.29	8.00	115.30	404.10	17.90	24.70	60.20
1991	2.658	0.86	6.23	5.30	112.00	485.90	8.40	32.65	61.30
1992	3.070	0.85	6.65	4.90	145.40	862.40	8.70	36.90	68.70
1993	3.333	0.82	6.42	5.10	133.10	1198.10	8.00	44.90	73.00
1994	3.694	1.26	6.07	4.70	137.90	1035.70	7.30	49.70	76.10
1995	3.673	1.53	4.62	5.10	91.40	673.90	5.50	43.60	78.30
1996	4.224	1.30	4.40	4.70	117.60	940.35	5.30	36.20	79.90
1997	4.864	1.52	4.40	4.40	127.10	1017.70	5.10	42.90	64.00
1998	5.627	1.67	4.79	4.50	142.35	1207.50	5.35	78.90	71.30
1999	5.893	1.70	4.21	4.37	144.89	1211.68	5.22	64.67	82.58
2000	6.280	1.74	3.78	3.60	147.30	1205.00	4.30	38.00	98.00
2001	8.895	1.53	5.60	5.28	200.05	2307.00	6.31	67.38	102.00
2002	9.814	1.51	6.10	5.82	232.88	2673.38	6.93	66.17	128.00
2003	13.396	2.09	8.13	7.58	266.03	2699.17	9.52	72.01	142.00
2004	16.613	2.43	8.83	8.44	292.30	1844.25	10.53	70.20	155.00
2005	20.035	2.61	9.35	9.03	333.46	1715.62	11.44	62.84	154.00
2006	23.054	2.74	9.22	9.00	336.42	1750.75	11.36	59.07	151.00
2007	23.979	2.60	9.26	8.92	NA	NA	NA	NA	NA

Source: Banxico (Bank of Mexico), 2007. * Billion of dollars

Table 3.8 show that remittances from abroad undoubtedly have important economic impacts in Mexico. Those impacts can be divided into two levels: the macroeconomic and the microeconomic.

3.7.1 Macroeconomic impacts of remittances

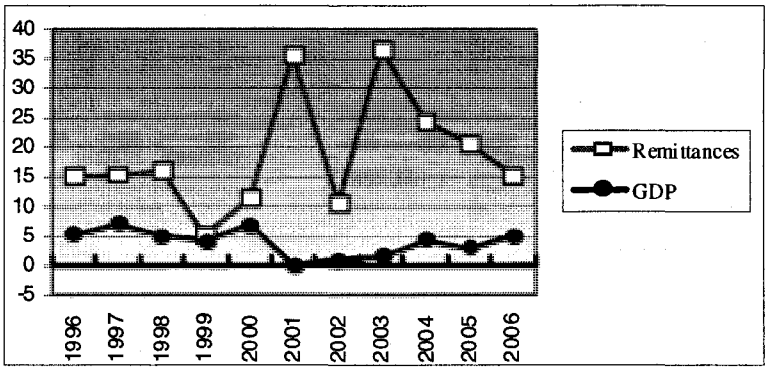
Remittances are a valuable contributor to the national economy in Mexico. According to data from the Bank of Mexico, by 2006 Mexico had received US$23 billion in remittances, which represents approximately nine percent of total exports and imports (*Table 3.8*). Income from remittances is up to 17 times higher than income from the extractive industries ((Bank of Mexico, 2007).

The following figures show how important the foreign-currency income from international migrants is for Mexico, allowing the country to deal with foreign disequilibria in the balance of payments. Hence, the macroeconomic impact of remittances can be clearly observed in the balance of payments, particularly in the current account balance (as can be observed in *Figure 3.6*).

a) Actual and future remittance flows are used by the Mexican government as a debt warranty to obtain loans from international finance institutions (Ratha, 2003).
b) Remittances increase internal demand, as there is more currency in the economy, allowing an increase in productive investment (Bank of Mexico, 2006).
c) Remittances are less volatile than other private capital flows such as FDI, as can be observed in *Figure 3.4*; FDI follows international economic trends, while the positive trend for remittances remains constant.
d) Remittances can help to counteract downturns in the economic cycle in the sense that, when the migrant-sending countries have an economic crisis, such as in 2001

when the annual rate of growth in Mexican GDP fell to -0.2 percent, remittances increased 35 percent (*Figure 3.5)* (Bank of Mexico, 2006).

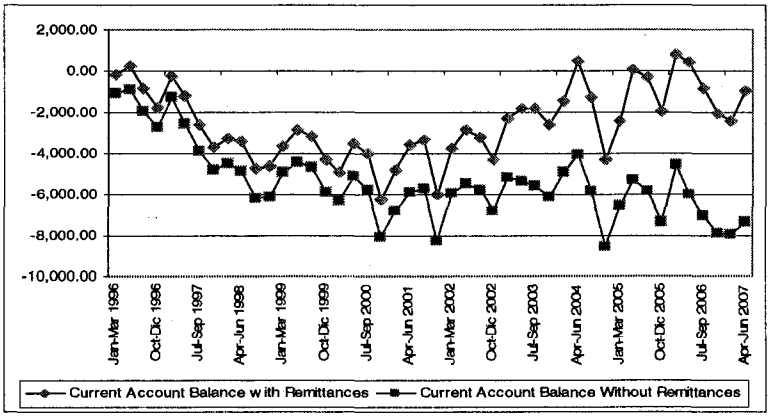
Figure 3.5 Mexican GDP and household remittances, 1996-2006 (Annual rates of growth)



Source: Bank of Mexico, 2007

e) Remittances can counteract the recurrent deficit in the current account since they enter as a positive resource flow and have no counterpart, thus absorbing the deficit created from other entries. For example, remittances can revert the deficit level of the current account, as they did in three different periods (April-June, 2004; April-June 2005 and January-June, 2007) (*Figure 3.6).*

Figure 3.6 Mexican remittances and the current account balance, 1996-2007 (US$ Millions)



Source: Bank of Mexico, 2007

3.7.2 Microeconomic impacts of remittances

Remittances reach the recipient directly, as they are sent from person to person (or, as Canales (2006) would say, from poor to poor) through money orders, bank transfers or even sending money via a trusted friend or relative. Studies have shown a positive impact for households in term of increased consumption, investments and better education and health care (Kireyev, 2006). Therefore, from a microeconomic point of view, remittances should have a positive impact on growth.

Remittances have a number of microeconomic impacts:

a) Remittances stimulate micro and small enterprises by relaxing credit and financial market access constraints. Therefore, remittances can compensate for lack of credit.

b) Besides funding consumption and community projects, remittances are increasingly used by senders to repay debts associated with emigration (debts owed to the so-called "coyotes" or people traffickers) or other debts.

c) Remittances can help to increase intermediate consumption, family savings and social investments (Zarate-Hoyos, 2004).

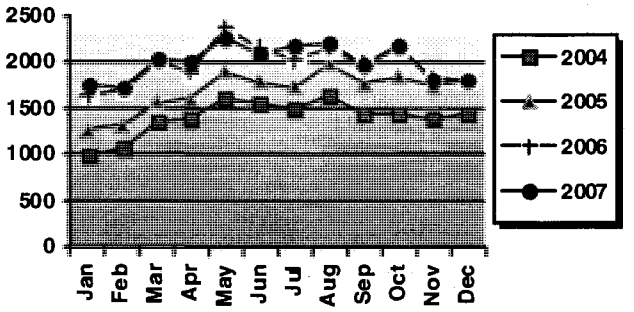
d) Notwithstanding the many positive impacts or uses of remittances, they can impact households negatively as families may take these resources for granted and grow dependent on them, undermining the motivation to develop additional work skills or make investments to generate additional income.

3.8 Mexican remittances: a source of hope for the majority of rural Mexicans

Remittances are the economic expression of migration. Remittances follow a seasonal pattern throughout the course of a year, as can be observed in *Figure 3.7*. For example, they increase significantly during summer and decrease at Christmas vacation times when

Mexican migrants go home. August is the month that remittances reach the highest annual peak, corresponding to the month just before students start a new academic year; migrant parents tend to send more money at this time to pay tuition and buy school supplies, uniforms and shoes. May is also one of the most important months for sending remittances, in part because Mother's Day occurs in this month. Note that remittances in the months of May and June 2007 were less than those in the same months of the previous year. This situation can be explained by the US real estate crisis, which influenced the value of remittances through the US$ exchange rate.

Figure 3.7 Monthly remittances flow to Mexico 2004 - 2007 (US$ Millions)



Source: Bank of Mexico, 2008

Evidence from Mexico shows that remittances can represent a way out of poverty through improvements in livelihoods assets, including human, physical and financial assets (Verduzco, 2000; Goldring, 2004; Sandoval and Vanegas, 2001; Basok, 1999). According to Arroyo and Berumen (2000), remittances represent an average of 54 percent of income for five percent of Mexican households and for many economically impoverished rural communities, remittances constitute 75, 80 or even 90 percent of local income (cited in Binford, 2003a). In addition, in urban Mexico, Woodruff and Zenteno (2001) found that remittances represent an important source of financing for micro-enterprises; in this sense, the Bank of Mexico (2008) estimates that remittances are

responsible for almost 20 percent of capital invested in urban micro-businesses. In addition to the monetary importance of remittances, the fact that a migrant still sends money back home represents an economic link binding migrants and family members in their place of origin within the transnational household (Goldring, 1998).

A number of factors influence the decision to remit. *Table 3.9* summarizes these factors, broken down according to age, sex and family relationship, based on a national survey of employment 2002 (INEGI, 2002). As stated in Section 2.6.2, motivations to remit are related to family ties, whether because of a tacit family contract or altruism. *Table 3.9* shows that 48 percent of migrants send remittances to a parent in Mexico, and they send more than migrants who support children or other types of relatives. In addition, 89 percent of the senders are men, 60 percent are under the age of 30 and 79 percent emigrated without any legal authorization to enter or to work in the US.

Table 3.9 Socio-demographic and economic characteristics of Mexican migrants to the US according to remittance behaviour

Indicators	Migrants who DO transfer money to Mexico
Sex (%)	100
Men	88.7
Women	11.3
Age by groups (%)	100
Less than 30 years old	60
30 years old and over	40
Migrant kinship with the recipient	100
Head of family or spouse	45.4
Son or daughter	47.7
Other kinship	6.9
Migrant status	100
Without documents	79.4
Tourist visa	5.2
Legal residency	5.8
Other	9.6

Source: Lozano (2003), based on INEGI, 2003

3.9 Summary

Mexico's path towards industrialization immersed the agricultural sector in a deep crisis in the 1960s from which the sector has not been able to escape. Agriculture used to be the

most important sector of the Mexican economy, employing approximately 65 percent of the economic labour force in 1940. However, by 2002 it employed only 20 percent of the labour force. Agricultural GDP followed the same pattern, falling from 21 percent to five percent of total GDP. At the same time, the rural population decreased drastically because de-capitalization in the primary sector progressively impoverished masses of rural dwellers, forcing them to migrate into cities to seek jobs outside the agricultural sector.

As the direct result of rural out-migration, remittances have had an important impact on the Mexican economy for the last two decades, at both the macro and micro level. Migration thus offers a way out of poverty not only for rural communities, but for urban areas as well. Overall, 96 percent of the municipalities in Mexico are in one way or other directly linked to migration and therefore receive remittances from abroad.

The motivations for sending remittances are related to the strength of family ties and the migrant's gender, age and education. Mexican migrants send remittances mainly to their family left behind, behaviour attributed by researchers to a tacit family contract or altruism.

Chapter 4

Research Methods

4.1 Introduction

Two major groups of data were used in this study. The first was compiled from official institutions: in Canada, from the Foreign Agricultural Resources Management Service (FARMS) and the Mexican Consulate, and in Mexico from the Ministry of Labour and Social Welfare (MLSW),[29] which publishes information related to CSAWP. The second – and the main – data source in this study was obtained through a survey[30] conducted in 2006 of 257 Mexican farm workers in Southern Ontario: 76 percent of migrants were interviewed in the towns of Leamington,[31] Simcoe, Halton, Hamilton and Bradford and the remaining 24 percent in five other locations, namely Oakville, Georgetown, York, Toronto and Niagara. The questionnaire design was based on initial, in-depth interviews (see Appendix B and C) conducted with Mexican migrants in Leamington, Bradford and Simcoe. The main objective of the in-depth interviews was exploratory in order to inform the design of questionnaire in the second phase of the field research.

The purpose of this chapter is to present the survey methodology used to obtain empirical information and present general information about CSAWP participants in the

[29] Some of the information on CSAWP has not been published. According to the Program's privacy policy, information related to the list of participants or the results of program evaluations that are conducted regularly are not available to the public. However, from unofficial information, I was able to learn that the MLSW hired an external evaluator to determine whether it was viable to continue the program, as the Mexican government spends a significant amount of money to keep the program alive; the answer was yes.

[30] Both the questions for the interview and the questionnaire have satisfied the ethics board requirements (Protocol Number: 05JN033) that the University of Guelph has put in place for any study involving humans.

[31] A significant number of Mexican workers in Canada are concentrated in Leamington. Basok (2002) states that for 1999 and 2002, close to 40 percent of the population of Mexican agricultural workers in Ontario were found in the town of Leamington, followed by the town of Simcoe, located one and a half hours southwest of Toronto.

sample, including their demographic and socio-economic characteristics at both individual and household levels.

4.2 Questionnaire design

The survey was conducted using a structured questionnaire, which in turn was based on 25 in-depth, exploratory interviews that gathered information on the migrants' individual background and their working experiences in Canada through CSAWP. The in-depth interviews used a flexible interview approach. Personal in-depth interviews were conducted with 25 male respondents on issues related to the process of entering into the Program: how easy/difficult was it and how long the application process took, along with motivations to participate in the Program. The second part of the interview considered the skills developed in Canada and their possible uses in Mexico. The third part focussed on issues related to farming activities in Mexico and the fourth part covered their overall experiences in Canada and whether they were interested in returning the next season.

Responses from the in-depth interviews served to build questionnaires that explored the same four topics in more detail. In-depth interviews were semi-structured and therefore permitted the interviewer to encourage respondents to talk at length about the Program and their experiences of working in Canada through CSAWP. In addition, a data sheet was used to organize the analysis; it listed the major topics of the interview guide in order to record responses in a logical manner. In-depth interviews were recorded and field notes were taken to be analysed and quoted in the text, as can be observed in Chapters six and seven. Some of the responses from the in-depth interviews were textually cited as empirical support. The recorded interviews were reviewed a number of times to identify points of information and categorize them under key research topics,

including motivations to register in the Program, income earned in Canada, remittances sent to Mexico, work experiences and feelings about being in Canada.

The survey was conducted through a designed questionnaire, which was organized into five sections covering individual and household information. The first section focussed on the interviewees' socio-demographic backgrounds. The second section focussed on their work experience in Canada, including their motivations for participating in CSAWP, the length of the contract, hours worked and income earned. The third section covered work activities in Mexico before and after finishing the contract in Canada, while the fourth section considered the economic impact in Mexico of working in Canada, particularly the impact of remittances on their farming investments/activities and the different uses of remittances. The fifth section considered the constraints/problems respondents faced in Mexico in their agricultural activities. Each question was intended to address my research interests, starting with simple questions about general socio-demographic information and then leading respondents to more complex questions in an easy and direct way without making them feel uncomfortable. The questionnaire was initially piloted on 20 migrant workers and finalized based on the responses.

4.3 Selection of respondents

The method used to select the respondents combined qualitative and quantitative approaches in order to sample people who met the criterion for inclusion using a snowball technique, a recognized technique for finding research subjects where one subject gives the researcher the name of another subject, who in turn provides the name of a third and so on (Vogt, 1999). Participants in the sample were identified through three

channels: migrant worker support centres, respondents' residences and commercial centres (such as restaurants and grocery stores patronized by a significant number of migrant workers[32]).

To use the first channel, I obtained the permission of the person in charge of the support centre[33] to interview Mexican migrants in their offices, located in Leamington, Simcoe and Bradford. Mexican migrants come to these offices to get information about their rights as migrant workers in Canada, income tax, social welfare benefits, or, in some cases, just to socialize with other Mexicans. Respondents' residences were located using information from the Mexican Consulate in Toronto, which provided the addresses of a significant number of Canadian farmers with Mexican migrant workers under CSAWP in Ontario. Again, the snowball technique[34] was applied: once I met some Mexican workers, I asked them if they could introduce me to their co-workers in their residences. The third channel, stores and restaurants, was used primarily in Leamington where a significant number of Mexicans go, mainly on weekends, to have lunch or dinner at Mexican restaurants and bars or to visit the "El Campeon" store, which regularly organizes raffles

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[32] Not necessarily those participating in CSAWP.

[33] I would like to thank Stan Raper, the National Co-ordinator for the Agricultural Workers of the United Food and Commercial Workers of Canada, who gave me permission to use the support centres' offices mentioned above to interview Mexican workers.

[34] The snowball technique has a number of deficiencies: a) Bias: A biased sample means that respondents are not randomly drawn, thus not allowing researchers to generalize from that particular sample (Griffiths *et al.*, 1993). b) Inclusion or exclusion of respondents by mistake: Snowball samples will be biased towards the inclusion of individuals with inter-relationships and therefore will over-emphasize cohesiveness in social networks (Griffiths *et al.*, 1993) and will miss "isolates" who are not connected to any network that the researcher has considered (Van Meter, 1990); c) Problems initiating "chain-referral": The very nature of snowball sampling makes it difficult to locate members of a hidden population or minority are difficult with this technique. In order to overcome these difficulties I went to visit several different places to avoid having a biased sample. To solve the problem in c), I required some previous "knowledge of insiders" in order to identify initial respondents. I had several sources of assistance in this, beginning with Stan Raper, the National Co-ordinator for the Agricultural Workers of the United Food and Commercial Workers of Canada, who gave me permission to use the support centres' offices, and their managers who helped me to meet Mexican migrants in the Program, among others. The main value of snowball sampling is as a method for obtaining respondents where they are few in number or where some degree of trust is required to initiate contact. Snowball sampling has been found to be economical, efficient and effective in various studies.

and other events to attract Mexican workers and sells groceries that are important components of the Mexican daily diet. In Simcoe, Mexican workers were identified in the "No Frills" grocery store, where every Friday they get their groceries for the week. In Georgetown I found Mexican workers in a mall as well as in their residences. In Halton, Hamilton, Oakville, York, Toronto and Niagara, I went directly to the farms, asking the employer or foreman (*capataz*) for permission to interview the Mexican migrants.

Most of the questionnaires were completed after work hours. Sometimes I waited in their residences at around 6 or 7 pm for them to come back or visited them over the weekend, often while they were cooking or cleaning their houses. Each questionnaire took about one hour to complete. In total, 10 sites in Southern Ontario were visited and 257 Mexican migrants were surveyed.

4.3.1 Sample size

A proportion sampling method[35] was used to determine the sample size[36].

$$n = \rho(1-\rho)\left(\frac{z}{E}\right)^2$$

Where:
n = the sample size;
z = the number relating to the degree of confidence (in this case, the degree of confidence used is 95 percent so that z = 1.96);
ρ = an estimate of the proportion of people within the population who fall into the target group. As there is no information on the sample proportion,[37] I will take the sample

[35] Lind *et al*,, 2006. Estadística para Administración y Economía. Alfaomega. pp. 314-320.
[36] Since the only information available was the total number of Mexican workers in Canada and the number in each province, it was not possible to use either a probabilistic sampling method or random sampling.
[37] In the absence of information about sample or a proportion in previous studies related with this Program (to my knowledge), theory suggests that the most common confidence interval chosen is 95%, which corresponds to z=1.96 and the suggested proportion p=0.5, since the term p(1-p) will never be higher than p=.50 (refer to Lind *et al.*, 2006, p. 320). The maximum sample size would be n=385. In light of the fact that the Mexican population participating in the Program is located mainly in four places – Leamington, Simcoe, Bradford and Niagara – I can state that, the population is homogeneous, so that the sample size could be small compared to heterogeneous populations.

proportion: $\rho = \frac{X}{N} = 257/7341 = 0.035$, where X is the number of people I interviewed and N is the population of agricultural Mexican workers in Ontario participating in the Program: N=7,341 people.

E = the proportion of error I accept: 0.025

With this formula, I calculate the minimum required sample size considering the population of Mexican workers in Ontario in 2005 based on statistical information from FARMS,

$$n = 0.035(1-0.035)\left(\frac{1.96}{0.025}\right)^2 = 207.6 \approx 208$$

I interviewed 257 Mexican workers in CSAWP in 2006, exceeding the minimum required sample size determined by these calculations.

The survey was conducted in Southern Ontario. From a total of 257 interviews, 66 percent were undertaken in Southern Ontario, namely Leamington, Simcoe, Halton and Hamilton (*Table 4.1*).

Table 4.1 Place of interview for 257 Mexican workers, 2006

Place	Number (%)
Simcoe	67 (26.07)
Halton	43 (16.73)
Hamilton	33 (12.84)
Leamington	28 (10.89)
York	25 (9.73)
Bradford	24 (9.34)
Georgetown	16 (6.23)
Niagara	9 (3.5)
Oakville	7 (2.72)
Toronto	5 (1.95)
TOTAL	**257 (100)**

Source: Own survey, 2006

The remaining 34 percent were conducted in the other six places. Sixty-five percent of the interviews took place in farmer workers' residences, 18 percent in support centres and 17 percent in other places.

4.4 Summary

The empirical study for this thesis is based on a survey conducted in 2006 with 257 Mexican migrants participating in CSAWP in Southern Ontario, mainly in Simcoe, Leamington, and Bradford. The majority of the Mexican migrants in this Program in Ontario and in Canada are concentrated in these areas, and since 2003 migrant worker Support Centres have been operating in these locations. These centres served as a central point to recruit the sample population.

In conducting the survey, a number of techniques were used to identify Mexican agricultural workers in Ontario. Of these, snowball sampling proved to be the most used and most useful. Respondents were recruited mainly in the houses where they live while they are in Canada, many of which I would have never found if it were not for other migrant workers who directed me to additional respondents. I was also able to recognize them at stores/restaurants/bars/gas stations and on the street, and direct contact information was used to find the respondents in the support centres. The final sample size resulting from the survey was 257 individuals who fully answered the questionnaire. Based on this information, Chapters 6 and 7 analyse motivations to participate in the Program and the impact of remittances on farm activities.

Chapter 5

Canada's Seasonal Agricultural Workers Program (CSAWP)

5.1 Introduction

Both the Canada and Mexican agricultural sectors have a bimodal structure. Agricultural employer operations of all sizes need a reliable labour force: to be able to grow, in the case of Canada, and to survive, in the case of small farmers in Mexico. Throughout the history of the agricultural sector in Canada, the Canadian government has implemented assorted programs to alleviate the lack of a reliable labour force willing to work in Canadian farms (Basok, 2002; Satzewich, 1991; and Verduzco, 2000). However, these efforts failed to solve the problem. Few Canadians are willing to undertake agricultural activities (temporary or permanently) due to low wages, difficult and dangerous jobs and the exclusion of agriculture from provincial labour legislation that covers working conditions. Over the last four decades, this labour market disequilibrium has been addressed through Canada's Seasonal Agricultural Workers Program (CSAWP), fulfilling farmers' requirements for reliable workers willing and available to work.

CSAWP was established and designed mainly to supply temporary foreign agricultural workers to agricultural producers in Canada during times when domestic labourers could not, or would not, reliably work in agriculture. The most severe problem facing Canadian farmers is the turnover of workers. It is not that Canadians do not want to work on farms, but they are not there when they are needed, particularly at harvest time. In contrast, this is one of the main reasons seasonal workers are valued: they arrive when they are needed and they are available on farms at the required time (Verduzco, 2000; Basok, 2002).

CSAWP started with the Caribbean commonwealth countries[38] in 1966. Eight years later, Canada and Mexico signed a Memorandum of Understanding (MoU) through which Mexican agricultural workers could be hired by Canadian farmers to work in agricultural activities for a minimum of 240 hours, but not exceeding a period of eight months per season. Employees are paid the same wage as Canadian agricultural workers who perform the same tasks and are given housing, as well as access to health and medical services during their stay in Canada.

To put this Program in its economic context, in 2005 Mexico received US$89 million in remittances from Canada (World Bank, 2006) (*Table 3.7*); the estimated remittances from CSAWP was approximately US$67 million in 2004 (MLSW, 2006),[39] representing more than 75 percent of the total. Hence, the economic importance of CSAWP for Mexico is clear. The objective of this chapter is to summarize: 1) the characteristics of CSAWP, 2) its history and evolution over time, 3) why this Program is preferred to other guest programs, and 4) its operation in Mexico and in Canada.

5.2 CSAWP history and evolution

CSAWP is a demand-based program, as it responds only to employer labour demand. This implies that the Program would not exist if there were no demands for foreign labour made by Canadian farmers. No Mexican workers are sent without a request in advance (MLSW, 2005).

CSAWP has now been in existence for 42 years. It began as a pilot Program between Canada and Jamaica in 1966. One year later Trinidad and Tobago and Barbados were

[38] The Caribbean Commonwealth countries consist of twelve countries, namely Antigua & Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines and Trinidad & Tobago.

[39] The MLSW estimated the remittances sent by the workers based on their reports once they finished their contract for the season.

included. Seven years after that the Program expanded to become the Commonwealth Caribbean/Mexico Seasonal Agricultural Workers Program, which included Mexico, Jamaica, Trinidad and Tobago, Barbados and the Organization of the Eastern Caribbean states (OECS) (Antigua and Barbuda, Commonwealth of Dominica, Grenada, Montserrat, St. Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines) (FARMS, 2007).

Mexico and Canada have signed an MoU within the International Labour Organization (ILO) agreement framework that states that every government should seek to provide people with employment in order to improve their standard of living (MLSW, 2007). In this sense, the MLSW recognizes that, since there is not enough labour demand in rural areas of Mexico, the Mexican government should look for other alternatives for those people within its national labour policy. Hence, in 1974 the MoU was signed for a Program that would make it possible to grant Mexican agricultural workers temporary work permits for seasonal employment in Canadian agriculture. At the first, this Memorandum was ratified every five years, but in 1995 both governments decided to make the ratification automatic unless one of the parties decided otherwise. The main objective of the Program is to benefit both countries, for Canada, by hiring temporary agricultural workers in order to satisfy the Canadian agricultural labour market demand. For the Mexican government, CSAWP is described as a "model of bi-national cooperation which permits the maintenance of an organized and safe temporary migratory flow of Mexican agricultural workers, while guaranteeing to respect to the workers' labour, social and human rights" (my translation from the original Spanish) (Trejo, 2007).

Currently, nine provinces participate in the Program, namely Alberta, British Columbia, Prince Edward Island, Manitoba, New Brunswick, Nova Scotia, Ontario, Quebec and Saskatchewan. In 2005, Ontario and Quebec alone employed 95 percent of the workers: 80 percent of Mexican workers go to Ontario, 15 percent to Quebec and five percent to the rest of the provinces (Basok, 2002; Mexican Consulate in Toronto, 2007).

Table 5.1 shows that, in 2000, the crops that created the greatest demand for Mexican labour were vegetables and tobacco, which together accounted for 61.1 percent; greenhouses, with 17.8 percent; fruits, with 11.8 percent (14.3% if apples are included); and ginseng, nurseries and apiculture, which together accounted for 6.8 percent. The demand for female Mexican workers is mainly in fruit and greenhouses operations (MLSW, 2006).

Table 5.1 Demand for Mexican workers by activity in Canada, 2000

	Crops								
	Vegetables	Apples	Tobacco	Greenhouse	Nurseries	Ginseng	Fruit	Apiculture	Total
Total	3640	227	1964	1635	393	192	1079	45	9175
Percentage	39.7	2.5	21.4	17.8	4.3	2.0	11.8	0.5	100

Source: MLSW, 2006 Dirección General de Empleo.

Regarding the participation of Mexican states, only a few of them have traditionally participated in the Program mainly because at the beginning of the Program, it was not widely advertised nor was it very accessible to applicants living outside the country's central region: there was only one "single window" that provided information about the Program to the public and this was located in Mexico City. Therefore, in 1994, 80 percent of the Program's participants came from six states in the central part of the country, namely Puebla, Tlaxcala, Mexico, Morelos, Hidalgo and Guanajuato.

Table 5.2 Number of Mexican workers in CSAWP by State, 2001-2007

State	2001	2002	2003	2004	2005	2006	2007
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Chiapas	95	91	117	100	128	150	239
	(0.89)	(0.86)	(1.10)	(1.07)	(1.37)	(1.42)	(2.01)
Distrito Federal	280	712	258	237	255	248	268
	(2.62)	(6.76)	(2.43)	(2.55)	(2.72)	(2.35)	(2.26)
Durango	103	127	106	91	119	127	230
	(0.96)	(1.20)	(1)	(0.98)	(1.27)	(1.20)	(1.94)
Guanajuato	1021	757	799	723	717	710	748
	(9.56)	(7.19)	(7.54)	(7.78)	(7.66)	(6.73)	(6.30)
Hidalgo	655	682	619	562	560	620	635
	(6.13)	(6.47)	(5.84)	(6.05)	(5.98)	(5.87)	(5.35)
Jalisco	341	389	184	115	106	186	224
	(3.19)	(3.69)	(1.74)	(1.24)	(1.13)	(1.76)	(1.88)
Mexico	2,402	2,301	2,527	2,168	2,363	2,508	2,613
	(22.49)	(21.86)	(23.85)	(23.34)	(25.24)	(23.76)	(22.02)
Michoacan	431	313	442	372	375	448	535
	(4.03)	(2.97)	(4.17)	(4.01)	(4.01)	(4.24)	(4.51)
Morelos	749	767	779	713	664	689	685
	(7.01)	(7.28)	(7.35)	(7.67)	(7.09)	(6.53)	(5.77)
Oaxaca	546	413	497	413	398	539	608
	(5.11)	(3.92)	(4.69)	(4.45)	(4.25)	(5.11)	(5.12)
Puebla	841	1010	884	849	725	745	782
	(7.87)	(9.59)	(8.34)	(9.14)	(7.74)	(7.06)	(6.59)
San Luis Potosi	254	200	252	193	180	219	291
	(2.38)	(1.89)	(2.38)	(2.08)	(1.92)	(2.07)	(2.45)
Tlaxcala	1,834	2,008	1,881	1,781	1,694	1,881	1,978
	(17.17)	(19.07)	(17.75)	(19.17)	(18.09)	(17.82)	(16.67)
Veracruz	511	323	514	459	501	576	673
	(4.78)	(3.06)	(4.85)	(4.94)	(5.35)	(5.45)	(5.67)
Yucatan	37	7	104	58	61	109	149
	(0.35)	(0.06)	(0.98)	(0.62)	(0.65)	(1.03)	(1.26)
Others*	581	429	632	453	517	800	1,206
	(5.44)	(4.07)	(5.97)	(4.88)	(5.52)	(7.58)	(10.16)
TOTAL	10,681	10,529	10,595	9,287	9,363	10,555	11,864
	(100)	(100)	(100)	(100)	(100)	(100)	(100)

*States such as: Aguascalientes, Baja California S., Campeche, Coahuila, Colima, Chihuahua, Guerrero, Nayarit, Nuevo Leon, Queretaro, Quintana Roo, Sinaloa, Sonora, Tabasco, Tamaulipas, Zacatecas
Source: MLSW, 2007

With the increase in Canadian demand for Mexican workers[40] and decentralization of Program administration in Mexico into different state employment offices such that there is more than one "window" to serve applicants from different parts of Mexico, more candidates have the opportunity to participate in the Program. However, the biggest percentage of participants still comes from the central region of the country. Today approximately 66 percent of the total population of workers in the Program comes from the six states mentioned above (*Table 5.2*).

[40] Even today there are many different horticultural sectors that face a shortage in available domestic seasonal labour (FARMS, 2007).

Since 1974, the year in which the Program began including Mexican workers, the number of participants has increased an average of 12.5 percent annually. Thus, the number of participants has grown from 203 in 1974 to 11,864 in 2007.

Table 5.3 Number of Mexican workers in CSAWP, 1974-2005

Years	Number of workers (Of those, number of women)	Years	Number of workers (Of those, number of women)
1974	203	1991	5,148
	(0)		(77)
1975	402	1992	4,778
	(0)		(77)
1976	533	1993	4,866
	(0)		(72)
1977	495	1994	4,910
	(0)		(48)
1978	543	1995	4,886
	(0)		(56)
1979	553	1996	5,211
	(0)		(57)
1980	678	1997	5,647
	(0)		(67)
1981	655	1998	6,486
	(0)		(145)
1982	696	1999	7,574
	(0)		(165)
1983	615	2000	9,175
	(0)		(230)
1984	672	2001	10,275
	(0)		(420)
1985	834	2002	10,681
	(0)		(344)
1986	1,007	2003	10,595
	(0)		(303)
1987	1,538	2004	10,708
	(0)		
1988	2,623	2005	11,720
	(0)		
1989	4,414	2006	10,555
	(37)		
1990	5,143	2007	11,864
	(76)		

Source: MLSW for data 1974-2002 and 2004, 2006 and 2007. Mexican Consulate in Toronto for data 2003-2005. Vanegas (2004) for data on female participants[41] and Durand (2006). Data on female participants for 2004 through 2007 were not found.

This growth has been determined by Canadian employers' demand for workers. The participation of women started in 1989 when Canadian farmers requested workers specifically by gender; they work mainly selecting fruits in greenhouses, nurseries or the

[41] There is a significant discrepancy in data from different sources; for instance, in 1995 the MLSW reports a total of 4,886 Mexican workers in Canada while FARMS reports only 3,825. This research will consider the MLSW and the Mexican Consulate in Toronto as the two main sources of data, since they are the most up-to-date.

field (Durand, 2006). Female participants account for approximately three percent of the total Mexican workers in the Program (*Table 5.3*).

5.3 Objectives of the Program

For Canada, the main objective of CSAWP is to satisfy the increasing demand for agricultural labour during times when the domestic supply is not sufficient and/or reliable, especially during peak times. Hence, Mexican and Caribbean agricultural workers can legally enter Canada to meet the demands of fruit, vegetable and horticulture (FVH) growers. In doing this, the Program seeks to prevent the illegal trafficking of workers. There are two relevant policy objectives in the CSAWP regulations and immigration laws at issue: 1) migrant workers are to be afforded the same treatment as Canadian workers; and 2) the hiring of migrant agricultural workers should not result in depressed wages and working conditions unattractive to Canadian workers. The Program allows workers to stay legally from a minimum of 240 hours (around six weeks) up to eight months, but workers have to leave the country once the contract is finished. They can, however, return the next year and work for another season (Verduzco, *et al.*, 2003; Basok, 1999; Trejo, 2007). Within the ILO framework, Canada, as well as Mexico, seeks to improve the economic welfare of the migrant workers by providing them with temporary full-time employment in the FVH industry at relatively higher wages than they could obtain from similar jobs in their home countries. With the earnings in Canada, migrants could enhance their standard of living and that of the family they left behind (MLSW, 2007). It is suggested that the Program can also help to maintain Canada's economic prosperity and global agricultural trade competitiveness and therefore could

expand job prospects for Canadian citizens in sectors that depend on agriculture and other related activities (Verma, 2004; Preibisch, 2007).

Within the Mexican labour policy framework, CSAWP is designed to offer a secure alternative source of employment for Mexican agricultural workers, satisfying the labour demand of Canadian growers. This means that the Mexican government selects, recruits and promotes the flow of Mexican agricultural workers to Canada. Therefore, for Mexico CSAWP represents an avenue to alleviate poverty among rural people by giving them the certainty of a paid job for a certain period every year (Trejo, 2007; MLSW, 2006; Mexican Consulate in Toronto, 2006).

5.4 Operation of the Program

CSAWP is managed and implemented within a three-level framework controlled mainly by governments.[42] At the federal level in Canada, it is governed by the *Immigration and Refugee and Protection Act* (IRPA) and a labour market policy premised on the "Canadians first" principle. It is also governed at the provincial level by statutes relating to employment standards, labour and health. The third level consists of bilateral arrangements between Canada and the source country. These arrangements are formalized in an MoU and standardized employment contracts between FVH growers, migrant workers and government agents of the supply country. There is one Agreement for the Employment in Canada of Commonwealth Caribbean Agricultural Workers and

[42] Private actors and any role they may have in CSAWP are defined and regulated by the government. Human Resources and Skills Development Canada (HRSDC) is the primary Canadian government agency administering the program. Government representatives from Mexico and the Caribbean play the role of mediators between workers, the Canadian government and growers. The Canadian government privatized the administration of the CSAWP by delegating certain duties to the Foreign Agricultural Resource Management Services (FARMS) in Ontario, a non-profit association of growers in the province that is responsible for the transmission and processing of employment orders accepted by Human Resource Centres (Verma, 2004).

one Agreement for the Employment in Canada of Seasonal Agricultural Workers from Mexico. The Agreement covers all aspects of the conditions of employment. The Agreement is reviewed with the worker, who is required to sign it before departing for Canada. The agreement is a four-party agreement between the worker, the employer, the foreign government and the Government of Canada (FARMS, 2007).

5.4.1 Operation of the Program in Mexico

For the operation of the Program in Mexico, an inter-ministerial commission composed of the Chief Administrative Officers of the ministries of the Interior, Foreign Affairs, Health and Welfare and Labour and Social Welfare was established. The functions performed in Mexico by these institutions consist of the promotion of the Program and the selection, organization and sending of workers to Canada (Verduzco, 2000). There is no private institution involved in performing any of these processes.[43] In addition, in 2005, the MLSW began giving workers $3,000 Mexican pesos (equivalent to C$300) as economic support for the worker's family while he or she is in Canada during the first weeks and to cover the registration expenses such as travel to Mexico City for completing the process and to the international airport (MLSW, 2005).

The MLSW in Mexico City selects agricultural workers from various Mexican states. Selection is based primarily on the applicant's agricultural skills. Applicants demonstrate these skills by presenting any official document[44] that records the applicant's occupation as "farmer." In addition, applicants must have attended school for a minimum

[43] Private consultants do handle some of the program evaluations. The MLSW periodically hires people (mainly academics whose speciality is labour-market-related topics) to evaluate the program and determine whether the program should be maintained. Up to now the answer has been "yes."

[44] For example, a marriage certificate where the occupation line reads *"campesino o agricultor"* (farmer). If the applicant does not have any official document to prove his/her agricultural skills, MLSW staff ask them to show their hands. If they have calluses or similar signs of manual labour, they are accepted as a candidate in the Program.

of three years and a maximum of 12 years. Male applicants must be between the ages of 22 and 45 years and female applicants between the ages of 23 and 40 years. Male applicants must be married or living in a common-law marriage, preferably with children; females do not have to be married, but must have children. By fulfilling these requirements, applicants demonstrate that they have strong ties with their community in Mexico and that they are not interested in staying in Canada after the completion of their contracts (Verduzco, 2000; MLSW, 2005).

Once the workers pass the selection process, they are sent to one of five Medical Centres run by the Federal District government that have been authorized by the Canadian Embassy to conduct the required medical exams. After the applicants have successfully passed the medical examination, they are ready to be documented to go to Canada. To achieve that, they must apply for a three-year passport (available to them at a discounted price) and then go to the Canadian Embassy in order to obtain a temporary work permit. All forms must be correctly filled out in the MLSW prior to the workers' departure to Canada (Verduzco, 2000).

The last step is to send the Mexican agricultural workers to Canada. The Mexican government sends the exact number of workers that Canadian farmers have requested, no less and no more. The MLSW keeps a number of workers on reserve at the airport from which the workers depart, so that in the event that one or more workers do not show up, no airplane seat will go empty[45] (interview with a representant of the MLSW, 2005).

[45] Sometimes workers do not show up at the airport because of bad health conditions or other reasons. However, in some cases the reason is because once they have the support money ($3,000 pesos) that the Mexican government provides to help workers with the registration expenses, they prefer to keep it and not to travel to Canada, even at the risk for not been selected in the future (personal interview with the MLSW representative in Mexico, 2005).

5.4.2 Operation of the Program in Canada

Human Resources and Skills Development Canada (HRSDC) and Citizenship and Immigration Canada (CIC) manage the Program in cooperation with agricultural producers. Under bilateral arrangements reached in 1974 between Canada and Mexico, the demand-driven Program responds to requests from employers to offset labour shortfalls.

Thus, the program allows for the entry of foreign workers to meet the temporary seasonal needs of Canadian agricultural producers during peak harvesting and planting periods. HRSDC and CIC carefully balance these types of job offers with the employers' comprehensive efforts to hire Canadians and the well-being of the foreign workers in Canada. Once Canadian farmers demonstrate they need foreign labour, they put in their labour requests through FARMS, which in turn sends the list to Mexico.

Once the Mexican government has fulfilled the requirements of Canadian immigration law and the agricultural workers have been sent, they are received at Canadian airports by staff from the Mexican Consulate or a representative of it. Consular staff members help them to present their papers to Canadian Customs and Immigration. After they have cleared customs, the Canadian employers (or their representatives) collect the workers and take them to the farms (Verduzco, 2000).

5.5 Employment agreement and working conditions

The employment contract exists between the foreign worker and the employer. It provides details about the worker's job and conditions of employment. CSAWP's employment agreement establishes that the employer agrees to hire the worker for a term of not less than 240 hours over a term of six weeks. The normal working day is not to

exceed eight hours, but the employer may ask workers to work additional hours and the workers can choose whether or not to agree. After every six consecutive days of work, workers are entitled to one day off to rest, but in situations where urgent farm work cannot be delayed, the employer may request the workers' consent to postpone that day. In addition, the employer has to provide suitable accommodation and meals or furnish cooking utensils, fuel, and facilities without cost to the worker. During each working day, the worker has the right to have a 30-minute break for meals (HRSDC, 2004). Although these working conditions are established in the agreement, there have been some irregularities that are clearly highlighted by a number of researchers who found that some workers not only were living and working in bad conditions but also were socially excluded in the communities where they live (Basok, 2000a; Preibisch, 2004a).

Costs covered by the employer are as follows: partial payment of round-trip airfare (except for British Columbia where employers pay full airfare); transportation from airport to the place of employment and worksites; free accommodation meeting municipal building requirements and health standards set by the province where the work is being done; a proper cooking area with pots and pans if workers choose to make their own meals; registration with the provincial health insurance plan; and free provision of on-the-job injury and illness insurance (Worker's Compensation).

According to the information on the payroll sheets from the Mexican Consulate (2007), the deductions from the worker's salary are as follows: four percent for operation expenses including the visa and a portion of the airplane ticket expenses; 4.23 percent for the Canadian Pension Plan; 1.95 percent for Employment Insurance; and C$6.72 every two weeks for health insurance.

5.6 Why CSAWP could be preferred by Mexican workers to other guest worker programs or illegal migration

CSAWP could be preferred to other guest worker programs or illegal migration for the following reasons:

Legal migration. All the participants in CSAWP hold a work permit for the time they are required in Canada by the Canadian grower.[46] They prefer to participate in CSAWP than be in the US illegally with all the risk, expenses and uncertainty that this situation represents. Further, contract workers to Canada prefer legal to illegal immigration (Binford, 2002; Basok, 2000b; Griffith, 2002, among others).

Cost: CSAWP is less expensive than illegal migration to the US. Binford (2002) reports that the costs incurred by CSAWP workers in their trips to the capital (Mexico City) are little compared to the US$2,000 that illegal immigrants pay to labour smugglers to cross the US border.[47] Border-crossing costs represent only a portion of the costs that illegal immigrants often incur in seeking and finding work, housing, and transportation (Basok, 2002; Binford, 2002).

Exchange rate: In the past, the exchange rate differential (US$1:C$1.5 before 2005) between the Canadian and the US dollar was an important influence in the motivations to participate in the US guest programs or even to cross the border illegally. Lately, however, this differential has almost disappeared (US$1:C$1.15 by 2006), and hence it seems that the US will not be as attractive.

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[46] However, Barron (2005) states that on some farms there is illegal temporal migration: some of Mexicans who had previously come through the program now return independently. This type of migrant is a minority (13.6 percent of her sample), but the author believes that in the future market changes may occur that could increase this kind of migration.

[47] Sometimes this fee is much higher, depending on the time of the year and whether the topic of migration control is in the news.

Certainty: CSAWP gives the workers an opportunity to use their overseas earnings for capital investments, as they know they are allowed to return the next year. Although most use earnings and remittances to build housing, meet household consumption needs and provide for the educational needs of their children, illegal migration does not stimulate any spillover effects on the sending country as it tends to be more permanent than temporary, increasing the chance the workers will not go back home and earnings will be spent in the host country instead of the workers' place of origin (Basok, 2002; Griffith, 1986). In contrast, illegal and uncontrolled migration encourages migrants to abandon their family in their place of origin. Thus, not only spouses and children, but also parents and grandparents, who used to depend on remittances, are now alone with no economic alternative to help them survive (Durand, 2006). According to Barron (2005), all migrants to Canada send remittances home, while in the case of migrants to the US, only 24 percent of men and 49 percent of women do so. It would appear that the permanence in the labour market combined with having a family to support in Mexico ensure that the migrants send money home.

Control in the Program: Unlike the H2A and H2B visa programs, which are controlled, organized and administered by private enterprises rather than government; both the Canadian and Mexican governments control CSAWP. The migration process seems to be better organized within CSAWP than in the H2A and H2B visa programs, where it is left up to the private sector to act *honestly*. One can easily recognize the potential for wrongdoing in this kind of situation. Some workers are fairly paid but others not; some of them have a small percentage deducted to pay the costs of visas, transport and other services, but other workers have much more deducted for the same services in

the name of "the favour" done for the migrants (Durand, 2006). Another reason why Mexican workers prefer CSAWP to the H2A program is because they can formally be transferred to another farm in Canada, whereas in the US system many employers seem to prefer making more informal arrangements that do not always benefit the workers (Basok, 2002). In addition, the fact that workers are selected by name in CSAWP means they may feel more comfortable and demonstrates a good relationship between employer and employee (Durand, 2006).

CSAWP contrasts markedly with the H-2A program in the US. Mexican government officials tend not to have much direct involvement in the recruitment of H-2A visa workers going to the United States, yet they are directly involved in the recruitment of contract workers to Canada (Verduzco and Lozano, 2003). In addition, the Mexican government requires Canadian growers to give written evaluations of Mexican workers, which the workers give to Mexican officials upon their return (Basok, 2002). These evaluations can be used to deny future participation in the Program. There is no such evaluation in the H2A program, as workers and employers are not asked to fill in or submit these reports (Griffith, 2003). The workers' opinion about the intervention of the Mexican government in Canada and in the US is divided. While in Canada the opinion is that consular representatives have no power to defending their rights, in the US Mexican workers believed that it would be a good idea to have Mexican government officials involved in the Program so they could be counted on to resolve work-related problems (Griffith, Heppel, and Torres, 2002). According to Griffith (2003):

> *"Basok (2002) in Canada and Mexico, Binford (2002) in Mexico, and Griffith, Heppel, and Torres (2002) in the United States, Mexico, and the Caribbean all elicited statements from workers that suggested that, as a whole, they prefer migrating legally to Canada and the United States rather than illegally." (p. 58)*

Hence, the main factors influencing this decision for Mexican farm workers are the greater safety and lower costs of legal migration via guest worker programs, which is far less likely to lead to debt relations at home.

5.7 Summary

CSAWP is a bilateral Program intended to benefit the economies of both migrant sending and receiving countries, particularly their labour market disequilibria. Canada experiences a shortage in labour supply while Mexico has an excess, and therefore this Program can be seen as a way to alleviate both problems (Basok, 2002; Preibisch, 2004a, 2007). Unlike the H2 Visa programs, which involve less government oversight, CSAWP is revised constantly by various institutions that track it very closely. Academics have exposed any violations of the employment contracts or of human rights, and the authorities have made decisions designed to resolve these problems. The characteristics of the Program in terms of how it is controlled, the number of workers involved (it is easier to oversee the migration of 10,000 workers than the 80,000 in the H2A program) and the seasonally based nature of the migration have made it a successful Program. Indeed, CSAWP has proved successful enough to be used as a model for other countries such as Australia (Griffith, 2003).

For Mexico, CSAWP represents "an escape valve" for labour market disequilibria, so the MLSW takes actions to preserve the Program because it not only helps give migrants a secure income but also supports 55,000 families in rural areas thanks to the

spillover effects it creates. Hence, the number of participants increases every year as Canadian demand for Mexican workers increases. The fact that Mexican workers are allowed to enter Canada legally for a certain period and are then required to return home after they have finished the contract has helped ensure that earnings are spent more in Mexico (75 percent of the income earned) than in Canada, which in turn is beneficial to the Mexican economy and to family integration and stability as well. The reasons for workers to prefer CSAWP over other guest programs are mainly related to economic and safety issues, however a variety of reasons could influence the decision to participate in the Program; this is one the main questions discussed in the next chapter.

Chapter 6

Motivations to Participate in CSAWP: An Empirical Analysis

6.1 Introduction

For many years, one of the alternatives Mexican workers have considered to supplement their farm income has been participating in guest worker programs. Hence, this study tries to identify what reasons convinced Mexican farm workers to choose CSAWP from their options. Before doing any empirical study, it can be assumed that the main reasons for Mexican migrants to participate in this kind of Program are economic and the lack of job opportunities in Mexico, particularly in rural areas; however, this needs to be corroborated. Consequently, the main objective of this chapter is to identify the reasons why Mexican workers decide to participate in CSAWP, as a special case of off-farm activities, and thus to migrate temporarily to Canada to work in the fruit, vegetable and horticulture (FVH) sectors.

6.2 Previous studies on Mexican motivations to migrate

Among the factors influencing Mexican migration, most studies have found they are focussed on three main issues that can change the migrants' utility (*Table 6.1*). The first is related to income, i.e., to increase absolute and/or relative income. The second is associated with changes in utility connected with an individual's safety needs. The third is networks that earlier migrants have already built in the destination place. The latter issue could be seen more as a means to an end than a changing factor on the migrant's utility, but without a network not only the decision to migrate would not be taken as easy as it can be, but also the cost of migration will be higher than having a network affecting the migrant's utility.

The following issues not only affect the type of migration (permanent or temporary; legal or not) but also consider the type of migrant making the decision (skilled or not). In addition, there is no a single factor defining the type of migration but a combination of factors that affect both type of migration and duration of the migration, for example, if a person holds a high education level and have a permanent job in the destination country, the migration will tend to be permanent.

On the other hand there could be the case that some of the factors do not determine the migrate–do not migrate choice but the duration of migration. For example, those migrant workers who already have a contract for a certain period of time, the migration will be on a temporary bases for they are limited for the contract. This is what happens to Mexican workers participating in CSAWP who are not allowed to settle permanently in Canada because of the characteristics of the Program as was described in Chapter 5.

6.2.1 Motivations related to income source

Stark and Taylor (1989) hypothesize that: "household members undertake migration not necessarily to increase the household's absolute income but rather to improve the household's position (in terms of relative deprivation) with respect to a specific reference group" (p. 1165).

Escobar-Latapí (1999) argues that Mexican migration to the US is mainly motivated by the higher probability[48] of finding a job compared to Mexico and the expected income in the US is higher than that in urban areas in Mexico. Since most migrants are in the 16-44 age range with a low level of education, at home they are trapped with no jobs while in US they are finding jobs and being recruited in more regions and sectors. Since the

[48] Massey (1999) argues that "such movement occurs even when the probability of obtaining an urban job is low, because when multiplied by high urban wages the low employment probabilities yield expected incomes well above those in rural areas, where wages and employment are both low" (p. 304).

1980s, as a consequence of Mexican economic instability, as well as policy changes in the US and growing labour demand in urban economic sectors throughout the US, they also tend to stay longer becoming permanent migrants in the US.

Table 6.1 Literature on motivation for Mexicans to migrate

Study	Factor/reason	Technique/instrument	Origin-Destination
1) Income/Job			
Massey and Espinosa, 1997	Number of schooling years on legal (-)*** and illegal migration (-)	Multinomial logit	Mexico-US
Yunez-Naude, 2001	Fixed wages in the community on international migration (-)*** Education of the head of the family on international (+) and internal (-) migration	Probit regression	Mexico-US (Jal., Mich, Pue, Coah.)
Taylor, 1987	Highest level of schooling on international migration (-)***	Maximum likelihood probit	Mexico to abroad
Stark and Taylor, 1991	Highest level of schooling on internal (+)*** and international migration (-)	Multinomial logit	Mexic-US
Stark and Taylor, 1989	Wage differential (+) Relative deprivation in absence of migration (+) Migration networks and experience (+) Age^2 (-: life cycle, resettle) Size of family (+)	Probit model	Mexico-US (Pátzcuaro, Mich)
Escobar-Latapí, 1999	Job seekers	Interviews	Mexico-US
Massey and Espinosa, 2005	Bi-national wage gap estimated directly from the sample instead of published wages	Multinomial probit model	Mexico-US
Taylor 1987	Expected absolute income gains (+)	Probit model	Mexico-US
Binford *et al.*, 2004	Wage differential, lack of jobs in Tlaxcala, desires to invest in farm and non-farm activities and build own house, among others	In-depth interviews	Tlaxcala, Mex-Canada
Garcia, 2003	Lack of jobs in Mexico Mexican crisis (1982: to an open economy; 1994 NAFTA results in more migration instead of less, contrary to expectations)	Interviews	Zacatecas-US
2) Security Needs			
Sana and Massey, 2000	Social security system	Interviews	Mexico-US
Roberts *et al.*, 1999	Health access in destination country and financial security	In-depth interviews	Mexico-US
3) Networks			
Massey, 1987	Own migration experience to US (+)** Father's migration experience to US (+)**	Logit model	Rural Mexico-US
Roberts *et al.*, 1999	Kinship and friendship	In-depth interviews	Mexico City-US
Massey and Garcia-España, 1987	Have a migrant relative in the destination country (+)*** Have migrants from the same community in the destination country (+)***	Logistic regression	Mexico-US (IMSS survey)
Yunes-Naude, 2001	Family members in the US on international (+)*** and national (-)* migration	Probit regression	Mexico-US (Jal. Mich., Pue., Coah.)

*, ** and *** coefficients significant at 10, 5 and 1 percent respectively.

Another factor causing income-related migration from rural areas of Mexico towards more developed areas is education. Yunez-Naude (2001) and Stark and Taylor (1989) state that higher marginal returns from schooling in the destination country, (for example, if schooling increases migrant's wages and/or their probability of employment), will increase the probability of migration. Hence, Mexican people with or without education will make different migration decisions. For example, those who have no education would attempt to migrate illegally to the US for the time they can be employed or are needed by the US employers and as long as the migration authorities do not deport him/her, while those with high level of schooling are more likely to migrate legally and permanently (Massey and Espinosa, 1997).

6.2.2 Migration based on security needs

One means by which people displaced from traditional jobs seek to ensure their economic well-being is by selling their services overseas. However, higher foreign wages are not the only factor motivating people to emigrate. Households struggling to cope with the harsh transformations of economic development also use international migration as a means of overcoming frequent failures in markets for labour, insurance, capital and credit. The absence of unemployment insurance in developing nations creates an incentive for families to self-insure by sending one or more members overseas for work (Massey *et al.*, 2002).

Health insurance and other social benefits will depend on the type of migration (temporary or permanent; legal or illegal). If migration is temporary and illegal, neither the individual nor the family are entitled to have health services in the destination country, while permanent and legal migration brings these benefits (Roberts *et al.*, 1999).

Therefore, security issues affect the migrate-do not migrate choice but the temporary of migration will depend on other factors such as the legal status.

6.2.3 Network migration

Building network migration abroad is easier between people coming from small towns than from big cities. Robert *et al.* (1999) found that Mexican migrants in Austin, Texas coming from small rural areas (for example San Gregorio, State of Mexico) have more connections than highly skilled workers coming from Mexico City. In big cities, there is more heterogeneity, while in small rural areas, people's characteristics are more homogeneous in terms of income and knowledge/skills and they tend to know each other. Network migration is related with that network first built in the destination country and are developed in the country of origin.

This situation is different in Ontario, Canada where there is not as a long history of Mexican settlements as there is in the US. However, Samuel and Gutierrez (1995) argue that network migration to Canada has started to build through visitors, tourists and temporary agricultural workers who interact with Canadian people and become acquainted with their style of life, such that applications from Mexicans to become permanent Canadian residents are beginning to snowball.

Colby (1997) argues that family and friendship ties are stronger with migrants in the US than in Canada. When Mexican farm workers in rural Ontario were interviewed, they stated that: "they did not wish to remain in Canada primarily because in small, rural Ontario towns where they worked there were no Mexican communities where they could easily be assimilated, set up home and find permanent jobs" (cited in Basok, 2000, p. 228). It is important to note that every worker migrating through CSAWP enters Canada

with a legal temporary work permit. Contrary to what occurs with illegal migration to the US, migration to Canada is regulated to avoid disequilibria between labour supply and demand according to the mutual benefits stated in the MoU (Barron, 2000, p. 351). Hence, CSAWP does not give migrants an option to settle permanently.[49] However there are a few cases[50] in which migrants apply for permanent residency in Canada, either because they develop a relationship with a Canadian woman or for other reasons, despite knowing that they would be forced to leave the Program.

Network migration between Mexico and the US represents a strong tie among migrants settled in US. These ties are stronger since 1986 because of migration policy changes through the IRCA that allow legalized migrants to sponsor family members to join them. Once the volume of network migration from a particular area of origin starts playing an important role, the cost of migration could be lowered so that migration becomes self-perpetuating, creating the social structure needed to sustain it. People left behind are induced to migrate since their networks make the migration path easier than before and they, in turn, are able to reduce the costs and risks for a new set, encouraging

[49] Workers participating in the program are authorized to remain in Canada only for a temporary period not exceeding eight months. Workers are required to live on the grower's property and to work only in agriculture. The majority of the workers are "named" by growers to participate in the program through a form that is filled out and given to the worker at the end of the contract, which the worker in turn presents to the MLSW in Mexico. The "naming" process provides workers a level of job security for the next season, but at the same time, it may also act as a disincentive for a worker to raise complaints for fear of the employer not "naming" him/her for the next season. Many workers have been returning to Canada over several years under the "naming" process; however, workers do not accrue any rights to Canadian citizenship (Verma *et al.*, 2002).

[50] During the survey process, I discovered two cases of workers participating in the program who have migrated permanently to Canada. The first case is Roberto, who met a Canadian woman and started a relationship with her. They have a baby and because of this, he was able to apply for and obtain permanent residence in Canada. The second case is Amalia, whose father used to participate in CSAWP in the 1970s. By 1976 she and her family migrated to Canada permanently. This does not mean that the Program itself allows or helps the seasonal workers to migrate permanently. However, Amalia said that by participating in the Program, her father came to know Canada. One year he went back home excited about Canada and the Canadian lifestyle and he told his wife he would like to move permanently to Canada. He and his wife made the decision to migrate with their family; how they applied to migrate I do not know, but I do know they became legal permanent residents and now are Canadian citizens. In fact, Amalia got married to a Canadian man, and they have one child so far.

some of their family members and/or friends to migrate, and so on (Massey, 1987; Massey and Garcia España, 1987).

6.3 Who participates in CSAWP?

By 2006, just under 11,000 Mexican migrants are placed on Canadian farms through CSAWP. Their incomes, which total C$80 million annually, support 55,000 family members in Mexico (Bank of Mexico, 2006; MLSW, 2006).

The following sections and the quantitative analysis are based on the information gathered through my survey. Hence, figures in tables were obtained from the survey unless otherwise noted.

6.3.1 Background of migrants in the sample

Although the Program is now open to all Mexican farm workers, the central states are still the major source of migrant workers. Together, Guanajuato, Hidalgo, Mexico, Morelos, Puebla and Tlaxcala contributed almost 66 percent of the total participants (MLSW, 2005). In my sample, the same six states contributed 70 percent (*Table 6.2*).

Table 6.2 State of Origin of Mexican migrants participating in CSAWP

State	Total 2005 Number *	(%)	Own Survey 2006[51] Number **	(%)
Aguascalientes	11	(0.1)	0	(0)
Baja California Sur	21	(0.2)	0	(0)
Campeche	64	(0.6)	4	(1.6)
Coahuila	75	(0.7)	8	(3.1)
Colima	21	(0.2)	0	(0)
Chiapas	161	(1.5)	4	(1.6)
Chihuahua	11	(0.1)	0	(0)
Mexico City	257	(2.4)	5	(1.9)
Durango	161	(1.5)	0	(0)
Guanajuato	**771**	**(7.2)**	**22**	**(8.6)**
Guerrero	75	(0.7)	0	(0)
Hidalgo	**642**	**(6.0)**	**17**	**(6.6)**
Jalisco	182	(1.7)	2	(0.8)
Mexico (State of)	**2,463**	**(23)**	**60**	**(23.4)**
Michoacan	471	(4.4)	10	(3.9)
Morelos	**707**	**(6.6)**	**15**	**(5.8)**
Nayarit	118	(1.1)	5	(1.9)
Nuevo Leon	11	(0.1)	0	(0)
Oaxaca	525	(4.9)	8	(3.1)
Puebla	**750**	**(6.9)**	**33**	**(12.8)**
Queretaro	54	(0.5)	3	(1.2)
Quintana Roo	32	(0.3)	0	(0)
San Luis Potosi	246	(2.3)	4	(1.6)
Sinaloa	139	(1.3)	0	(0)
Sonora	64	(0.6)	0	(0)
Tabasco	107	(1)	3	(1.2)
Tamaulipas	21	(0.2)	0	(0)
Tlaxcala	**1,713**	**(16)**	**33**	**(12.8)**
Veracruz	589	(5.5)	16	(6.2)
Yucatan	171	(1.6)	5	(1.9)
Zacatecas	75	(0.7)	0	(0)
Total	**10,708**	**(100)**	**257**	**(100)**

Source: MLSW, 2005; ** My own survey.

The percentages of participants in my survey follow the same pattern as the information from the MLSW. Based on both MLSW statistics and for my sample, the state of Mexico contributes more CSAWP workers than any other, accounting for more than one fifth of the total participants in the Program.

On the other hand, more than 80 percent of the respondents in my sample (*Table 6.3*) come from the Centre/Metropolitan, East-Centre and East-Gulf regions of Mexico

[51] Note that there are discrepancies in the information. The Mexican Consulate considers there to be 11,720 workers in Canada, with 7,341 of those in Ontario; the MLSW claims that 10,708 Mexican workers were sent to Canada in 2005. Considering all three numbers (11,720, 10,708 Mexican workers in Canada and 7,341 Mexican workers in Ontario), I calculated the minimum sample size to be 208, based on the figure of 7341 Mexican workers in Ontario. Therefore, I consider my actual sample size of 257 participants in the survey to be representative.

including Guanajuato, San Luis Potosi, Querétaro, State of Mexico, Mexico City, Morelos, Hidalgo, Puebla, Tlaxcala, Veracruz and Tabasco. Together, these states make up what will be called later Region 2 (REG2) (Appendix A.1).

The bulk of the respondents are between 30 and 39 years old; the youngest is 24 years old. This could be explained because one of the requirements to participate in the Program is that migrants must be married or in a common-law relationship and have dependent children[52] (97 percent of the interviewed migrants were either married or lived in a common-law relationship). On average, they have three to four children, with a range of ages from one month to 35 years old. From the total sample, 253 were male (98.4%) and only four were female (1.6%). Male respondents in the sample stated their spouses are economically dependent on them. In the case of the four women in the sample, they had children and parents (who are in charge of the children when they are in Canada) who depend on them.

The average schooling the respondents held is eight years. The highest level of education of most of the Mexican migrants was elementary school (47 percent). However, 78 respondents had completed technical or high school. Only two people had no formal education, and seven of these had completed at least the first year of a professional career. Roughly 36 percent had some knowledge of English, either written or spoken; this variable was measured by asking whether they could understand when their employer or someone in a store or on the street speaks to them. In addition, they were asked if they could read English: newspapers, for example, or other printed information.

[52] In the case of single people, they have to prove they have economically dependent relatives. There were no single men in my sample.

Some of the respondents interviewed in Simcoe answered that they have taken some classes in the Support Centre.

Table 6.3 Selected individual characteristics, 2006

Characteristic	Number of respondents	Percent	Mean
Sex			
Males	253	98.4	
Females	4	1.6	
Place of origin			
REG1: North-East and West	25	9.7	
REG2: Centre/Metropolitan area & East-Centre & Gulf	211	82.1	
REG3: South & Southeast	21	8.2	
Age	257		38.5
20-29	27	10.5	
30-39	119	46.3	
40-49	91	35.4	
50 and over	20	7.8	
Years of schooling*			7.9
Elementary school	120	46.7	
Secondary school	50	19.5	
High school	78	30.4	
Professional (Univ. or Technical Inst.)	7	2.7	
English skills			
Read basic Yes=1	92	35.8	
Speak basic Yes=1	94	36.6	

*In Mexico, education is divided into three levels: elementary school (6 years), secondary school (3 years) and high school (3 years).

Most of the respondents (78%) were engaged in agriculture in Mexico, followed by construction (29%) and commerce (13%) where people sell products in local markets (*Table 6.4*). Note that the total share does not add up to 100 percent since workers may perform more than one activity.

On average, the respondents had been participating in CSAWP for almost eight consecutive seasons. A total of 123 people had been participating between five to 10 years. Only two people in the sample had participated in the Program for 21 consecutive years. The frequency of visits was very high: 81 percent (208 out of 257) of the respondents had come every year since their first year of participation. Of the remaining 19 percent, seven percent first came in 2006 and 12 percent took a break of one or two years but had returned to participate in the Program again.

Only 46 out of 257 had worked in the US; nine of these had gone to the US with a work permit:

> "Once I went to the US but only to see how is there; because a lot of people from my city went to the US and when they go back, they tell us a lot of good stories and that you can make a lot of money and live better than in Mexico (pause)..., but I realized that yeah you can earn good money but you spend a lot too, and at the end of the day you have little money and I could not send to my mother, that time I was single." (Toño, male, 32 years old)

Table 6.4 Additional selected individual characteristics, 2006

Characteristic	Number of respondents	Percent	Mean
Occupation in Mexico			
Agriculture	202	78.6	
Construction	29	11.3	
Commerce	13	5.1	
Industry/Manufacturing	6	3.2	
Others	7	2.7	
Years of migrating to Canada	257		
Average			7.8
Less than 5 seasons	59	23.0	
From 5 to 10 seasons	123	47.9	
More than 10 seasons	75	29.1	
US experience			
Yes	46		
With work permit	9		

Regarding the socio-demographic characteristics of the migrants' household (*Table 6.5*), the average age of their spouses was 35 years old. Most had only an elementary level of schooling. The principal occupation of respondents' spouses was taking care of the house and the children (96%). If the respondent had a farm, their spouse generally also helped with agricultural work while the migrant was working in Canada. Some spouses worked outside the house as domestics, nurses or teachers or in commerce activities. Only 74 respondents declared that their spouse had a second occupation that principally consisted of helping in agricultural activities. All respondents declared their spouses depended on them economically.

Table 6.5 Selected household characteristics of migrants to Canada: spousal age and education, 2006

Characteristic	Number of Respondents	%	Mean
Spouse	253		
Age			35.2
16 – 29	68	26.9	
30 – 39	120	47.4	
40 and over	65	25.7	
Education	254		
Average			6.8
Elementary school	161	63.6	
Secondary school	59	23.3	
High school	20	7.9	
Professional (Univ. or Technical Inst.)	7	2.8	

Generally, the children of respondents had more education than their parents: 342 had either completed elementary school or less (49.35%), 297 had finished at least one grade of secondary school or some higher schooling level (42.86%) and 54 (7.79%) were studying at university or were teachers or had a technical career. Most respondents have children who were economically dependent on them, driving them to look for alternative income sources to pay for their necessities (*Table 6.6*). The mean number of children was 3.6 and ranged from one to eight.

Table 6.6 Selected household characteristics of migrants to Canada: children, 2006

Characteristic	Number of Respondents	%	Mean
Children			
Average number			3.6
Average age (years)			12.1
Average level of education (years of schooling)			6.3
Economically dependent children			
Average (number)			3.2
Less than 2 children	33	12.8	
Between 2 and 4 children	174	67.7	
More than 4 children	50	19.5	

Few of the respondents interviewed were still living with their parents or a relative *(Table 6.7)*. From the total sample (257), only 13 people were living with a relative. All of these were relatively new in the Program and had been coming to Canada for less than five years. Most of respondents had their own house. Those respondents who have been

participating in the Program for more than six years all own their homes. After the first year of participation, the majority of the respondents realized how much they could earn. They calculated how much they would earn the next season and therefore planned their expenses in terms of housing or land to build a house in the near future:

> *"We know how many years we need to come in order to build our houses in Mexico. For example in my case, the first two years of coming was to ensure my family's daily consumption. Meanwhile my wife and I were living with my in laws. The earnings of the third year were to buy a plot of land; with my earnings in the fourth year I could build my own house that is very similar, by the way, to the one we live in here. I have a complete tiled bathroom and the kitchen is tiled too. It has a gable roof; it is nice and big." (Ernesto, male 35 years old)*

Table 6.7 Selected household characteristics of migrants to Canada: property, 2006

Characteristic	Number of Respondents	%
Home Property		
Own	239	93
Living with Relatives	13	5
Renting	4	1.6
Paying mortgage	1	0.4

Sixty-five percent of the individuals in the sample operate a farm in Mexico (*Table 6.8*). The size of land they work averages 6.4 hectares, ranging from cero to 51 hectares (detailed information on land and tenure is in Chapter 7, Section 7.3.4).

From the total of respondents who ran a farm in Mexico (167), 82 percent (137 people) sold their products mainly in local markets, obtaining an average cash income of C$1,907 per year (*Table 6.9*). A portion of the crops they grew was consumed and a portion was sold, except in the case of one producer of flowers, who sold his entire harvest (*Table 6.8*). Fruits and vegetables accounted for 80 percent of products sold; animals, 66 percent; other grains like oats and fodder-oats, 60 percent; beans, 30 percent; and maize, 21 percent.

Table 6.8 Selected household characteristics of migrants to Canada: farming, 2006

Characteristic	Number of Respondents	%	Mean
Operate a Farm in Mexico Yes=1	167	65	
Own Land	166		6.4
Less than 5 ha	100	60.2	ha*
Between 5 and 10 ha	29	17.5	
More than 10 ha	37	22.3	
Product sold			
Flowers		100	
Fruits		83	
Vegetables		80	
Animals		66	
Other grains (oats, fodder-oats)		60	
Bean		30	
Maize		21	

*Hectares

While respondents were in Mexico, they also worked in activities not related to agriculture, 145 respondents declared an average income of C$1,067 per year.[53] Therefore, the total average income earned in Mexico performing farm and/or non-farm activities averaged C$2,083 per year, representing 18 percent of the total household income.[54] Total income included remittances plus the expenses incurred in Canada to support themselves, which on average represented around 28 percent of the total Canadian income (C$2,680).

Table 6.9 Selected household characteristics of migrants to Canada: income, 2006

Characteristic	Number of Respondents	%	Mean C$	Min C$	Max C$
Income (per year/season)					
Canadian income:					
Net income (1)	**257**		**9,338.7**	2,900	14,500
From remittances	257		6,657.1	2,160	11,600
Mexican income:					
Net Mexican Income (average) (2)	**257**		**2,083.7**	0.0	10,000
Farm cash income	137	82	1,907	0.0	10,000
From other sources	145	56	1,067	0.0	9,000
Average Net Household Income for the total sample (1)+(2)	**257**		**11,422.4**	4,400	23,000

[53] Only18 people reported that they did not earn any income in Mexico, saying they did not find any paid jobs in their community or in other parts of Mexico.

[54] Household income will vary according to the activity performed in Mexico; those who rely only on agriculture earn C$11,245, while those who do not sell their farm products but perform some activity in the non-farm sector earn C$10,405 per year.

6.4 Motivations to participate in CSAWP

Based on previous studies and on the personal in-depth interviews, motivations for migration can be divided into four main groups. The first is economic factors (as per studies such as Taylor, 1987; Stark and Taylor, 1989; Escobar-Latapí, 1999; Massey and Espinosa, 1997; Binford, 2002; Zarate-Hoyos, 2003). My survey asked respondents to rate the importance of two possible reasons in this category: "To earn more income" and "Because of low wages in Mexico" (*Table 6.10*). The second category is the desire to improve the standard of living of the migrant's family and invest in human capital (similar studies have reported these motivations, including Stark, 1991; Taylor and Yunez-Naude, 2002; Binford, 2002; Zarate, 2003). Respondents were asked to rate the importance of three possible reasons in this category: "To enhance my family's standard of living," "To improve my house" and "To put my children through school" (*Table 6.10*). The third group is job uncertainty and lack of jobs in Mexico (as stated by Garcia, 2003). Respondents were asked to rate the importance of one reason in this category: "To earn a stable income" (*Table 6.10*). The fourth group □ocuses on network migration (as per studies such as Roberts *et al.*, 1999; Yunez-Naude, 2001; Massey and Garcia España, 1987) Respondents were asked to rate the importance of one reason in this category: 'For experiences of others that work in Canada'[55] (*Table 6.10*).

In view of the objectives of this study, I added a fifth group that considered desires to invest in farming activities in Mexico along with investments in activities outside of agriculture. Respondents were asked to rate the importance of three reasons: "To invest in

[55] This item encompasses both existing networks in Canada and word of mouth or direct experiences of migrating to the US. The actual question posed was, 'Are you in the Program because a friend or a relative suggested you to do it? If so, how important was that suggestion for you to participate in the Program?

my farm," "To invest in new business opportunities" and "To learn new skills" (*Table 6.10*).

Items from the first three groups along with the fifth group are expected to be the most important reasons for respondents to participate into the Program. Items in the fourth group are expected not to be significant because there are not strong migration networks with Canada compared with the US.

6.5 Quantitative analysis

Most empirical analyses of Mexican migration, such as Massey (1987), Sana and Massey (2005), Taylor (1999), Taylor and Yunez-Naude (1999), Binford (2002) and Durand, Parrado and Massey (1996), have used either logit or probit[56] models to identify the motivations of respondents to migrate. Most of these surveys were conducted in the migrants' place of origin, and hence they had two populations: those who migrated and those who decided[57] to stay home. Thus, the researchers could distinguish between people's reasons to migrate and/or to stay in their place of origin. The objective of these studies was to find the determinants of migration and explore why some people migrate and others do not. Since researchers had the opportunity to examine household units with and without migrants, they were able to distinguish the characteristics of each interviewee.

Unlike these studies, my own survey was conducted at the destination of the agricultural Mexican migrant workers (Southern Ontario). Therefore, all the participants had already made the decision to participate and migrate. Thus, the question posed was

[56] Logit and probit models in these cases take only two possible values: 1 or 0. One is used when the event occurs (migration, for example) and 0 when the event does not occur (the person did not migrate, to continue the example).
[57] Or had no migration options.

what reasons were considered at the time they decided to participate in CSAWP and come to Canada. Twelve reasons to do this were gathered in the survey. In order to know why Mexican respondents decided to migrate to Canada, multi-item statements with a 5-point Likert scale[58] ranging from "very unimportant" (1) to "very important" (5) were used to measure the importance of each of those 12 statements/reasons.

Table 6.10 and *Figure 6.1* show the reasons ranked by respondents as most important in their decision to migrate were "to earn more income," "to enhance their family's standard of living," "because of low wages in Mexico," "to earn a stable income," "to send their children to the school" and "to improve their houses" (or, in some cases, to start building their own house). This suggests that the decision to migrate is significantly determined by a combination of both the economic situation in Mexico and the need to pay for their children's education and enhance household welfare. Similar results were found by Garcia (2003) who states lack of jobs in Mexico, the Mexican economic crisis and NAFTA convinced Mexicans to migrate to US. Other researchers found similar results: Binford *et al.* (2004) for the case of migration to Canada and Mohan (1980) and Fields (1982) for the case of Colombian migration. In all three studies, the main factors driving migration decisions were wage differentials and a high unemployment rate at home.

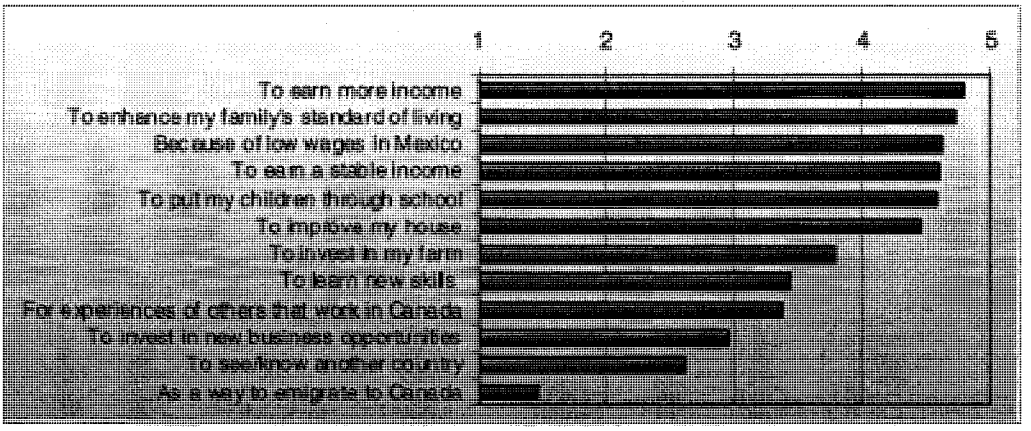
[58] The Likert scale's invention is attributed to Rensis Likert (1931), who described this technique for the assessment of attitudes and opinions. Typically, they are instructed to select one of five responses: strongly agree, agree, undecided, disagree, or strongly disagree. There is no "right" answer, unlike a multiple-choice test.

Table 6.10 Mean importance scores in ascending[59] order for reasons influencing decisions to participate in CSAWP

Factor	Mean Score*	Standard deviation
1 To earn more income	4.789[a]	0.426
2 To enhance my family's standard of living	4.719[a]	0.466
3 Because of low wages in Mexico	4.618[a]	0.595
4 To earn a stable income	4.595	0.537
5 To put my children through school	4.576[b]	0.915
6 To improve my house	4.451[b]	1.018
7 To invest in my farm	3.778[c]	1.323
8 To learn new skills	3.436[c]	1.157
9 For experiences of others that work in Canada	3.358	1.226
10 To invest in new business opportunities	2.942[c]	1.492
11 To see/know another country	2.626	1.104
12 As a way to emigrate to Canada	1.459	0.943

*Values close to five indicate the factor is very important, while values and close to one indicate the factor is very unimportant. Items denoted by the same letter are not significantly different from each other at the 5% level based on Wilcoxon sign-rank test.

Figure 6.1 Motivations for participation in CSAWP (Mean score)



Desires to invest in farm activities – whether to start a farm business or to buy a plot of land as a real state investment – also played an important role in determining the decisions to migrate.[60] Reasons like "to learn new skills," "the experiences of others in Canada" "to invest in new business opportunities" and "to see another country" were, on average, ranked as neither important nor unimportant. This suggests that migration

[59] From 1=very unimportant to 5=very important reason to participate in CSAWP.

[60] Reichert (1981) did extensive research in Guadalupe, Michoacán where he divided the population into three categories: legal migrants, illegal migrants and no migrants. Legal migrants represent only 18 percent of the population in the community, but they own roughly 60 percent of the agricultural land. This shows that migrants' remittances were allocated to buying land as a future investment.

networks[61] in Canada did not play an important role for respondents in their decision to migrate. This result is very different to what other authors have concluded on Mexican migration to the US; most studies have considered that previous and present migration from the family or the village generates information as well as a social network, which facilitates the migrant's job search (Roberts *et al.*, 1999; Massey and García España, 1987). Finally, participation in CSAWP as a way to stay in Canada was ranked on average as very unimportant (193 out of 257 rated it as very unimportant), which means that most of respondents had no desire to stay in Canada permanently, they just wanted to participate in CSAWP for temporary work.

To organize the main reasons for participating in CSAWP (and thus migrating to Canada), factor analysis[62] was employed. Using this approach, reasons to migrate are defined as "items." The issue now is to know which items to include in the set of motivations to participate in the Program. Factor analysis is used to identify which items to include in the factor score. Twelve reasons listed in *Table 6.10* were included in the factor analysis. Results indicated that only eight reasons should be included in the factor score. Although four factors had eigenvalues exceeding one when extracting principal components derived from varimax[63] rotation, only three will be considered as the Cronbach Alpha among the items loaded in the fourth factor (0.63) is less than the normal cut-off of 0.70. The index of Kaiser-Meyer-Olkin (KMO) was 0.66, suggesting that the factor analysis technique is appropriate. Similarly, the Bartlett's test of sphericity (621.1,

[61] The literal question was: "Did you participate in the Program and come to Canada because a friend of you suggested you to do so?"

[62] Factor analysis is a way of identifying patterns in data and expressing the data in such a way as to highlight their similarities and differences. The main advantage of factor analysis is that once these patterns are found in the data, and the data is therefore compressed, i.e. by reducing the number of dimensions, the model can be explained using this pattern without much loss of information (Hair *et al.*, 1998).

[63] This is a type of rotation called variance maximizing or "varimax." The goal is to maximize the variance of the new variable (factor), while minimizing the variance around the new factor.

with 45 degree of freedom) indicates that the correlation matrix between the 10 items listed above does not conform an identity matrix; hence, factor analysis is suitable.

Table 6.11 shows the three components loading eight out of the twelve reasons listed above.[64] These three factors together explain 70 percent of the total variance across the sample. Items 9 through 12 were omitted from the multi-item scale for the purpose of validation.

Table 6.11 Factor loadings for reasons to migrate to Canada through CSAWP, derived from varimax rotation

Reason for participating in CSAWP	Factor 1	Factor 2	Factor 3
Because of low wages in Mexico (or no jobs)	**.82**	-.115	.071
To earn more income	**.76**	.042	.075
To earn a stable income	**.76**	.196	-.117
To enhance my family's standard of living	**.69**	.032	.075
To invest in my farm	.060	**.91**	-.059
To learn new skills	.045	**.90**	.179
To put my children through school	.040	.000	**.86**
To improve my house	.056	.101	**.85**
Proportion of variation explained (%)	30.0	22.5	18.1

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization – a Rotation converged in 5 iterations.

Based on these three loadings, the factors were interpreted as follows:

- **Factor 1**: The reasons that loaded most heavily on this factor are those related with earning more income and having a more stable income. This factor could be labelled *household livelihood/welfare* and it is – as expected – one of the most important factors when considering migration as one alternative to alleviate household poverty, especially when there is a lack of job opportunities in Mexico or when the jobs that are available are poorly paid. This factor share is 28.4 percent of the total.
- **Factor 2**: The reasons loaded on this factor are related to desires to capitalize (with money and knowledge) the respondent's farm back in Mexico; therefore, this relates to

[64] Reasons such as "as a way to stay in Canada" and "for experience of others that have worked in Canada" were not rated as important enough to be loaded in any factor.

on-farm capital. It is interesting to note that the desire to invest in the farm in Mexico is a reason to participate in the Program,[65] verifying one of the study's a priori hypotheses. Respondents were clearly driven by their desire to buy plots of land and also to learn new skills[66] while they are working in Canada.

- **Factor 3**: The two reasons loaded on this factor are related to *investment in social capital of the household,* where respondents participate in the Program in order to send their children to school and/or improve their houses.

In general, there is no one single reason to participate in CSAWP, and thus migrate to Canada, but a range of reasons that any worker takes into consideration. Nor does the migration decision seem to be taken in isolation from other household members; on the contrary, the reasons ranked highly by the respondents in the sample suggest that the deciding unit is not the migrant alone but the household unit as a whole. For example, desires to send children to school was heavily loaded in Factor 3, indicating that the migrant is not thinking of his or her own individual benefit but the family's welfare.

Cronbach's Alpha test was also employed to measure how well each individual item in a scale correlates with the sum of the remaining items. It measures consistency among individual items in a scale. The results in *Table 6.12* show that each multi-item scale is an acceptable measure of the underlying factors.[67]

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[65] In the next chapter, I assess the impact of remittances on farm investments in Mexico.

[66] Seventy-eight percent (202) of the respondents said they have learned new agricultural skills while working in Canada; out of this number, only 30% agreed the skills they learned are useful in Mexico. The rest of respondents stated they could not transfer the new skills mainly because in Mexico there is no adequate technology (tractors) for putting these skills to work. Other reasons included the lack of greenhouses in Mexico and the high cost to construct one, or the fact that the weather is unsuitable for growing fruits or vegetables.

[67] The widely accepted social science cut-off is that alpha should be 0.70 or higher for a set of items to be considered a scale. However there is no unanimous agreement among Scientifics and professional on the minimum adequate and acceptable value. Landero Hernandez (2006) states that "rather than considering Cronbach's Alpha as static and definite reliability tool, it can be conceived as a value of use depending on

Table 6.12 Reliability of instrument used to identify motivations to participate in CSAWP

Reasons to migrate to Canada loaded in each factor	Internal reliability Cronbach's Alpha
(Factor 2) Investment in on-farm capital	79%
(Factor 1) Household livelihood/welfare	76%
(Factor 3) Investment in social capital	68%

From these three factors, multi-item scales were built based on heavy loading items for each factor in order to identify the relative importance of each factor in migration decision through a regression model.

6.5.1 Regression model

As socio-demographic characteristics play an important role in migration decisions, three regression models were performed using the Iterative Seemingly Unrelated (ISUR) method,[68] considering as a dependent variable the multi-item scale means for each of the three motivation factors and as independent variables the socio-demographic characteristics with the goal of identifying the relationships between them. The standard least squares approach to regression problems is based on the model where y denotes the dependent variable, x denotes de independent variables, ß denotes the parameters to be estimated, and e denotes an error term. This standard approach assumes nothing about ß. However, it makes moderately strong assumptions regarding the error term e. The error term is assumed independent normal with mean zero. The error variance, σ^2, is unknown. Due to problem of omitted variables, system of equations was adapted and an important feature of these system estimation problems is that the errors in [6.1] are often correlated,

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the purposes to which the instrument was designed. For instance, Rosenthal (1994) has suggested for the purposes of investigation, using a minimum reliability of 0.50 and 0.90 when it is necessary to make decisions over people's lives (in health studies) with information derived from the instruments of measure. Therefore, a Cronbach's Alpha value as low as 0.6 might be acceptable for studies in which this technique was not tested before, as those psychological test are well know such as Anxiety test by Martens, Vealey and Burton (1990)" (my translation from p.156). On the other hand, as far as I know this is the first time that this technique has been used for this purpose.

[68] ISUR will account for correlation of errors across the equations. This approach is appropriate for

not across observations, but across the equations in the system[69]. The ISUR method has been specialized to the estimation of systems where errors are correlated across equations and it is useful in cross data and panel models (Zellner, 1962).

Table 6.13 summarizes the hypothetical sign of each relationship based on previous studies. The specification of the model and the construction of the variables are as follows:

$$Y_{ji} = \alpha_j + \sum \beta_{jn} * X_{ni} + e_{ji}; \qquad \textbf{[6.1]}$$

$\forall$ j=1,...,3 average of items heavily loaded in each factor; i=1,...,257 individuals in the sample and n=1,...,23 exogenous variables (See Appendix A for all variable descriptions).

Where:

$Y_{j=1}$ = Household livelihood factor (average of heavily loaded items in factor one)

$Y_{j=2}$ = On-farm capital factor (average of heavily loaded items in factor two)

$Y_{j=3}$ = Investment in social capital factor (average of heavily loaded items in factor three)

X_n is a matrix of n=23 exogenous socio-demographic characteristics variables listed below.[70]

A_j and $ß_{jn}$ = coefficients for the intercept and the exogenous variables.

Hence, the regression model to be estimated is as follow:

$$\begin{aligned} Y_{ji} = {} & \alpha_j + \beta_{jn} REG1_i + \beta_{jn} REG3_i + \beta_{jn} AG1_i + \beta_{jn} AG3_i + \beta_{jn} AG4_i + \beta j_n AGE1_i + \\ & \beta_{jn} AGE3_i + \beta_{jn} CS_i + \beta_{jn} EDUC2_i + \beta_{jn} EDUC3_i + \beta_{jn} EDUC4_i + \\ & \beta_{jn} EDUCS1_i + \beta_{jn} SpDep_i + \beta_{jn} Child1_i + \beta_{jn} Child3_i + \beta_{jn} SBE_i + \beta_{jn} RBE_i + \\ & \beta_{jn} USM_i + \beta_{jn} YCAN1_i + \beta_{jn} YCAN3_i + \beta_{jn} CNSTR_i + \beta_{jn} COMM_i + \beta_{jn} OpF_i + e_{ji} \end{aligned} \qquad \textbf{[6.2]}$$

In order to avoid perfect multicollinearity, one dummy variable from each set of dummies is not coded or considered as a part of the model.[71] The category that is not coded is one to which all other categories will be compared. As such, the biggest group[72] will often be the not-coded category. For example, REG2 is the region from which the greatest number of respondents comes (86%) central part of Mexico, so REG2 serves as the not-coded group. In this case, the coefficients of variables REG1 (north) and REG3

[69] The correlation coefficient in [6.1] was 0.91.

[70] Exogenous variables were tested for multicollinearity. The correlations were not highly significant among them.

[71] These omitted variables play the role of the control variable in the corresponding equation.

[72] The decision as to which category is not coded is often arbitrary.

(South) will show the effect of coming from these two regions rather than coming from REG2 with the motivation factor (one to three) in question.

Table 6.13 Definition of the 23 exogenous variables and expected nature of coefficients

Variable definition	Type	Respondents	Hypothesized nature of coefficient		
			HHW[1]	Onfarm[2]	Inv.Soc.Cap[3]
Region					
REG1: Coahuila, Nuevo Leon, Tamaulipas, Jalisco, Nayarit, Colima and Michoacan.		25	(+)	(+)	(+)
REG2:[C] Aguascalientes, Guanajuato, San Luis Potosi, Queretaro, State of Mexico, D.F., Morelos, Hidalgo, Puebla, Tlaxcala, Veracruz and Tabasco.	Dummy	211			
REG3: Guerrero, Oaxaca, Chiapas, Campeche, Quintana Roo and Yucatan		21	(+)	(+)	(+)
Age					
Respondent's age					
AG1 between 20 and 29		27	(+)		
AG2 [C] between 30 and 39		119		(+)	(+)
AG3 between 40 and 49		91	(+)		
AG4 50 years and over		20	(-)	(+)	(+)
Spouse's age	Dummy			(-)	(-)
AGE1 between 16 and 29					
AGE2 [C] between 30 and 39		68	(+)	(+)	(+)
AGE3 40 and over		120			
		65	(-)	(+)	(+)
Marital Status MS=1 married	Dummy	253	(+)	(+)	(+)
Education					
Worker's education					
EDUC1 [C] with elementary school					
EDUC2 with secondary school *	Dummy	120			
EDUC3 with high school *		50	(+/-)	(+/-)	(+/-)
EDUC4 more than high school		78	(+/-)	(+/-)	(+/-)
Spouse's education		7	(+/-)	(-)	(+/-)
EDUCS=1if educated					
		247	(+)	(+/-)	(+)
Economic Dependents					
Spouse (SpDp)=1 Yes					
Children		247	(+)	(+)	(-)
Child1 fewer than 2 children	Dummy				
Child2 [C] between 2 and 4 children		33	(+)	(-)	(+)
Child3 more than 4 children		174			
		50	(+)	(+)	(+)
English skills					
Speak Basic English (SBE) = 1 yes	Dummy	94	(-)	(+ / -)	(+ / -)
Read Basic English (RBS) = 1 yes		92	(-)	(+ / -)	(+ / -)
Worker's US migration experience USM =1 yes	Dummy	46	(+)	(-)	(+)
Years working in Canada through CSAWP (Ycan)					
Ycan1: Less than 5 seasons	Dummy				
Ycan2: [C] From 5 to10 seasons		59	(+)	(+)	(+)
Ycan3: More than 10 seasons		123			
		75	(-)	(+)	(+)
Occupation in Mexico					
AGR [C] = 1 yes	Dummy	202			
CNSTR = 1 yes		35	(+)	(+)	(+)
COMM = 1 yes		13	(-)	(-)	(-)
Operate Farm in Mex. OpF =1 yes	Dummy	167	(+)	(+)	(+/-)

[C] Denotes the control variable. [1] Household welfare dependent variable. [2] On-farm business dependent variable. [3] Investment in social capital dependent variable. Source: Own survey, 2006.

Aqui Similarly, the following dummy variables were not coded and not considered in the three regressions: AG2 and Age2 (age of both the interviewee and his spouse ranging from 30 to 39 years old); EDUC1 (education level of the interviewee: elementary school); Child2 (if there are between two to four dependent children); Ycan2 (if the participant has been coming between five to ten years/seasons) and AGR (if the respondent works in the agriculture sector).

Before proceeding, it is useful to explain the exogenous variables in the three regressions within the context of the outcomes and the control variables that are hypothesized by theory and previous studies (Mora, 2005; Taylor, 1999; Mohan, 1980; Fields, 1982; among others). The expected sign between regions (REG1 and REG3) and the set of three motivations is positive relative to those coming from REG2. The strength of the motivating factors is expected to be equal, as all respondents have stated they want to improve not only their economic prosperity but also improving prospects for their children and the household in general, either by making more money or by investing for their future. However, it is expected that migrants coming from REG3 are more motivated than those in REG2 since areas in the South of Mexico (REG3) are poorer than in the other two regions.

Interviewee age (AG1 and AG3) is expected to be positively related with the three sets of motivations relative to those in the range of AG2. Older people (AG4) are generally expected to be less motivated, relative to those in AG2, for migrating attracted by "*household livelihood*" factor for their children are old enough to look for themselves and because respondents in this range of age could have already covered their basic needs with the income earned in previous years. Older people are inversely correlated with

migration in general, since younger people expect higher lifetime returns from migration (Stark and Taylor, 1989). Similarly, spousal age (AGE1 and AGE3) is expected to be positively correlated with the three motivating factors relative to those spouses in the range of AGE2. This situation can be explained by the fact that when workers are beginning their families, the number of consumers within the household is high relative to the number of workers, and so the migrant and his-her partner are willing to work off-farm and abroad in order to earn a better income to support the children compared to those spouses who are in the AG2 range of age. However, it could be also possible to expect that older spouses (AG3) are less eager for their husband migration relative to those in AG2 because *"household livelihood"* factor for they have covered their basic needs and their children are adults.

The relationship between the level of education (EDUC2, EDUC3 and EDUC4 relative to those with EDUC1) and migration motivations is ambiguous. Some authors (Taylor and Yunez-Naude, 1999) argue that a positive relationship should exist between migration and education, since people with more years of schooling are more likely to obtain better employment and earning opportunities in the destination areas relative to those with elementary school (EDUC1). On the other hand, it can be the case that unskilled respondents are better paid in the foreign country, and in this case the less educated they are, the more likely they are to migrate and vice versa: the more educated the people are, the less willing they are to accept unskilled jobs.[73] In that case, a negative sign is expected between EDUC4 with the *on-farm* factor is expected relative to those with EDUC1. The same would apply to English skills (SBE and RBE).

[73] In the US and in Canada the probability of finding a job is higher in low-skilled areas such as agriculture and construction.

Regarding the number of dependents the worker has (Child1: less than one kid or Child3: more than four children), the relationship of Child1 with the factor one and three is expected to be positive and with factor two (on-farm capital) negative relative to Child2. Contrarily, the expected sign with Child3 is positive with on-farm capital factor because the more children the respondent has the more he/she can count on them to work in the farm. In addition, the more economic dependents a worker has, the more necessity he or she will feel to migrate addressed by "*household livelihood*" and "*non-farm capital*" relative to those respondents with two to four children in Mexico (Rozelle *et al.*, 1999).The correlation expected between having worked in US (USM) and participating in CSAWP is unclear. A positive sign is expected with factor one (*household livelihood*) and three (invest in social capital). However as respondents had migrated to the US before participating in the Program, and so they have spent time in the US, they are less likely to farm in Mexico; therefore it is assumed they are not engaged in farming, so the expected sign with factor two (on-farm capital) is negative.

To determine the relationship of the three factors with the Canadian experience (Ycan) that respondents acquired through participating in the Program, this variable was divided into three dummies based on the amount of time spent working in Canada: for less than five years (Ycan1), between five and 10 (Ycan2), and more than 10 seasons (Ycan3). The dummy variable Ycan2 was the control variable so that coefficients of Ycan1 and Ycan3 were read with respect to Ycan2. It is expected that the less seasons the worker had been coming (Ycan1), the more he/she is willing to participate in the Program and return to Canada, driven by all three sets of motivations relative to those who has been coming between five to ten seasons. This is because younger respondents in the

Program are more eager to earn money and invest in on-farm and off-farm businesses. The coefficient of Ycan1 is expected to be higher than Ycan3, since those who have more years participating in the Program are less eager to do so addressed by *"household livelihood"* relative to those coming for five to ten years (Mora, 2005; Verduzco, 2000). Therefore, the expected sign of Ycan3 with factor one is negative because respondents coming for more than 10 seasons had already covered their basic needs and therefore are less attracted by *"household livelihood"* than those coming between five and 10 seasons (Ycan2). In addition, the fact that respondents have been coming for more than 10 years could also reflect the fact that a good relationship emerged between employer and employee:

> *"I have been coming for 21 years and in recent years my boss has given me lots of gifts for me and my family, especially for my grandchildren. He also gives me packages of flower seeds as gifts for my wife. For several years I have not been a regular worker here; I am in charge of the store he has on the farm and I check the quality of the products. I could buy 40 or 50 hectares with the income earned here, my old lady and my sons work the land there, even though we do not need it but it is my wife's life to have her animals for everywhere; I am happy coming here and my family is too for having all the gifts and the money." (Horacio, male 60 years old)*

Working in construction (CNSTR) is expected to be positively correlated with the three factors. All respondents participating in the construction sector in Mexico are more eager to participate in CSAWP because their yearly average income is less than that in agriculture (C$1,719 versus C$1,907[74]). On the other hand, working in commerce (COMM) is expected to be negatively correlated with factors one through three. People working in the commerce would be less eager than agricultural workers (AGR) to

[74] Based on my survey, I obtained average income information categorized by sector. Figures consider only people who obtained some amount of income performing an economic activity and omit those people who reported earning no income. For instance, the average agriculture income of C$1,907 includes only those people who make money working in this activity; hence although there are 202 people who performed an agricultural activity, only 137 reported earning income from it.

participate in CSAWP because their yearly average income is higher than in agriculture (C$3,907 versus C$1,907). In contrast, respondents who operate a farm in Mexico (OpF) would be positively attracted by factor two and less so by the other factors, as one can expect they would be more interested in enhancing their farm.

The results using the Iterative Seemingly Unrelated (ISUR) are summarized in *Table 6.14*, which also includes *t statistics* results on the significance of coefficients and the R^2 for each equation. Interpretation of results is based on statistical significance at levels of 1, 5 and 10 percent.

It can be observed that respondents coming from Southern Mexico (REG3) are more motivated by "*household livelihood factor*" in comparison with those coming from the centre of the country (REG2) at the one percent significance level. This could be because economic conditions on Region 3 are worse than in Region 2 and people from those areas are more eager to have employment and a stable income than those who are geographically close to Mexico City where there are comparatively more employment opportunities.

Based on the estimated coefficient for the age variable (AG1), respondents in the range of 20 to 29 years old are more motivated to participate in CSAWP for *"household livelihood"* factor at the one percent significance level relative to those respondents in the range of 30 to 39 years old. This could be explained by the fact that the majority of people (96%) between 20 and 29 years old have less than five hectares of land in Mexico and a yearly income of less than C$500. Therefore, running a farm of this size could force them to look for an alternative source of income, as the profits are not enough to

cover basic household needs. Respondents in this age range are also motivated by "*on-farm capital*", as they would like to learn new farm skills.

Table 6.14 Demographic characteristics and motivations to participate in CSAWP

Variable	Household Livelihood ♠	On-Farm Capital ♠	Inv.Soc.Cap ♠
Constant	5.0177	1.9666	2.304
	(11.78)***	3.76***	5.05***
Region of origin REG1	-0.018538	-0.112	0.07
	(-0.23)	-1.14	0.81
REG3	0.238713	0.09	0.05
	2.63***	0.84	0.55
Interviewee's age			
AG1 D=1 20-29 years	0.2511	0.3167	-0.1354
	2.37***	2.44***	-1.19
AG3 D=1 40 – 49 years	-0.1571	0.0442	0.0037
	-2.55***	0.58	0.05
AG4 D=1 over 49 years	-0.2266	0.195815	-0.050
	-1.88**	1.34	-0.38
Spouse's age			
Age1 Spouse D=1 16-29	0.288734	0.0094	-0.118
	4.05***	0.11	-1.55
Age3 Spouse D=1 40 and over	-0.1302	-0.036	-0.004
	-1.79**	-0.41	-0.05
Marital status D=1 has partner	0.029445	0.1348	-0.002
	0.073	0.27	-0.004
Interviewee's education			
EDUC2 D=1 secondary *	0.084575	-0.031	-0.06
	1.31	-0.39	-0.95
EDUC3 D=1 high school *	0.0712	-0.1242	-0.10
	0.99	-1.42	-1.38
EDUC4 D=1 professional	-0.1399	-0.4007	0.007
	-0.88	-2.05***	0.046
Spouse's education	0.265067	0.464	0.106
EDUCS D =1 educated	1.69*	2.40***	0.63
Economic dependents			
Spouse (SpDp)	-0.049384	-0.0305	-0.006
	-0.28	-0.14	-0.03
Child1 D=1 less than 2 children	-0.0508	-0.2167	-0.12
	-0.68	-2.38***	-1.60*
Child3 D=1 more than 4 children	0.053084	0.166	-0.10
	0.87	2.22***	-1.53
English skills SBE	-0.070922	0.0228	0.007
	-1.26	0.33	0.12
RBE	0.134782	-0.055	0.105
	2.26***	-0.75	1.64*
US migration experience (USM)	0.039153	0.0675	-0.04
	0.62	0.87	-0.71
Ycan1: Less than 5 seasons	-0.0034	0.2232	0.27
	-0.05	2.61***	3.58***
Ycan3: More than 10 seasons	-0.139384	-0.105	-0.071
	-2.17***	-1.33	-1.03
Occupation in Mexico			
CNSTR	-0.0446	-0.1274	0.066
	-0.50	-1.17	0.69
COMM	0.202884	-0.049	-0.285
	1.66*	-0.33	-2.17**
Operate farm in Mexico (OpF)	-0.058673	-0.5547	0.07
	-0.70	-5.42***	0.85
R^2	**0.18**	**0.40**	**0.20**

♠ Endogenous variables are calculated as the mean of items loaded in each component. Coefficients are significant at levels of 1 percent (***), 5 percent (**) and 10 percent (*).Source: EVIEWS (V.4.0) statistical outcome.

In contrast, respondents over the age of 40 to 49 years old are less motivated to participate in CSAWP for *"household livelihood"* factor than respondents in the range of 30 to 39 years old. This situation could be because many respondents over 40 years old have been coming to Canada for 6 to 10 years (36%) and even more have been coming for than 10 years (56%), and therefore they may have already covered their basic family needs.

Migrants with a spouse between 16 and 29 years old (68 out of 253) are more motivated to improve the *"household livelihood"* than those with spouses between 30 and 39 years old at the 10 percent significance level. This may mean that the younger wives are interested in increasing the household livelihood through their husbands' income. Similarly, wives over 40 years old are less motivated by *"household livelihood"* factor than those wives in the range of 30 to 39 years old.

A high level of education on the part of the interviewee (EDUC4) is inversely correlated with on-farm capital motivations, relative to those who hold elementary school (EDUC1). This result means that migrants holding high levels of education are less attracted by work in Canada addressed in turn for *on farm capital* factor because they are less interested in buying plots of land back in Mexico than migrants with an elementary level of education. This result agrees with the findings of other authors such as Taylor and Yunez-Naude (2002), OSSREA (2007), Taylor (1987), Stark and Taylor (1989), and Massey and Espinosa (1997), who state that more educated farmers are less likely to be involved in on-farm activities.

In addition, wives with elementary education (EDUCS) is positively correlated with motivation related to *"household livelihood"* and *"on-farm capital"* factors, which means

that they are more interested in performing farming activities than migrants with higher levels of schooling.

Those respondents who have fewer than two dependent children (Child1) are less motivated by on-farm capital reasons than those with two to four dependent children (Child2). Moreover, those with more than four dependent children (Child3) are more motivated by farm capital reasons relative to Child2; this could suggest that those migrants interested in farming activities can count on their numerous children to work the farm.

Those who *read basic English* (RBE) are motivated by "*household livelihood*" reasons because they are focussed simply on increasing their income, not investing it in farming. There did not seem to be any relationship between having worked in the United States (USM) before participating in CSAWP with any of the three sets of motivations to participate in the Program.

Respondents participating less than five seasons (Ycan1) are more motivated at the one percent significance level to come to Canada for "*on-farm capital*" reasons and the possibility of earning enough money to invest in "*social capital*" than those who have been coming for five to ten years (Ycan2). This shows, as expected, that new participants in the Program are coming to Canada with the idea of buying plots of land in Mexico with their Canadian income, and also because migrants would like to put their children through school. On the other hand, respondents coming for more than ten years (Ycan3) are less eager to participate in the Program based on the "*household livelihood*" factor compared to those coming between five and ten seasons. For these participants, their main motivations may be the good relationships they have built with their employer and

the fact that coming to Canada has simply become part of their life style, more so than a necessity.

Regarding the Mexican occupation of respondents, the results suggest that working in the construction sector (CNSTR) is not correlated with any of the three motivations to migrate compared to working in agricultural activities (AGR). However, those working in the commerce sector (COMM) are more motivated by *"household livelihood"* factor relative to those working in farming in Mexico; on the other hand respondents engaged in commerce (COMM) are less motivated by *social capital* than respondents in the agriculture sector (AGR). This could be explained by the fact that there are 13 respondents participating in COMM. Nine of these have a high school education, and seven can read basic English, hence they do not look for learning any new skills in Canada.

Contrary to what was expected, operating a farm in Mexico (OpF) is negatively correlated with on-farm capital motivations. This may be because those people who work in Canada for more than a certain number of years may start thinking about non-farm businesses either to diversify or to replace their farming activities. Based on the survey information, one fifth of those operating a farm would like to invest in other activities if they could earn more than double of their current Canadian income.[75] In addition, those who already have land may not want to buy more land and perhaps may even want to leave farming.

[75] In order to know what respondents would do if they could earn more money, we ask them what they would invest in if this were the case. From a total of 167 who run a farm, 30 people stated they would invest in a business outside the agricultural sector, 113 would invest in their farm and 24 would split the money between their farm and another business.

6.6 Summary

The objective of this chapter was to identify respondents' motivations for participating in CSAWP and therefore migrating to Canada on a temporary basis. To identify these motivations, the questionnaire presented 12 reasons for participating in the Program to be scored from 1 ("very unimportant") to 5 ("very important"). Each reason was previously identified in the in-depth interviews. Using a factor analysis technique, three main factors were revealed as the respondents' motivations to migrate. Among these factors, *"household livelihood"* was the most important, explaining 30 percent of the total variance, followed by *on-farm capital,* which explains 22.5 percent. *"Household livelihood"* factor tends to be of greatest importance for respondents because it includes motivations such as the low wages paid in Mexico and the lack of employment opportunities that push rural people out of their communities to look for better paid jobs to improve their family standards of life. *"Household livelihood"* tends to be of greatest importance for respondents who come from South and Southeast Mexico (REG3) relative to those from REG2; who are 29 to 29 years old (AG1) relative to those who are between 30 and 39 years old (AGE2), and whose spouses are between 16 to 29 years old (Age1) relative to those wives who are older than 40 years old (Age3) and have some level of education. *"Household livelihood"* factor is important for respondents who are engaged in commerce activities in Mexico.

"On farm capital" factor represents a "pull" factor for respondents in the range of age between 20 and 29 years old (AGE1) relative to those who are 30 to 39 years old (AGE2), for those whose spouses hold elementary level of education, for respondents who have more than four children (Child3) relative to those who have from two to four children (Child2) and for those coming for less than five seasons (Ycan1) in comparison

with those coming for five to ten seasons (Ycan2). It is surprising, however, that those respondents running a farm in Mexico are not motivated by *"on-farm capital"* as one expects. *"Social capital"* reasons attract respondents who have been coming to Canada for less than five seasons.

In general I can conclude that the lack of job opportunities in the rural labour market in Mexico means that a large number of Mexican villagers are seeking to escape low-status and unprofitable work in grain cultivation by performing off-farm activities, and particularly by participating in CSAWP.

Chapter 7

Farm Impacts of Remittances from Participation in CSAWP

7.1 Introduction

Chapter 6 concluded that economic factors were the main reasons to participate in CSAWP, particularly the high income Canada offers compared to what migrants could earn if they stay in Mexico. Hence, the objective now is to assess the farm impact of remittances sent home by Mexican migrants participating in CSAWP, with a specific focus on the allocation of remittances to farm investments and the direct and indirect impact of remittances on farm and non-farm income in Mexico. The study is based on the survey conducted in 2006 of 257 Mexican workers in CSAWP in Southern Ontario.

To achieve this objective, a New Economics of Labour Migration (NELM) approach was followed to assess the effect of remittances (Stark, 1991; Mora, 2005 and Taylor, 1999). The NELM states that migration decisions are taken among household members as a strategy to overcome economic risks and liquidity constraints in production/investment decisions; the migrant is characterized as a temporal migrant, not an individual who leaves permanently his or her community; as migration decisions are made as a household, the migrant assumes some form of contractual responsibility to send remittances home based on a tacit household agreement. Hence, Mexican migrants participating in CSAWP would appear to fit this theoretical model. The impact of remittances will be estimated specifically in terms of farm investment levels as well as in terms of farm and non-farm income.[76]

[76] Note that non-farm income here includes only that earned in Mexico. Canadian income is accounted for separately.

7.2 Remittances sent back home and their uses

The literature shows a fairly strong consensus on the use of remittances regardless of country. For the most part, remittances are used for daily expenses such as food, clothing and health care – basic subsistence needs – that account for a significant portion of the income of remittances receivers. Funds are also spent on building or improving housing, buying land or cattle, and buying consumer goods such as washing machines and televisions. Generally, only a small percentage of remittances are spent on savings and what is termed "productive investment" such as buying land or tools, starting a business or other activities with multiplier effects (Russell, 2002; Keely and Tran, 1989; Massey and Basem, 1992 for the case of international migrants from four Mexican communities; Taylor and Adelman, 1996 on theories, data, and research on the macroeconomic relationship between international migration and national development in all regions of the world).

The majority of the research on remittances shows that there is a general pattern in the use of remittances in Mexico. Most of them are used in daily expenses satisfying basic needs, in acquiring durable consumer goods and in acquiring new houses or improving existing ones, while only a handful of rural people allocate them as savings and/or productive investment (CONAPO, 2000). In this sense, Taylor (1992) demonstrated that migrant remittances might promote the growth of non-remittance incomes by enabling households to overcome liquidity and risk constraints where credit and insurance markets are missing or are imperfect.

In summary, remittances are channelled into different uses depending on a variety of factors. Respondents in my survey stated that they participate in CSAWP not only

because it offers secure employment but also because they can plan their future expenses based on the number of times they return to Canada:

> *"Everybody in the Program knows that the first two years' earnings are for covering the most important needs like food, housing and schools. The third year is for buying a plot of land to build a house with the earnings of the fourth year; everything after the fourth year is for saving or accumulating." (Cirilo, male, 30 years old)*

7.3 The importance and uses of remittances sent by Mexican workers participating in CSAWP

Participating in CSAWP allows migrants to have a paid job in Canada and achieve an income level that they would not be able to reach by staying in Mexico and performing farm activities. The income allows them to improve their family's living standard and gives them the possibility of investing in a business in order to secure their future.

The data gathered through the survey and the interviews included income earned in Canada, the amount of remittances sent back to Mexico and the uses of those remittances. With this information, I identify the uses and the usefulness of remittances for Mexican migrants participating in CSAWP. Where possible, I include pertinent comments and statements from respondents to supplement the quantitative data.

According to MLSW information, together, Mexican migrants participating in CSAWP remitted a total of C$67,486,796 in 2004. Although this pales in comparison to the amount of remittances sent from the US, which totalled approximately US$16.6 billion for the same year, (*Table 3.8* in this study), it constitutes a significant household income flow, sustaining 55,000 families in Mexico (MLSW, 2006). The amount of money sent back home represents around 80 percent of the total income earned by the Mexican migrants in Canada, while the remaining 20 percent is spent on living expenses in Canada (MLSW, 2006).

In 2006, based on my survey of 257 Mexican workers, the total remittances sent to Mexico by these 257 workers was C$1,710,850. On average, each participant sent C$6,657 over a period of five months and 24 days, working on average 64 hours per week in the season.

Participants in CSAWP come from all over the country (*Table 6.2*), except from the north of Mexico where migration preferences still focus on the US because of the proximity and the huge migration networks already built with that country. According to the MLSW, in 2005 the six most important of these were State of Mexico, Puebla, Tlaxcala, Guanajuato, Hidalgo and Morelos, together accounting for 65 percent of the total participant population (MLSW, 2006). Based on my survey conducted in 2006, the main sources of participants are the same six states listed by the MLSW,[77] accounting for 70 percent.

7.3.1 Canadian income

One of the central objectives of the survey was to determine the amount of net income and its composition that respondents receive for their work in Canada[78], such as the hourly payment according to the crop they grow in Canada, the amount of hours they work along with the length of the contract they have signed for 2006. In addition, weekly expenses were estimated and deducted from the income so I was able to how much was sent to Mexico as remittances. Canadian income depends mainly on the number of hours worked and the length of contract.

[77] One can say that the sample size in the survey is a representative sample of the total population as the pattern of sending states in 2006 was very similar to that in 2004 recorded by the MLSW.

[78] Among my respondents, some of them pointed out that the payment depended on the crop: for example, those working in tobacco fields were paid more than the others who work with vegetables or in packing plants. This is because harvesting tobacco is riskier than other crops.

As far as the average number of hours worked per week in Canada, information was obtained for three different agricultural production seasons: high, average and low production seasons. As *Table 7.1* shows, nobody worked less than 40 hours a week in average and high production season and a significant number of migrants worked more than 60 hours per week but less than 80. Overall, the average number of hours worked per week was 64.2. In low seasons, respondents worked much less than the average: almost 70 percent worked between 41 and 60 hours per week. The average number of hours worked in this season was 56.3 per week. In the high season almost 90 percent of respondents worked between 61 and 80 hours a week, while eight people worked more than 80 hours per week. In other words, Mexican employees worked an average of 74.2 hours per week in the high season: 10 more hours than during the average season and 18 more hours than during the low season. Respondents stated they are willing to work as much as the employer asks them. When migrants work less than in the average season, they ask their employer to give them more labour hours because most of them come with a goal income per season:

> *"If I made C$ 6,000 last season, I am here now to make at least that much money or even more as I have made compromised some amount of money in Mexico that I will pay with this year's income." (Crisóforo, male 48 years old)*

Table 7.1 Hours worked per week in three different production seasons, 2006

Category	Average Production Number (%)	Low Production Number (%)	High Production Number (%)
Average	64.24	56.32	74.19
Less than 40	0 (0)	3 (1.17)	0 (0)
From 40 to 60	116 (45.14)	178 (69.26)	19 (7.39)
From 61 to 80	141 (54.86)	76 (29.57)	230 (89.49)
More than 80	0 (0.0)	0 (0.0)	8 (3.11)
TOTAL	257 (100)	257 (100)	257 (100)

Table 7.2 shows that the payment ranged from C$8 to C$9 per hour depending on the crop they grow; (47.1 percent) were paid C$8 per hour, while (46.7 percent) were paid C$8.30 per hour. In general, Mexican migrants working in fruits and vegetables were paid between C$8.00 and C$8.50 per hour, while those working in tobacco fields (19 respondents) were paid C$9.00 per hour.

Table 7.2 Total and hourly payment received by Mexican workers in CSAWP according to the crop grown in Canada, 2006

	Income C$			Hourly payment C$			Remittances C$			Total # of workers	Ave. contract length (Months)
Crop	2,000 – 5,999	6,000 – 9,999	10,000 – 15,000	8.00 – 8.20	8.30 – 8.50	8.50 – 9.00	2,000 – 5,999	6,000 – 9,999	10,000 – 15,000		
Asparagus		1		1				1		1	6.0
Apples	1	17	18	29	7		12	19	5	36	6.3
Beans	2	10	1	13			4	9		13	5.4
Chard	2	1	3	6			3	1	2	6	5.0
Cherries		11		11			9	2		11	6.6
Chickpeas		1		1			1			1	3.5
Chinese herbs	2	8	4	13	1		7	5	2	14	5.4
Cauliflowers		2		2			1	1		2	5.0
Cucumbers	1	25	12	5	33		16	22		38	5.8
Eggplants		2	1	3			1	2		3	5.5
Flowers	2	39	19	27	33		33	27		60	5.9
Ginseng	1	1	1	3			2		1	3	5.1
Grapes		11		11			9	2		11	6.6
Lettuce	2	15	3	19	1		6	14		20	5.5
Maize		15	1	16			12	4		16	6.2
Peaches	1	1		2			2			2	3.2
Pears	1	3	10	7	7		1	8	5	14	6.2
Pine trees			14	7	7		4	10		14	8.0
Plants (such as ornamental)		23	17	17	23		21	19		40	6.1
Plums			1	1				1		1	7.0
Pumpkins	2	22	13	30	7		12	17	8	37	6.3
Radishes	2	3	2	6	1		3	2	2	7	5.1
Raspberries			12	5	7			4	8	12	6.7
Rye		1		1				1		1	5
Strawberries	2	53	25	38	42		40	30	10	80	5.8
Tobacco		12	7			19	7	12		19	5.1
Tomatoes	2	9	5	9	7		8	7	1	16	4.9
Trees		1	26	20	7		5	22		27	7.2
Vegetables		3			3		1	2		3	4.6
Watermelons		1		1				1		1	6
Zucchini		1	1	2				2		2	5.8
TOTAL	23	292	196	306	186	19	220	247	44	**511**	

On some farms, the payment was sometimes agreed between employer and employee; when this is the case, the hourly payment is higher than in other farms. For instance, migrants growing cucumbers on a farm in Leamington got paid 50 cents more than in other farms in the same town.[79]

Respondents were asked to estimate their net income for the season according to their length of contract. More than 50 percent of the respondents earned between C$8,001 and C$12,000 for the 2006 season (*Table 7.3*). On average, they earned C$9,338 for the season, which averaged a period of five months and 24 days; this final amount is after all deductions had been made, namely Employment Insurance (EI), Canadian Pension Plan (CPP), Medical Insurance and Travel Recovery.[80] As can be observed, only five respondents came for less than three months, while the majority came to Canada for more than six months.

Table 7.3 Net income received by Mexican workers in CSAWP according to the length of contract, 2006

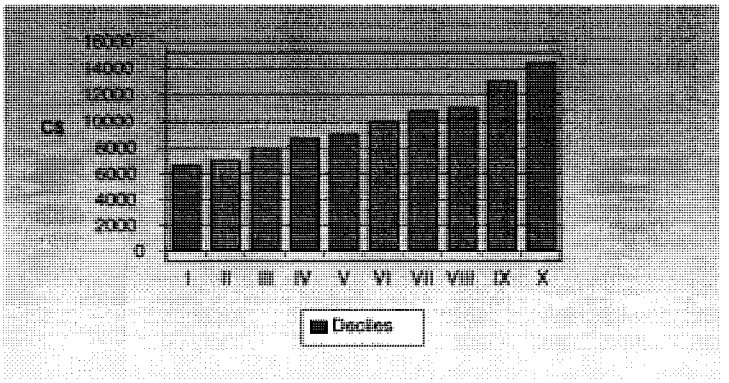
Length of contract (range of Months)	Less than C$4,000	From C$4,000 to C$6,000	From C$6,001 to C$8,000	From C$8,001 to C$10,000	From C$10,001 to C$12,000	Over C$12,000	Number of respondents (%)
2 to 2.9	1	4	0	0	0	0	5 (2)
3 to 3.9	1	0	7	0	0	0	8 (3.1)
4 to 4.9	0	6	28	3	0	0	37 (14.4)
5 to 5.9	0	0	37	21	4	0	62 (24.1)
6 to 6.9	0	0	1	53	12	4	70 (27.2)
7 to 8	0	0	0	5	38	32	75 (29.2)
Total	**2 (0.78)**	**10 (3.9)**	**73 (28.5)**	**82 (32.0)**	**54 (21.1)**	**35 (13.6)**	**257 (100)**

[79] This could depend on the number of seasons the migrants had been working for the same farmer.
[80] This amount includes deductions like advances lent by the employer to the employee for the first two weeks until the worker got paid.

If one divides the income earned in Canada into deciles (*Figure 7.1*), the lowest 10 percent of the sample earned C$6,580 per season, up to 50 percent of the Mexican migrants earned C$9,000, and the highest 10 percent of the sample earned C$14,500. According to one participant, "I earn in Canada more than a lawyer might do in Mexico" (Marcelo, male, 48 years old).[81]

For more than 50 percent (139) of respondents, Canadian income represents more than 80 percent of household income; the average income share for the sample is 81.5 percent (*Table 7.4*). How much it contributes to total household income depends on the length of the contract: in cases where the Canadian share of total household is low (less than 50 percent), it is mainly because the respondent stays in Canada for only a short period of time (*Table 7.3*). For those who stay longer, the share tends to be much higher.

Figure 7.1 Net income by deciles, 2006



[81] This could not be truer. Not only does the minimum wage (C$5 per day for 8 hours of work: Comision Nacional de Salarios Minimos, 2008) show how badly paid jobs in Mexico are, but salaries offered to experienced people with a career are also very low. Economists (undergraduate with a diploma) earn approximately C$300 to C$350 per month, while engineers and architects with more than ten years of experience are being paid between $C800 and C$1,000 per month.

Table 7.4 Canadian income share in the Mexican household income, 2006

Share (%)	Number of Respondents (%)
From 40 to 60	28 (10.98)
From 61 to 80	90 (34.51)
From 81 to 100	139 (54.51)
TOTAL	257 (100)

In order to assess the remittances sent by respondents in the Program, they were asked to estimate the cost of their living expenses in Canada (*Table 7.5*), assuming that the remainder of the income is sent home as remittances. Most said they try to spend as little as possible in Canada and send as much as they can home. In addition to spending money on basic necessities, Mexican migrants buy gifts for their families and relatives. Things such as clothes, toys, electronic appliances and souvenirs are the most common.

Table 7.5 Weekly living expenses in Canada, 2006

Living Expenses (C$ per week)	Number of Respondents (%)
From 40 to 60	52 (20.23)
From 61 to 80	46 **(17.9)**
From 81 to 100	112 **(43.58)**
From 101 to 120	28 (10.89)
More than 120	19 (7.39)
TOTAL	257 (100)

The table above shows the weekly living expenses,[82] which vary from C$40 to C$120 per week. For more than 60 percent of the respondents, living expenses were

[82] Living expenses refers mainly to food, clothes for themselves and groceries.

between C$61 and C$100 per week. Considering that respondents earn on average C$390 per week and their average living expenses are C$91, respondents spend more than one fifth of their Canadian income in Canada.

Respondents were asked if the work experience they had in Canada was what they expected before coming here or if it was "much better," "better," "about the same" or "worse". About 62 percent (158) stated their experience was better or much better than they expected; in other words, Mexican migrants initially thought the working conditions were going to be worse than they really were. Of the remainder 38 percent), 85 people said they found the working conditions the same as they expected, and 14 out of 257 people stated their experience in Canada was worse than they expected.

7.3.2 Remittances

Out of the total 257 interviewees, 227 stated that their families depended economically on their income. Because of this strong dependency, Mexican migrants send money back home on a regular basis (*Table 7.6*). Most send money monthly (127) or every two weeks (110).

Table 7.6 Frequency of remittances to Mexico, 2005-2006

Frequency	Number of Respondents (%)
Weekly	9 (3.5)
Every two weeks	110 (42.8)
Monthly	127 (49.42)
Every two months	11 (4.28)
TOTAL	257 (100)

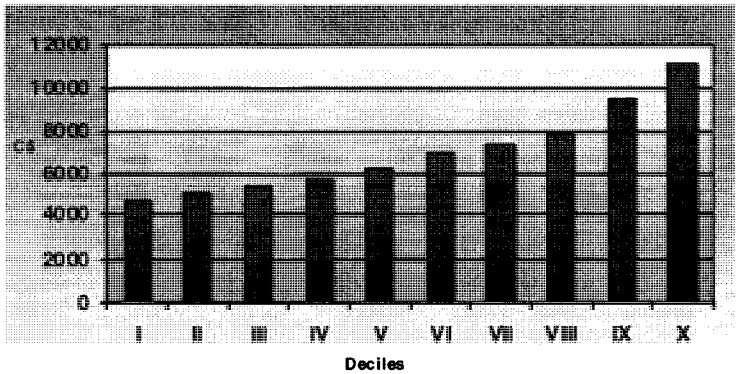
Only a handful of respondents send either weekly or every two months. Most respondents (233) use electronic money transfer to send funds to their families; only 24 use bank deposits. The charge per transaction depends on the amount of money the respondents send to Mexico. Normally the electronic transfer firms charge between C$14 and C$20 per C$1,000 sent and between C$25 and C$35 for more than C$2,000.[83]

The total amount of money remitted by respondents to their families in Mexico was C$1,710,850 in one season. Each worker remitted an average of C$6,657; 60 percent of the sample sent between C$5,100 and C$8,000; the lowest 10 percent sent C$4,750, and the highest 10 percent sent C$11,200 (*Table 7.7* and *Figure 7.2*).

Table 7.7 Remittances sent by respondents in CSAWP, 2006

Amount per Season (C$)	Number of Respondents (%)
From 2,000 to 4,999	39 (15.17)
From 5,000 to 7,999	166 (64.59)
From 8,000 to 10,999	47 (18.29)
Form 11,000 to 12,000	5 (1.95)
TOTAL	257 (100)

Figure 7.2 Remittances (C$) sent by respondents in CSAWP by deciles, 2006



[83] The two most commonly used electronic means are Rhia and FinMex.

7.3.3 Uses of remittances

The main uses of remittances are daily consumption (*Table 7.8*), followed by housing improvements: building a new house, expanding the current one, or making any improvements. Investment in education occupies third place, accounting for an average of C$826 per year. Using a part of remittances to invest in a farm business occupies fifth place, accounting for almost 10 percent.[84] This is followed by buying appliances and electronics. These results are similar to other studies, for example Cohen and Rodriguez (2005) for the case of Oaxaca, Canales (2006) for Jalisco and Verduzco (2000) for the State of Mexico. From the total sample of 257, 237 respondents stated that they would not been able to afford these expenses without their Canadian income:

> *"With the Canadian income I could buy some of the tools and equipment I have for farming. I now have lots of trolleys to carry corn and a truck where I sell it in the market. I also could buy better fertilizer and liquids (chemicals) to kill the bad bugs. Besides I have a son who is studying to be an engineer and he uses computers and that kind of stuff – without the Canadian income I would not be able to buy those things for him."(Fernando, male, 49 years old)*

Table 7.8 Uses of remittances, 2006

Use	%
General consumption	28.3
Housing improvements	14.6
School fees	12.4
Transport	10.0
Farm investment	**9.8**
Appliances/electronics	6.1
Payment of old debts	5.4
Investments in non-farm business	5.4
Social events, parties	5.1
Medicines	2.3

[84] If we look only at those who operate a farm (167), the share of remittances invested in farm activities increases to approximately 14%. Out of a total of 167 people who operate a farm in Mexico, 163 invest in farm activities. Only four people do not invest in anything or work in any activity in Mexico, instead depending totally on Canadian income as their only income source.

7.3.4 Farming in Mexico

A total of 167[85] respondents out of 257 declared they operate a farm in Mexico, either producing crops, raising animals, or both. The respondents' land access in Mexico is divided into four different tenures, namely inherited, bought, rented or some other kind of tenure (loan or communal). Inherited land is the most common type of access (*Table 7.9)* among respondents, followed by purchased land (24%).

This is a common phenomenon in rural Mexico; people in rural communities usually inherit land from their parents and in turn, the children leave this land to the next generation. In this sense, the *parcela* (plot of land) becomes smaller every time as the land passes from the father to multiple children. People also buy land to bequeath to their children, thinking that this is the most precious gift a father could give to his children.

Table 7.9 Land access in Mexico by Mexican migrants in CSAWP, 2006

Land Tenure	Number of Respondents (%)	Quantity of Land (Ha*) (%)
Inherited	92 (55.42)	420.5 (39.3)
Bought	41 (24.70)	267 (24.95)
Bought and inherited	25 (15.06)	357.5 (33.41)
Rented	6 (3.61)	15 (1.40)
Other	2 (1.20)	10 (0.93)
TOTAL	166 (100)	1070 (100)

* Ha= Hectares

The size of land respondents have in Mexico ranges from a quarter hectare up to 25 hectares. More than half of the respondents have less than five hectares, and only 13 respondents have more than 16 hectares. The average size of cultivable land that

[85] Here it is necessary make a note about these numbers: 167 workers are engaged in farm activities, but one of them has no land (case 23). Thus, only 166 who have land work it, while two have land but do not work it (cases 107 and 193). Case 23 is considered a farmer because he processes yoghurt and cheese in his house, which is used as a workshop, and invests significant amounts of money in his business.

respondents have for agriculture in Mexico is 6.44 hectares; however, a fair number (101) holds less than five hectares (61 percent). For most respondents, the size of land has remained the same for the past five years, while 29 people were able to acquire more land in this period of time, mainly as private property. The land tenure of respondents is mainly in *ejido*, but they also have private property or rent land. Most of the land is the rain-fed type *(Table 7.10).*

Table 7.10 Land tenure by Mexican migrants in CSAWP, 2006

Tenure	Hectares (%)	MIN. Ha.	MEAN Ha.	MAX Ha.	Number of Respondents
Ejido	569 (51.0)	0.25	4.74	25	120
Private property	531 (47.54)	0.25	5.83	51	91
Rent	14 (1.25)	1	2.33	3	6
Others	3 (0.27)	3	3	3	1
TOTAL	1,117 (100)				218

From a total of 1,117 hectares of land, 569 are under *ejido* tenure with sizes ranging from a quarter hectare to 25 hectares, corresponding to 120 Mexican migrants. Private property tenure occupies second place with 531 hectares. Ninety-one people have this type of land, with 5.83 hectares on average. Only six people rent a total of 14 hectares of land. From the total of 1,117 hectares of land that respondents have in Mexico, they use only 1,070 hectares to work and grow crops/animals; *ejido* tenure represents 53 percent of the cultivable land followed by private property with 49.6 percent and rental plots with 1.3 percent.

A variety of crops are grown in Mexico, with grains the predominant choice (*Table 7.11*). The majority (139 out of 167 people) grows corn and 89 grow beans separately one from another.[86]

Table 7.11 Crops grown in Mexico by participants in CSAWP (167)

Products Cultivated/grown	Number of Respondents	%
Crops		
Beans	89	53.3
Carrots	6	3.6
Chile pepper	12	7.2
Coffee	11	6.6
Flowers	1	0.6
Fodder oats	4	2.4
Fruit	19	11.4
Maize	139	83.2
Nopal	7	4.2
Oat	13	7.8
Onion	5	3.0
Pasture	11	6.6
Potato	10	6.0
Pumpkin	8	4.8
Sorghum	6	3.6
Strawberries	2	1.2
Sugarcane	4	2.4
Tomato	10	6.0
Vegetables	30	18.0
Wheat	10	6.0
Zucchini	3	1.8
Animals	82	32.0

The production of corn along with beans is common in Mexico because they are essential staples of the Mexican diet. As complementary crops, the combination of corn and beans creates a complete protein. As can be observed in *Table 7.12*, all bean producers also grow corn.

Table 7.12 Correlation between the production of beans and corn

		Corn		Total
		1*	2**	
Beans	**1 ***	89	0	89
	2 **	50	30	80
Total		139	30	169

*produced **not produced

Respondents also grow grain, vegetables, fruits and animals for commercial purposes (*Table 7.13*). All flower production is taken to the market, followed by fruits and

[86] In Mexico, growing maize and bean separately indicates that the crop is for commercial purposes.

vegetables. On average, only 21 percent of maize is sold and 30 percent of beans; the rest of the production is for household consumption. Respondents who farm carried out a diverse range of commercialization activities in terms of products and sale percentages. Of the 167 respondents, 137 sell some percentage of their product in the local market. The people who sell the greatest percentage of their products are those who raise animals: on average 66 percent of the animals are sold, with the remaining 34 percent destined either for household consumption or for animal reproduction. Almost half of respondents (82 people) raise animals on their land. Of these, 67 have the same type of animals as they did five years ago, while 15 changed or expanded their livestock, mainly to sheep, pigs and chickens.

In contrast, only 30 people grow crops for household consumption. For example, corn is produced mainly for household consumption (79 percent) along with beans, of which 70 percent is destined for household consumption, while other grains (sorghum, oats and wheat, among others), fruits, vegetables and flowers are mainly cultivated to sell at local markets or to feed household livestock. Out of 139 corn producers, 79 consume all their production; the rest (60 people) sell a portion at the local market.

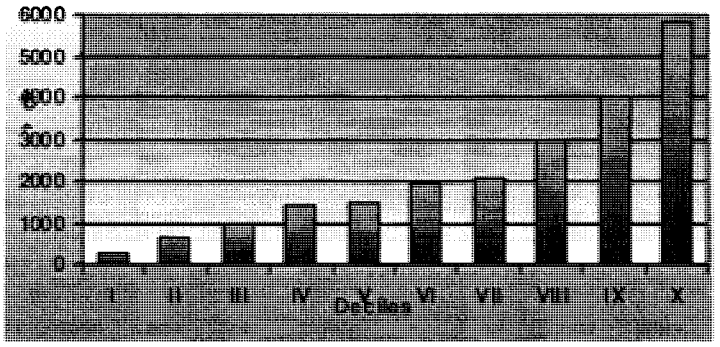
Table 7.13 Products grown to sell at local markets, 2006

Product	Average percentage of product sold
Flowers	100
Fruits	84
Vegetables	81
Animals	66
Other grains	61
Bean	30
Maize	21

In order to sell their products, most respondents go to local markets, but some (17) sell their products directly from the farm. Less than 50 percent travel between five and 20 kilometres to reach the markets where they distribute their products. The average distance

is 18 kilometres. As was mentioned earlier, 30 out of 167 farmers do not sell their products. This leaves 137 producers who sell one or more of their products to the local market, earning an average of C$1,907 annually. About 60 percent of the farmers who sell in the market earn less than C$2,000 per year; the highest 10 percent of the sample make more than C$4,000 (*Figure 7.3*).

Figure 7.3 Farm income in Mexico (C$) earned by respondents who sell in the market by deciles, 2006



Of the 167 respondents who are farmers, 147 do it personally when they are back home, while 20 don't work personally on their land, preferring to hire day labourers. Of these 20, 11 work in other activities outside agriculture, while 9 do not. Generally, migrants leave one or two people in charge of their farms in Mexico while they are in Canada. A significant number of farmers (123) leave their fields to relatives within their household who take responsibility for production and marketing. Since respondents work personally in their farms when they are at home, only 59 migrants hire day laborers while they are in Mexico; this number increases to 89 when migrants are in Canada (*Table 7.14*).

Table 7.14 Comparison of the number of people hired/helping the Mexican worker – while he/she is in Canada and while he/she is in Mexico, 2006

Number of workers	Family Members (%)	Permanent (%)	Temporary (%)	Hired Day Labourer (%)	Permanent (%)	Temporary (%)
While respondents are in Canada						
0	14	62	77	48	126	57
	(10.2)	(45.3)	(56.2)	(35)	(92)	(41.6)
1	63	50	30	49	7	44
	(46)	(36.5)	(22)	(35.8)	(5.1)	(32.1)
2	31	17	14	13	4	11
	(22.6)	(12.4)	(10.2)	(9.5)	(2.9)	(8)
3	22	8	11	8	0	6
	(16.1)	(5.8)	(8)	(5.8)	(0.0)	(4.4)
4	7	0	5	7	0	7
	(5.1)	(0.0)	(3.6)	(5.1)	(0.0)	(5.1)
5	0	0	0	3	0	3
	(0.0)	(0.0)	(0.0)	(2.2)	(0.0)	(2.2)
6	0	0	0	1	0	1
	(0.0)	(0.0)	(0.0)	(0.7)	(0.0)	(0.7)
7	0	0	0	4	0	4
	(0.0)	(0.0)	(0.0)	(2.9)	(0.0)	(2.9)
10	0	0	0	4	0	4
	(0.0)	(0.0)	(0.0)	(2.9)	(0.0)	(2.9)
TOTAL	**137**	**137**	**137**	**137**	**137**	**137**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**
While respondents are in Mexico						
0	16	72	67	78	131	81
	(11.7)	(52.6)	(48.9)	(56.9)	(95.6)	(59.1)
1	66	48	40	17	5	18
	(48.2)	(35)	(29.2)	(12.4)	(3.6)	(13.1)
2	26	9	10	11	1	7
	(18.9)	(6.6)	(7.3)	(8)	(0.7)	(5.1)
3	20	8	16	9	0	9
	(14.6)	(5.8)	(11.7)	(6.6)	(0.0)	(6.6)
4	9	0	4	6	0	6
	(6.6)	(0.0)	(2.9)	(4.4)	(0.0)	(4.4)
5	0	0	0	7	0	7
	(0.0)	(0.0)	(0.0)	(5.1)	(0.0)	(5.1)
6	0	0	0	1	0	1
	(0.0)	(0.0)	(0.0)	(0.7)	(0.0)	(0.7)
7	0	0	0	5	0	5
	(0.0)	(0.0)	(0.0)	(3.6)	(0.0)	(3.6)
8	0	0	0	1	0	1
	(0.0)	(0.0)	(0.0)	(0.7)	(0.0)	(0.7)
9	0	0	0	1	0	1
	(0.0)	(0.0)	(0.0)	(0.7)	(0.0)	(0.7)
10	0	0	0	1	0	1
	(0.0)	(0.0)	(0.0)	(0.7)	(0.0)	(0.7)
TOTAL	137	137	137	137	137	137
	(100)	(100)	(100)	(100)	(100)	(100)

Of the 167 farmers, 64 have other income sources besides agriculture, while 103 have only their farm income. In summary, out of 167 farmers, 30 do not sell any of their products, while the remaining 137 sell their products in the local market; 34 of these 137

perform another activity in addition to agriculture, such as construction and/or commerce, while 103 have only their agricultural income.

7.3.5 Other income sources in Mexico

From the total sample, 145 said they had another income source in Mexico apart from agriculture. The two more popular activities are construction and commerce, the latter performed by the worker him/herself or by one of their household members (the spouse or children). Out of the total of 145 people with a non-agricultural income source, 55 are in construction and 36 perform a paid activity related to commerce, transportation or the restaurant business. From the above activities, Mexican migrants earn between C$137.50 and C$9,000 per year, with an average income of C$1,892.

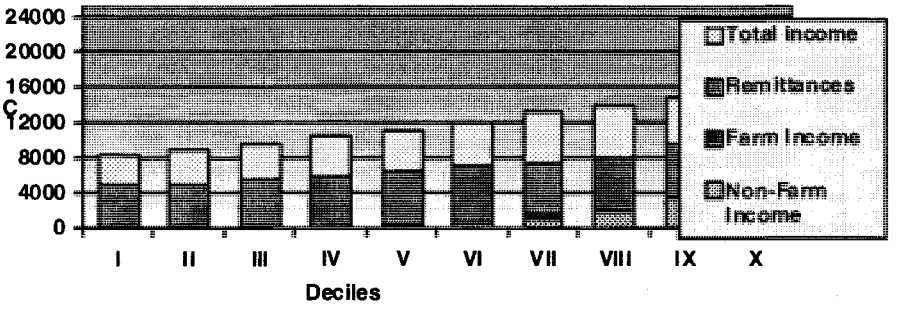
7.3.6 Total household income and its composition

Household income of respondents was composed mainly of Canadian and Mexican income. Canadian income represents the most important source for the majority of respondents; for 2006, it averaged C$9,338 while Mexican income averaged C$2,083. Therefore the total average household income was C$11,421 for that year. Canadian income can be broken down into money to pay living expenses in Canada (C$2,681 on average per season) and remittances (an average of C$6,657). Farm income in Mexico resulted from selling crops and animals in local markets (C$1,016) and non-farm income from performing a variety of economic activities in Mexico (C$1,067). *Table 7.15* and *Figure 7.4* show that for the lowest 10 percent of the sample, remittances represented 59 percent while for the highest 10 percent it represented 50 percent.

Table 7.15 Composition of household income by deciles (C$, entire sample=257), 2006

	Mean	I	II	III	IV	V	VI	VII	VIII	IX	X
Total income	11,422	8,160	9,000	9,532	10,500	11,200	12,000	13,060	13,800	14,760	23,000
Canadian income	9,339	6,580	7,000	8,000	8,700	9,000	9,960	10,800	11,000	13,000	14,500
Remittances	6,657	4,800	5,000	5,500	5,815	6,425	7,000	7,365	8,000	9,500	11,600
Living expenses	2,170	1,152	1,440	1,600	1,768	2,000	2,400	2,600	2,800	3,200	6,000
Farm income	1,016	0	0	0	0	300	800	1,500	2,000	3,120	10,000
Non-farm income	1,067	0	0	0	0	300	600	1,050	2,000	3,520	9,000

Figure 7.4 Household Income and its composition (whole sample=257) by deciles (C$), 2006

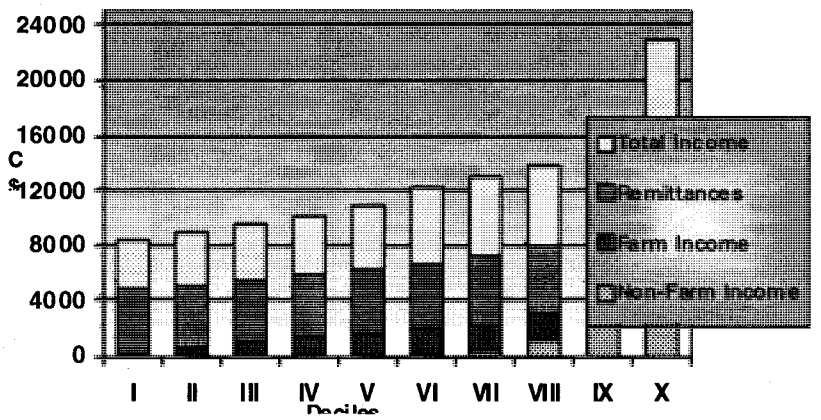


Similarly, for the sub-sample of 137 farmers, remittances represented 57 percent for the lowest 10 percent and 47 percent for the highest 10 percent of the sample. In contrast, Mexican income (farm and non-farm income) represented on average one fifth of the household income *Table 7.16* and *Figure 7.5*).

Table 7.16 Composition of household income by deciles (C$, sub-sample=137), 2006

	Mean	I	II	III	IV	V	VI	VII	VIII	IX	X
Total income	11,493	8,390	9,000	9,452	10,020	10,920	12,240	13,060	13,800	15,000	23,000
Canadian income	8,929	6,300	6,920	8,000	8,040	8,800	9,000	10,000	11,000	12,000	14,500
Remittances	6,519	4,790	5,000	5500	5,750	6,300	6,580	7,180	7,900	9,500	11,200
Living expenses	1,928	1,200	1,440	1,600	1,680	1,900	2,000	2,200	2,560	2,816	3,600
Farm income	1,907	300	680	1,000	1,400	1,500	1,960	2,060	3,000	4,000	10,000
Non-Farm income	657	0	0	0	0	0	0	390	1,216	3,000	4,500

Figure 7.5 Household income and its composition for commercial farmers (sub-sample= 137) by deciles (C$), 2006



In order to put the remittance income in a more general context, it is compared with the minimum salary in both countries and with the poverty line[87] in Mexico. The relative wage difference between Ontario and Mexico is almost 13 to 1, considering Ontario's minimum wage in 2006 was C$8.00 per hour. Mexican minimum wage for area A (the better paid of the three areas in Mexico) is C$5 per standard working day; based on a working day of 8 hours, the hourly wage would be C$0.60 (at an exchange rate of C$1=10 Mexican pesos) (Diario Oficial, December 29, 2006, p. 4). In a similar vein, the poverty line for a household is generally considered to be less than the salary of one full-time worker earning minimum wage. Poverty lines used for rural areas are those defined by the Poverty Measurement Technique Committee (Comité Técnico para la Medición de la Pobreza). Namely: Poverty Line 1 (Food) with monthly income under C$58.4; Poverty Line 2 (Capability) between C$58.50 and C$84.30 and Poverty Line 3 (Patrimony) between C$84.30 and C$104.70. On the other hand, poverty lines for urban areas are as

[87] In Mexico as well as in many developing countries, poverty line is measured in order to know the economic conditions people are living in. Poverty line in Mexico was firstly defined as very very poor, very poor and poor. Nowadays, this line is defined as the relationship between minimum expenses in alimentary and non-alimentary needs namely: alimentary, skills and patrimonial. (INEGI, 2006)

follows: Poverty Line 1 (Food) monthly income under C$79; Poverty Line 2 (Capability) between C$80 and C$97; and Poverty Line 3 (Patrimony) between C$98 and C$157 (CIMMYT, 2006; Center of Research for Development, 2006). This means that a household income that consists only of an average remittances income is almost 10 times more than the poverty line 1 income for rural areas or 3.5 times Poverty line 3 for urban areas.

7.3.7 Impacts of working in Canada

To judge the improvements in the respondents' economic and social status as a result of the participation in the Program, respondents were asked if they feel better off with their Canadian income. More than 60 percent stated that their standard of living is much higher thanks to their work in Canada than it would otherwise be (*Table 7.17*). Respondents were also asked if they feel better off in comparison with neighbours in the community who have no migration/remittances relationship. More than 50 percent declared that they are much better off than others in their community (*Table 7.18*).

Table 7.17 Impact of remittances on family standard of living in Mexico, 2006

Standard of Living	Number (%)
Much higher: more than double *	155 (60.31)
Higher: less than double	88 (34.24)
About the same as in Mexico	14 (5.45)
TOTAL	257 (100)

* I used the term "more than double" for comparison purposes and to make the question more clear to the respondent, but it does not indicate a specific figure.

Table 7.18 Impact of remittances on family standard of living in comparison with others in the community, 2006

Standard of Living	Number (%)
Much higher: more than double	142 (55.25)
Higher: less than double	95 (36.96)
About the same	16 (6.23)
Lower	4 (1.56)
TOTAL	257 (100)

Respondents were asked if they have learned new skills as a direct result of working in Canada. Overall, 202 (79%) declared that they had acquired new skills, ranging from better use of fertilizers to how to operate machinery (tractors, cutters, lifting machines) (*Table 7.19*). In contrast, 55 said they had not learned any new skills in Canada mainly because what they do is almost the same as what they do in Mexico. Others said they do not farm in Mexico and therefore do not need these skills at home.

Table 7.19 Farm skills learned in Canada, 2006

Skill Learned	Number
How to better grow and select fruit, flowers and vegetables	78
Use of machinery (tractor, cutter)	63
How to grow and select tobacco	19
Greenhouse techniques	19
Better use of fertilizer and chemical products	11
Nursery techniques	7
Packing industry skills	2
Others	16
TOTAL	**215 ***

*This total (215) is greater than the number of respondents (202) who declared they have learned some skills because some of the respondents stated they have learned more than one skill.

Out of 202 respondents who declared that they had learned some skills working in Canada, 78 had learned how to better grow and select fruit, flowers and vegetables, either in a greenhouse or in the field; others had learned machinery operation skills and

greenhouses techniques. Sixteen people said they had learned other skills such as how to maintain the soil in good condition or grow ornamental plants: *"Ornamental plants activity is new in Mexico and I will try to start this business in the future"* (Desiderio, male, 28 years old).

7.3.8 Farm-level investments

All farmers (167) used their remittances (or Canadian income) to invest in Mexico. During the last five years, respondents who were farmers had invested an average of C$10,102. Out of these 167 farmers, 103 (61.7 percent invested between C$1,000 and C$10,000, and 36 (21.6 percent) invested between C$10,000 and C$20,000 (*Table 7.20*).

Table 7.20 Impact of remittances on farm investment, 2006

Amount of Investment (C$)	Number of Respondents (%)
Less than 1,000	7 (4.19)
From 1,000 to 10,000	103 (61.68)
From 10,001 to 20,000	36 (21.56)
From 20,001 to 30,000	10 (5.99)
More than 30,000	11 (6.59)
TOTAL	**167 (100)**

The total cumulative investment that farmers made over the last five 5 years in land, livestock, irrigation etc., was C$1,720,795. These investments were distributed as described in *Table 7.21*. The biggest investment made during the last five years was in farm equipment, followed by seeds and fertilizer. Ninety-four farmers, spending an average of C$1,400, had made investments in equipment acquisition. Of these, 11 people purchased farm equipment such as pumps, drills, etc. in Canada; the rest made their

purchases in Mexico. The average expenditure on equipment purchased in Canada was C$512; only two people spent more than C$1,000 buying equipment in Canada.

Only 29 of the 167 respondents who farmed in Mexico had purchased land. Of the 82 farmers who have animals on their land, 68 bought more animals to expand or to replace the herd, spending approximately C$5,700 on average over the last five years. Livestock is one of the important investments that farmers make, not only as a business but also as a way of savings since livestock can easily be sold for cash in an emergency. In addition, 72 farmers had built shelters for animals or for storing crops. Only 12 farmers had invested in crop improvements, spending an average of C$2,636. A total of 27 farmers had invested in other items, including food for animals or, in some cases, milk to make yoghurt, cheese or other milk-derived products.

Table 7.21 Total farm investment over 5 years, 2006

Concept	C$	Number of respondents
Farm Equipment	360,250	94
Seeds	345,780	160
Fertilizer	331,120	160
Land	301,450	29
Livestock	126,900	68
Irrigation	87,500	12
Construction	84,470	72
New Crops	28,000	11
Others*	55,325	27
TOTAL	**1 720,795**	

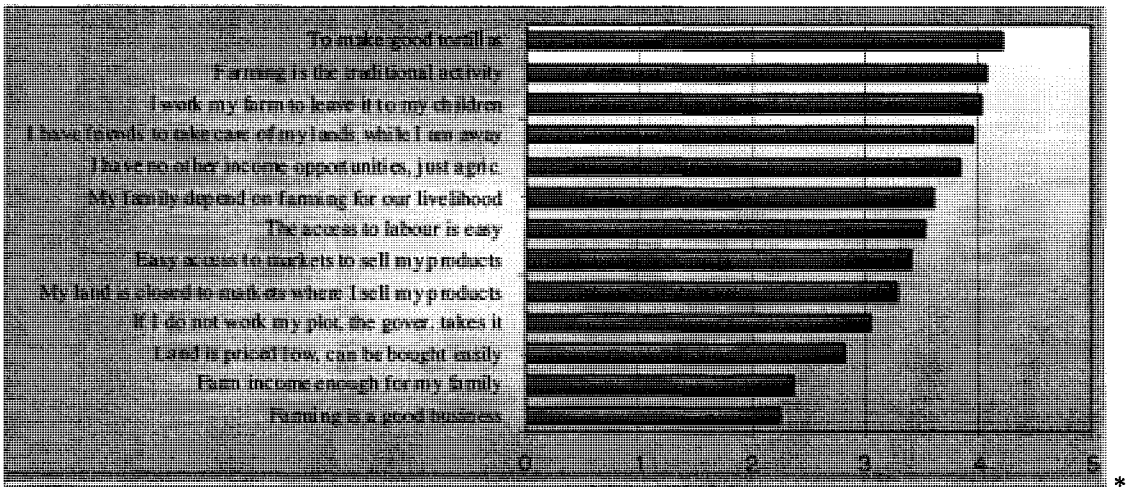
* Includes transportation (trucks and horses) and transportation costs.

Finally, in order to get an idea on the respondents' aspirations if budget constraints were lifted, they were asked what they would do if they earned more than double or triple what they currently earn in Canada. In response, 114 stated they would continue farming,

110 would start an off-farm business, 22 would continue farming in combination with another business and 11 would buy land in order to start farming. In other words, 147 out of 257 respondents would continue to work in agriculture, while the remaining 110 would start or switch to an off-farm business. Of those who would like to invest in a business outside of agriculture, 37 said they would start their own business without specifying which sector, 26 would have a workshop (for example, mechanical, smithy, carpentry or textile), and 28 would have a small "*fonda*" (inn).

To probe respondents' interest in investing in their farm and the constraints facing Mexican farmers, my survey asked the 167 respondents who run a farm why they continue to farm. They were also asked to rate 13 possible reasons for investing in their farm on a scale from 1 to 5, where 1 was "strongly disagree" and 5 was "strongly agree." *Figure 7.6* summarizes their answers measured through the mean score.

Figure 7.6 Reasons* for investing in farm activities (mean score), 2006



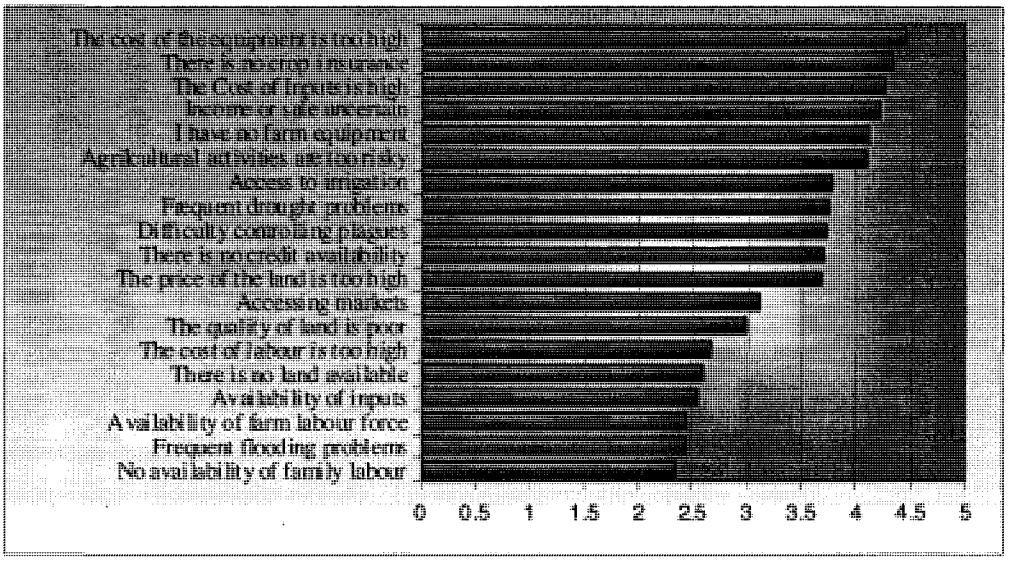
* A score close to one means "strongly disagree," while a score close to five means "strongly agree."

As mentioned earlier, 139 out of the 167 Mexican migrants dedicate their land to growing maize, and their main reason for doing so is because they want "to make good tortillas." Of these 139, 122 strongly agreed with this reason, 15 agreed, and only 2

neither agreed nor disagreed; the average score was 4.21. "Farming is the traditional activity of my community" is the second main reason to invest in farming activities, along with the desire to pass along their land in good condition to their children.

However, farmers face a number of constraints in the farm production process. They rated them as shown in *Figure 7.7.* The main constraint is the high cost of the farm equipment (4.47); another constraint is the absence of crop insurance (4.33), making farming a risky economic activity with uncertain income (4.28). Likewise, the high cost of the inputs is another important constraint (4.24), along with the difficulty in accessing irrigation (3.76). The least important constraint the respondents reported is the "lack of availability of family workers" (2.45).

Figure 7.7 Constraints facing Mexican respondents in farming in Mexico (mean score)

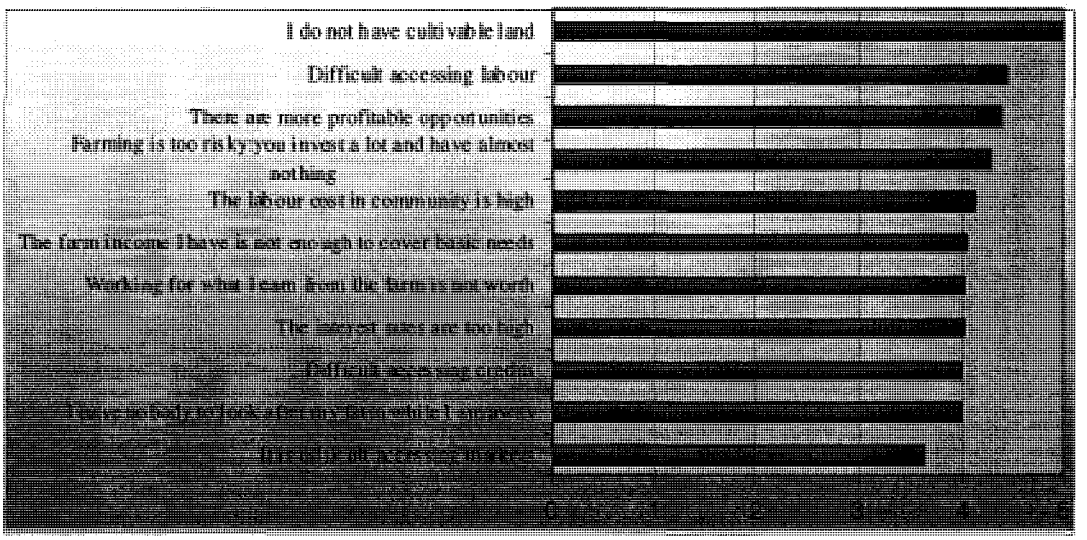


On the other hand, 90 respondents do not run a farm in Mexico. The questionnaire listed a number of possible reasons[88] for not investing in farming activities, which they were asked to rate on a scale from 1 to 5, where 1 was "very unimportant" and 5 was

[88] Based on the most common reason researchers have found in Mexico for not investing (Yunez, 2002; Canales, 2006; among others)

"very important." "Not having land for cultivation" was the most important reason given for not investing in farming. *Figure 7.8* summarizes their answers measured through the mean score.

Figure 7.8 Reasons* for not investing in farm activities in Mexico (mean score), 2006



*A score close to one means the reason for not investing was "very unimportant"; close to five means it was "very important."

7.4 Theoretic model: The New Economics of Labour Migration

A number of development economists have studied the impact of remittances as a tool for rural and urban development and their contribution to enhancing the income of migrant-sending households and communities (De Brauw Taylor and Rozelle, 2001; Zarate-Hoyos, 2003; Mora Rivera, 2004). The literature, however, has neglected important aspects of the impact of remittances, such as resultant farm investments. Most of the positive findings of remittances in the literature are focussed on the contribution of remittances to household income.[89] However, as Canales (2006) argues, remittances do not contribute anything in terms of development unless they are spent in some way

[89] Considering remittances as an exogenous variable and household income as endogenous could represent a double-counting mistake if remittances are already recorded as part of household income.

(whether productive or not productive). In other words, if remittances are not spent – or as people say in Spanish, if they are kept "under the mattress" – there is no economic spillover effect. Thus, knowing the ways in which remittances are used is important in determining if they promote economic development.

A vast literature examines impacts of migration and remittances on migrant-sending households (Massey *et al.*, 1998), but few studies consider the impacts on production inside or outside the households that send migrants and receive remittances. Neoclassical models (Todaro, 1969;[90] Singh, Squire and Strauss, 1986) consider migration decisions as individual choice – either permanent or temporary – and the earnings as an income transfer. This means that they affect consumption in Mexico by shifting the budget constraint outwards, but they do not affect production in Mexico because an income transfer leaves the conditions for farm profit maximization unchanged[91] (Taylor and Fletcher, 2002).

In comparison, the New Economic Labour of Migration (NELM) model considers not only that the deciding unit is the family instead of the individual migrant but also that remittances are sent because there is an implicit contract between the migrant and the family left behind.[92] NELM states that in this implicit contract, a member of the family (usually a son or the family head) agrees to work in off-farm activities abroad as a strategy to overcome liquidity constraints by sending money back[93] to counterbalance the

[90] In Todaro's 1969 migration and remittances model, and in elaborations of the neoclassical agricultural household model proposed by later authors such as Singh *et al.* (1986), there is no rationale for migrants to share their earnings with the households they have left behind. In these models, the individual is the basic deciding unit and the analysis does not offer the possibility of remittances reshaping rural economies.
[91] The impact of remittances can be seen only if one assumes that the so-called fixed factors in the production function are not fixed and therefore can be endogeneized into a different equation. This assumption is already made by the NELM.
[92] All respondents (257) in my sample reported that they send money directly to their families in Mexico.
[93] Eighty-two percent of household income comes from remittances.

budget constraints on the household consumption function and also to reduce credit constraints in the production function. This kind of arrangement can also be found in the model of Hoddinott (2004). Therefore, migrants in this model play the role of financial intermediaries in the context of imperfect markets that characterize most of the world's rural economies. In addition, this model characterizes migrants as temporal migrants who do not stay for long periods[94] and assumes a cohesive, traditional family where the members are likely to trust, and remain loyal to each other.

Following Stark (1991), Taylor (1999) and Mora Rivera (2005), I have fit the NELM model to my remittances study case as described below. NELM considers that a household in its search to overcome risk constraints could use remittances to relax its liquidity limitations and so achieve the transition from familial to commercial production. It is assumed that a rural household has two possible productive activities, one with high returns and another with low returns. The household can invest its fixed resources $(\overline{T})$, such as land or capital in a productive activity. This can be a low-return or high-return activity where $Q_i, \quad \forall \quad i = 1,2$, is the product of the low-return and high-return activity, respectively. Household characteristics, Z^h, such as age, education work experience (skills) shape the investments that the household does in each activity – in a word, Z^h encompasses all the socio-demographic and economic household characteristics.

Figure 7.9 illustrates this hypothesis. The curve PPF represents the production possibility frontier where its slope is determined by the range of relative prices $-p_2 / p_1$

[94] In my survey, respondents reported an average stay in Canada of five months and 24 days per season. Thus, Mexican farm workers in CSAWP do not migrate permanently but temporarily.

and the opportunity cost of producing Q_2 or Q_1. The household will specialize in the activity with higher returns Q_2:

$$Q^* = f(\overline{T}, Z^h) \qquad [7.1]$$

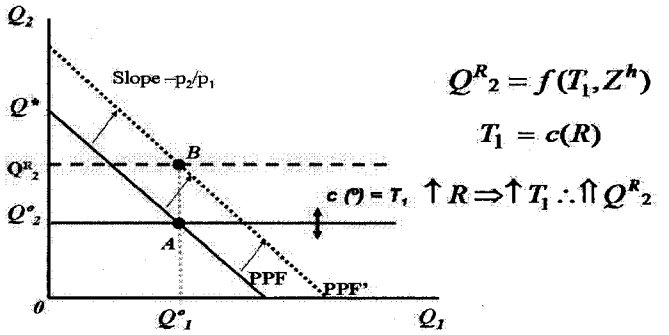
and the resulting income will be:

$$Y^* = g(Q^*) \qquad [7.2]$$

Q^* and Y^* results assume that the household does not face any kind of market restrictions and that there is a well-functioning credit market. However, if the household faces market restrictions when trying to invest in the higher-return activity, the result will not be the same. "Considering $c(\circ) = T_1$, where $c(\circ)$ denotes one or more barriers that limit the investment of the household's fixed resources to only $T_1 (T_1 < \overline{T})$. For example, in the case of a restriction of liquidity or credit, $c(\circ)$ can denote a barrier that keeps the household from getting loans for the purpose of investing more in the higher return activity. Consequently, the restriction prevents the production of more Q_2 due to the lack of access to the formal credit market. " (Mora, 2005 p.5) In *Figure 7.9*, the bi-directional arrow represents the barriers to product Q_2; the NELM points out that the role of remittances can soften rural households' market restrictions, so that if remittances relax the liquidity constraint, the horizontal line would shift upwards and the PPF could shift to the right to PPF', leading to a greater amount of $Q_2 \Rightarrow Q_2^R$ and Q1 remains in the same level or it even can increase, but for the purposes for this example I left it unchanged. One of the barriers could be, for example, the liquidity constraint the household faces in

trying to invest in the higher-return activity, and therefore the production of Q_2 will be less than it could be without the lack of access to the formal credit market.

Figure 7.9 Potential remittance effects on rural household production



Source: Adapted from Mora Rivera, 2005, p. 6

In this sense, the NELM model proposes that, without a well-functioning credit market in the migrant's place of origin, one or more members of the household could work abroad and, by sending remittances (R) back, help to relax the household's credit and liquidity restrictions. This relaxation of access to credit could be accompanied by a cost in the sense that, if the rural household faces an imperfect labour market and has to occupy family labour, migration can restrict the households when they try to shift to the higher-return activity. On the other hand, this situation could be counteracted with the common excess of labour supply that is characteristic of developing countries. According to the NELM, credit and liquidity constraints[95] limit the quantity of fixed resources that can be assigned to the production of goods with higher revenues in which the producer is

[95] One hundred and eleven respondents – out of 167 – in my sample ranked as "important" or "very important" the reason *"there is no credit availability"* as the principle constraint they face in farming activities.

interested, and can be relaxed (as seen above) through migration earnings. In this way, T_1 would be a function of remittances:[96]

$$T_1 = c(R) \qquad [7.3]$$

In addition, it is hypothesized that $dc/dR > 0$ because remittances cause an increase in the available capital for household production. Taking the restriction into account, the production level of the higher-return activity is:

$$Q^R{}_2 = f(T_1, Z^h) \text{ where } Q^R{}_2 > Q^o_2 \qquad [7.4]$$

and the product of the activity with lower revenues is:

$$Q^o{}_1 = f(\overline{T} - T_1, Z^h) \qquad [7.5]$$

The restricted household income $\overline{Y}$ therefore is determined by:

$$\overline{Y} = g(Q^R{}_2, Q^o{}_1) \text{ where } \overline{Y} < Y^R < Y^* \qquad [7.6]$$

Y^R is the new household income at the new Q_2 level, Q_2^R passing from point A to B.

Researchers using this model have found that the impact of migration and remittances on household income can be either positive or negative because the result depends on a number of factors, mainly relating to markets in the migrant's place of origin. It would be negative if the household's income depends greatly on family labour in the place of origin and remittances sent back do not counteract this loss of labour. On the other hand, if an excess of labour supply characterizes the labour market in migrant-sending communities, migration earnings could represent not only a way to increase household income but also an opportunity to find a paid job, at least abroad if not in

[96] In the original theoretical model T_1 is also a function of migration (M). However, I take M out in my model since I already know both that migration is present in the sample and that there is only one member, usually the family head, who has migrated to Canada to participate in CSAWP.

urban areas (Taylor, 1992; De Brauw *et al.*, 1999; Stark and Bloom, 1985; Stark and Lucas, 1988; Stark and Taylor, 1989; Mora, 2004 and 2005).

7.5 Empirical model, estimation and results

My sample of Mexican migrants participating in CSAWP fits the NELM's profile neatly. Most respondents travel to Canada every season for an average of five months and 24 days and return to the place of origin. They send remittances (usually monthly), maintain family ties and have economic dependents in Mexico. I assume that participation in CSAWP is a joint decision to send one family members away for work, rather than an individual decision, and that the utility obtained from the resulting remittances is greater than that which would be obtained if the member stayed at home. The Mexican migrants' statements in which they declared they had doubled or tripled their household income by coming to Canada to work through CSAWP confirm this assumption. When we asked a worker if his income is now higher (roughly doubled or tripled) and if he thinks he is better off now with the Canadian income, he said:

"Oh there is no doubt!! I AM better off with the Canadian job than in Mexico. Let me tell you my history. When I first came to Canada, it was because I could not bear to see my children sick and had no money to take them to the doctor. Even though the doctor sometimes did not charge for the consultancy, I had to pay for the medicines and there was the problem .... Unfortunately, in 1999, I lost a daughter who was very sick and I could not economically support her medical treatment, so I gave up looking for a better-paid job in my community and surrounding areas and I decided to go to work in Mexico City with a friend who had contacts to get a job in the construction field. Once I was in there, yes I had a better-paid job and I used to go every two weeks to see my family and everybody seemed to be okay. However, at the same time in the D.F. [Mexico City] I also had many problems, not only with the thieves but also with the police in two times I was robbed immediately after I was paid. I did not know what to do, as I got tired of these things. One day (around July of 2000) I was walking in the downtown near a government office and I saw lots of people like me outside of an old building. I went there to see what was going on and a guy told me to fill a form to go to Canada and make good money. I said I do not know where Canada is, and he said you do not care, just fill it and they will call you – in just a few weeks you will earn what could you earn over your life here. I did it; nothing happened for one month, and I thought that everything was a big lie as most of the good things are in Mexico. One Friday I was coming back from my job and a neighbour told me that I had a phone call from the "Secretaría" (ministry) and they left a message saying that I should go the next Monday to arrange some things about my application. In September I was called again to come to work, since then I have not stopped coming, and I will not; my family now is much better off than before. In my community I am not just 'Alberto,' I am 'Don Alberto.'"(Male, 47 years old)

The information collected through the survey and in-depth interviews constitutes a unique dataset for this study on the impact of remittances on small farm investment that migrants in CSAWP made in Mexico. Most of the respondents – 92 percent –declared that they would not be able to invest in farm activities if they did not have the remittance income. On average, respondents have sent C$6,657 in remittances and, on average, have allocated almost 10 percent to farming, which means that more than C$600 is spent on agricultural activities. If I take only those who run a farm in Mexico, however, that figure increases to 17 percent. These percentages reflect the respondents' interest in investing in their farm. The fact that the percentages are not higher may reflect constraints facing Mexican farmers that deter them from investing more.

In order to observe the impacts that remittances have on farm investments, a simultaneous system of equations is used that considers two income functions (farm and non-farm), one farm investment function and a remittance equation. Simultaneity is seen between the farm investment and farm income functions (Equations 7.7.2 and 7.7.3 below).

Since the theoretical model considers the impact of migration on income sources, here it is modified to consider only the impacts of remittances on farm and non-farm income. The empirical model in its structural form is the following linear simultaneous system of equations:[97]

$$Y'\Gamma + X'B = \mu' \qquad [7.7]$$

[97] The use of a uniequational model was not possible because of endogeneity issues. I used the Haussman test, estimating artificial regressions of remittances and FarmIncome and ran two OLS regressions. In the first regression, I independently regressed remittances and FarmIncome and retrieve both residuals. Then the second regression, I re-estimate the FarmInvest function including the residuals from the first two regressions as two additional regressors. The result was that the two residual coefficients were significant, showing that the remittances and FarmIncome are endogenous variables and not exogenous. Therefore, I decided to use a system instead of a uniequational model. On the other hand, simultaneity is found between FarmIncome and FarmInvest as they are correlated in more than 70%.

Where, if using all the endogenous and exogenous variables:

- Y' is a 1xm vector of endogenous variables with $i = 1 \cdots 4$, namely remittances, farm income, non-farm income and farm investments made by the Mexican migrants in the sample
- Γ is an $m \times m$ matrix with the coefficients of endogenous variables
- X' is an $1 \times k$ vector of exogenous variables in the system (Z^w: individual characteristics like age or working experience, and Z^h: household characteristics like number of dependent children, cultivable land, Mexican net income and farm investments made during the last five years)
- B is a $k \times m$ matrix of coefficients of exogenous variables or instruments
- μ' is a $1 \times m$ vector of error terms

The main hypothesis is that remittances[98] enhance household income (from on-farm and non-farm[99] activities) through enhancing farm investments made by respondents in Mexico. Moreover, this hypothesis is more clearly demonstrated by limiting the sample to those who run a farm in Mexico and sell their products in the local market (137) instead of taking the entire sample (257); this is because farm investment level for this sub-sample is greater (17%) than the sample as a whole (10%).

The variables used in the specified structural system (Equations 7.7.1 through 7.7.4) and hypothesized signs are reported in *Table 7.22*.

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[98] As I want to assess the effect of remittances on all three endogenous variables (farm and non-farm income and farm investments), I include remittances in all the structural equations, while farm income is just one of the endogenous variables. Therefore, I should not include this variable as a determinant of farm investment along with remittances because of double counting, creating collinearity problems.

[99] Income earned by workers performing activities in Mexico. In the case of men, these are activities like commerce, construction and carpentry assistants; in the case of women, this income usually comes from working as domestics.

The entire structural simultaneously system in equation [7.7] is specified as follows[100]:

$$\text{Remitt} = ß_1+ß_2*\text{Contractlenght}+ ß_3*\text{LEC}+ ß_4*\text{earhourly}+ ß_5*\text{yearsincan} + U_1 \quad [7.7.1]$$

$$\text{FarmInvests}=ß_6+ß_7*\text{Remitt}+ß_8*\text{Farmincome}+ß_9*\text{FarmInvt5years}+ß_{10}*\text{Age}+ß_{11}*\text{D5}+U_2 \quad [7.7.2]$$

$$\text{FarmIncome} = ß_{12}+ß_{13}*\text{Remitt}+ß_{14}*\text{landculti}+ß_{15}*\text{landejido}+ß_{16}*\text{familypermwhileCan} +ß_{17}*\text{YearsinCan}+ß_{18}*\text{daylabhelpwhileCan}+ß_{19}*\text{FarmInvests}+U_3 \quad [7.7.3]$$

$$\text{NonFarmIncome} =ß_{20}+ß_{21}*\text{Remitt}+ß_{22}*\text{Notagriocc} +U_4 \quad [7.7.4]$$

Remittances (Remitt) [7.7.1] are estimated[101] by considering the contract length in Canada (ContrLength) and the amount per hour the worker is paid[102] (earnhourly). The expected signs of these two coefficients are positive; the longer the time the worker has contracted to stay in Canada, the more money he/she could make and hence the more remittances could be sent to Mexico. In the same way, the higher the hourly wage, the more income the worker receives and therefore the more money he/she could send back home. On the other hand, remittances (Remitt) are a negative function of the experience of working in Canada – measured in the number of seasons the worker has been coming to Canada (YearsinCan) – along with the living expenses in Canada (LEC).

[100] The derived instrumental variables are: farminvt5years, landculti, age, earhourly, contractlenght, LEC, yearsincan, D5, familypermcan, familyhelpcan, landejido, daylabhelpcan, notagrioccdummy.

[101] Having an equation to determine remittances, the endogeneity problem (detected in an uni-equational model) is solved (footnote 94 in this study).

[102] This information was gathered through the questionnaires; the wage considered here is not the official minimum wage set by the province of Ontario.

Table 7.22 Definition of the exogenous variables and expected sign of coefficients

Variable definition	Type (units)	Descriptive stats SYS1 N=257	Descriptive stats SYS2 N=137	Hypothesized sign			
		Mean (Standard deviation)	Mean (Standard deviation)	Remittances (Remitt) (C$)	Farm Invests (C$)	Farm Income (C$)	Non-Farm Income (C$)
Remittances (Remitt)	Predetermined (C$)	6,657.04 (1,843.7)	6,519.4 (1,868.6)		(+)	(+)	(+)
Farm Investments (FarmInvests)	Pre-determined (C$)	650.87 (1175.0)	1157.4 (2309.1)			(+)	
Farm Income (FarmIncome)	Pre-determined (C$)	1016.58 (1457.6)	1907.02 (1512.8)		(+)		
Non-Farm Income	Endogenous (C$)	1067.23 (1680.1)	656.98 (1232.2)				
Instrumental Variables							
Length of contract (ContrLength)	Exogenous (Months)	5.82 (1.37)	5.51 (1.36)	(+)			
Wage per hour (earn/hour)	Exogenous (C$)	8.19 (0.24)	8.22 (0.25)	(+)			
Years in Canada (yearsincan)	Exogenous (Number of years)	9.80 (4.59)	8.30 (4.71)	(+)		(+)(-)	
Living expenses in Canada (LEC)	Exogenous (C$)	2,170.6 (993.4)	1,928.1 (662.3)	(-)			
Working in Canada more than 5 years (D5)	Exogenous Dummy D5=1 Coming for more than 5 years	0.79 (0.4)	0.77 (0.4)		(+)		
Respondent age (age)	Exogenous (Years)	38.54 (7.58)	38.99 (6.7)		(+)		
Cultivable land (landculti)	Exogenous (Hectares)	4.16 (6.85)	7.46 (8.01)			(+)	
Land tenure (Landejido)	Exogenous (Hectares)	2.21 (3.82)	3.98 (4.54)			(+)	
Farm investments made during the last 5 years (FarmInv5years)	Exogenous (C$)	6,565.6 (9,903.9)	11,733.6 (11,126.1)		(+)		
Family labour total: (FamilyhelpwhileCan) Permanent: (FamilypermwhileCan)	Exogenous (Number of people)	1.03 (1.16) 0.44 (0.75)	1.6 (1.04) 0.78 (0.87)			(+)	(+)
Day Labourier (daylabwhileCan)	Exogenous (Number of people)	0.9 (1.8)	1.5 (2.2)			(+)	
Working in a sector other than agriculture (Notagrioccu)	Exogenous Dummy (Work in any other sector =1 yes)	0.05 (0.21)	0.007 (0.8)				(+)

The second equation [7.7.2] considers farm investments (FarmInvests) made by Mexican migrants in Mexico during 2005. With this equation, the effect of remittances

(Remitt) on the level of farm investment is considered. It is hypothesized that the coefficient $ß_7$ is positive, which means that the more remittances the worker sends, the greater the investments on the farm, relaxing the production liquidity constraint. In addition, I expect a higher $ß_7$ when considering a sample restricted to farmers instead of the entire sample. Additionally, farm investments correlate positively with farm income ($ß_8$) (FarmIncome) earned (Rozelle *et al.*, 1999) and farm investments made during the last five years (FarmInvt5years) ($ß_9$); once again, these coefficients ($ß_8$ and $ß_9$) are higher if I consider only the farmers in the sample (Taylor, 1999; Mora Rivera, 2004). In terms of the effect of age ($ß_{10}$) on FarmInvests, I expect a positive coefficient sign. According to previous studies, younger people are more willing to engage in non-farm business than older people, who are more willing to continue farming (Tuan *et al.*, 2000). The respondents in the entire sample (257) are on average 39 years old, while 77 percent of the people who run a farm are more than 35 years old. Thus, it is possible to think that the farmers are going to stay in the farm sector investing all the money they can. A further hypothesis is that respondents who have come to Canada for more than five years (D5) are able to invest, but respondents who have been coming for less than five years are not (Binford, 2002).

The third equation [7.7.3] estimates the impact of remittances (Remitt) on farm income (FarmIncome). The expected sign of $ß_{13}$, along with all other coefficients, is positive. However, according to De Janvry and Sadoulet, (2000), and Adams, (1991) the sign of remittances coefficient could be negative showing that in the short term they could unbalance this income source because of the migration which is related with labour force loss. Hence, the coefficient of number of seasons the respondent has been

participating in the Program (YearsinCan) is expected to be negative. Thus $ß_{17}$ is expected to be negative, measuring the loss of farm labour because of migration. Based on the NELM, however, I have assumed that there is no family labour constraint, so I expect $ß_{16}$ to be greater[103] than $ß_{17}$, neutralizing any possible labour loss. In the same vein, I expect a positive relationship between FarmIncome and the rural labour force availability measured by daylabhelpwhileinCan ($ß_{19}$) as this variable play the role of complement family labour force during migration season.

The fourth equation [7.7.4] considers non-farm income (Non-FarmIncome) determined by Remitt ($ß_{21}$), which is expected be to positive, as is not working in the agricultural sector in Mexico (Notagrioccu) ($ß_{22}$).

As the system is simultaneous and over-identified,[104] the suggested method[105] to estimate it is three-stage least squares (3SLS), which for this case gives consistent results that consider the correlation of cross equations (Pindyck and Rubinfeld, 1998). The system detailed in Equations [7.7.1] through [7.7.4] is estimated for two samples: the first considers the entire sample (257 people), which includes Mexican migrants who run a farm and those who do not, while the second considers only the sub-sample (137) of respondents who not only run a farm in Mexico but also sell their farm products.[106]

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[103] In order to compare the coefficients a calculated elasticity is needed. The result is showed in square brackets in *Table 7.26*.

[104] The system was identified with the rank and order conditions, and the result for both conditions was that the system is over-identified.

[105] Pindyck and Rubinfeld (1998)

[106] As stated before, out of the 257 workers, 167 run a farm in Mexico. However, only 137 of these sell their products, thus generating income from farming activities. I therefore used the smaller sub-sample of 137, as farm income (Farmincome) should be a non-zero number to run the system.

7.5.1 Results

The results obtained after running the models with 3SLS for the entire sample and for the sub-sample are shown in *Table 7.25* and the resultant elasticities are presented in *Table 7.26*. Statistical evaluation *t* was applied on coefficients individually along with a graphical and numerical simulation of the system in general.

Graphical simulation is shown in *Figures 7.10 and 7.11* where the endogenous variables are well simulated using the proposed model for the entire sample and the sub-sample respectively. Numerical simulation was calculated with Theil's inequality[107] coefficient and its decomposition into UM=bias, US=variance and UC=covariance coefficients shown in *Tables 7.23* and *7.24* for the entire sample and the sub-sample respectively. All four endogenous variables were graphically simulated with the results using the Three-Stage Least Squares (3SLS) method. In the *Figures 7.10* and *7.11*, it can be observed that the simulation (red line) follows the actual endogenous variable (blue line) in each case.

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[107] Theil's coefficient is defined as: $U = \frac{\sqrt{\frac{1}{T}\sum_{t=1}^{T}(Y_t^s - Y_t^a)^2}}{\sqrt{\frac{1}{T}\sum_{t=1}^{T}(Y_t^s)^2} + \sqrt{\frac{1}{T}\sum_{t=1}^{T}(Y_t^a)^2}}$ where: Y^a=actual value and Y^s= simulated value. The decomposition into UM=bias; US=Variance both expected close to zero and UC=Covariance expected close to one (Pindyck and Rubinfeld, 1998, p.407).

Figure 7.10 Endogenous variables simulated by the system (Entire Sample N=257)

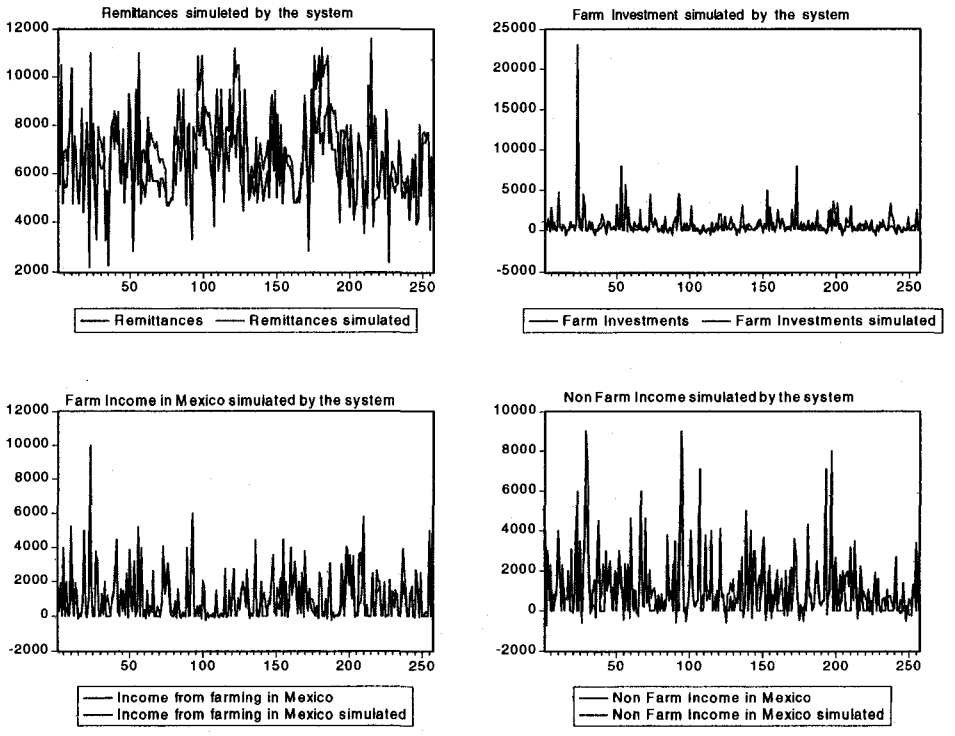

Figure 7.11 Endogenous variables simulated by the system (Sub-sample N=137)

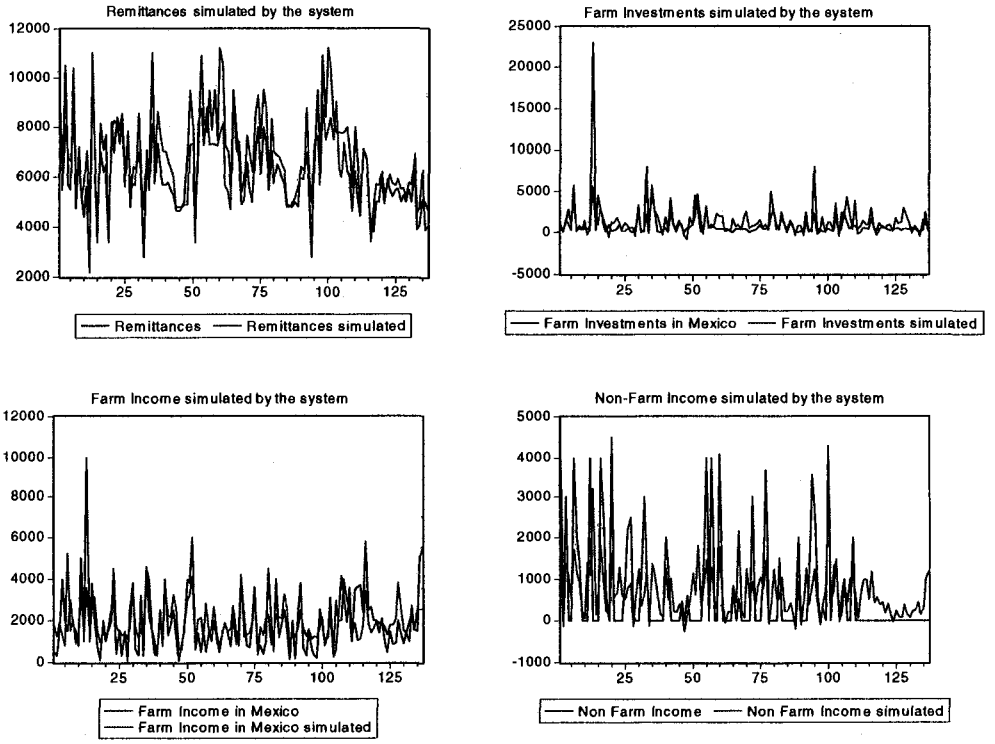

Table 7.23 Theil coefficient and its decomposition (Entire sample N=257)

Variable tested	Theil	UM=Bias	US=Variance	UC=Covariance
Remitt	0.09188	5.05788e-18	0.0183078	0.746104

Source EVIEWS (V.4.1)

Table 7.24 Theil coefficient and its decomposition (Sub-sample N=137)

Variable tested	Theil	UM=Bias	US=Variance	UC=Covariance
Remitt	0.0874	6.1213e-16	0.0124267	0.86842
FarmInvest	0.4531	1.5221e-16	0.0291980	0.70072
FarIncome	0.2678	1.7503e-17	0.0240723	0.75197

Source EVIEWS (V.4.1)

In the remittances (Remitt) equation (*Table 7.25*), all the coefficients have the expected sign. The sign of the coefficient for YearsinCan is negative and significant for the entire sample (second column). The more years the migrant has been coming to Canada, the less remittance he/she will send back because he/she has already accumulated the amount of money needed to cover basic needs.

In general, based on the results I can say that remittances (Remitt) positively influence farm investments, especially for the sub-sample of farmers (N=137). Moreover, for the sub-sample, the elasticity of farm investment to remittances [**1.70**] is higher than the elasticity of farm investments to Farm Income (FarmIncome) [0.21] (seventh column, *Table 7.26*), meaning that remittances play a more important role than other farm income sources in increasing the possibility of investment in farm activities. This effect could be explained by the fact that the worker's household receives more from seasonal remittances per capita than from agricultural sources in Mexico. Indeed, the monthly per capita remittances from my sample of respondents (US$135,[108] on average) are more than five times the monthly farm income per capita (US$25 on average for the sub-sample),

[108] This figure was calculated considering the total remittances workers send to Mexico for the season, divided by the total household members (number of children plus two parents) and divided by 12 months. I switched to US currency to agree with Canales (2006) figures.

which in turn are more than double the per capita remittances received from the US, which average US$55 (Canales, 2006).

Table 7.25 Estimated effects of remittances on income sources and farm investment (using 3SLS)

	Entire sample N=257				Sub-sample N=137			
Explanatory Variable	**(7.7.1) Remitt**	**(7.7.2) Farm Invest.**	**(7.7.3) Farm Income**	**(7.7.4) Non-F Income**	**(7.7.1) Remitt**	**(7.7.2) Farm Invest.**	**(7.7.3) Farm Income**	**(7.7.4) Non-F Income**
Constant	-1541 (-0.48)	-2326.8 (-3.59)***	1229.5 (3.46)***	2428.8 (4.41)***	-4652.8 (-1.41)	-5016.7 (-0.42)	2085.7 (4.02)***	1145.5 (1.14)
Remittances (Remitt)		0.15 (2.77)***	- 0.16 (-3.46)***	0.02 (0.44)		0.302 (2.45)***	- 0.22 (-3.11)***	0.18 (2.67)***
Farm investments (FarmInvests)			0.70 (10.2)***				0.77 (7.06)***	
Farm income (FarmIncome)		-0.006 (-0.03)				0.13 (2.26)**		
Length of contract (ContrLength)	1303.6 (16.73)***				1394.9 (13.83)***			
Wage per hour (earn/hour)	358.53 (1.8)**				749.2 (1.93)**			
Years in Canada (yearsincan)	-27.18 (-1.5)*		-10.29 (-0.82)		-18.98 (-0.89)		-23.81 (-1.18)***	
Living expenses in Canada (LEC)	-0.95 (-8.85)***				-1.27 (-6.4)***			
Working in Canada more than 5 years (D5)		91.93 (0.43)				204.9 (0.44)		
Respondent's age (age)		26.13 (2.14)***				78.9 (2.83)***		
Cultivable land (landculti)			56.33 (6.07)***				57.82 (4.69)***	
Land tenure (Landejido)			-2.84 (-0.17)				-15.3 (-0.71)	
Family labour total: (familypermpwhileCan)			443.3 (5.71)***				412.23 (4.0)***	
Day labourier (daylabwhileCan)			83.55 (2.93)***				68.76 (1.71)**	
Working in any sector other than agriculture (Notagrioccu)				1486.8 (6.32)***				1721.3 (2.11)**
Farm investments made during the last 5 years (FarmInv5years)		0.09 (4.34)***				0.11 (2.89)***		
R^2	0.53	0.58	0.55	0.30	0.60	0.40	0.56	0.28

Notes: t-statistics are in parentheses; *** denotes significance at 1% level, ** at 5% level and * at 10% level. Source: EVIEWS (V.4.1) statistical outcome.

Remittances also represent an important determinant for non-farm income, as the elasticity is higher than one [1.14] at the one percent significance level (*Table 7.26*). This could be because some of the respondents are interested in non-farm activities to

complement their farm income, or even replace it. In the FarmIncome equation for the sub-sample (eighth column), the remittances coefficient is negative at the one percent significance level. This mean that remittances in the short term do not enhance farm income, this is similar to what De Janvry and Sadoulet, 2000 found for Mexican *ejidatarios*, arguing that remittances could in the short term play the role of farm income substitution. Although this effect could be counterbalanced by the impact of remittances on investment levels along with the positive effect of having family and rural farm labour availability. On the other hand this result can also mean that remittances do not enter into the farm income equation as a determinant variable but instead they determine farm investment decisions in equation two that in turn do play an important role to enhance farm income levels.

Age of respondents is important in increasing both FarmInvests levels for the entire sample and the sub-sample at the one percent significance level; the older the worker becomes, the more he/she is willing/able to invest in his/her farm. For example, Antonio said: *"I am spending big money in my farm because I want to leave it to my sons in good condition, and it is the only asset I have for the future of me and my wife."*

As expected, the cultivable land (landculti) variable is positive in the FarmIncome equation for both the entire sample and the sub-sample systems at the one percent significance level. I added the variable *landejido* to see if there is any difference in farm income when considering the type of land tenure; the results are not significant, even at the 10 percent level.

It was hypothesized that because of the number of season the respondent has been participating in the Program (YearsinCan) and hence he/she is away for some time from

his/her farming activities in Mexico, FarmIncome could be negatively affected,[109] particularly for respondents in the sub-sample. The negative result for coefficient $ß_{17}$=-23.8 corroborates this hypothesis. However, it also was hypothesized that this negative impact would be counterbalanced with a positive impact on family labour availability (FamilypermwhileCan) variable. Results prove that this is the case; the coefficient $ß_{16}$ for FamilypermwhileCan is positive and greater than $ß_{17}$. In order to compare both coefficients, elasticities were calculated and the result suggests that the negative impact on FarmIncome because of migration is in fact counterbalanced with the FamilypermwhileCan since the final result is positive (0.23). Moreover, if we consider that there is labour availability (daylabwhileCan) in the place of origin and that day-labourers can be hired, the possible labour loss because of migration is more than counterbalanced by family and community labour accessibility in Mexico (see column eight in *Tables 7.25* and *7.26*). This result is backed up by the fact that respondents ranked "No availability of family labour" as the smallest constraint they faced in Mexico (*Figure 7.7*).

Working in any economic sector other than agriculture (Notagrioccu) correlates positively with Non-Farm income, and the elasticity is low but significant at the five percent level. Farm investments made during the last five years (FarmInv5years)[110] show a positive relationship with farm investments (FarmInvest) and, as expected, the elasticity is higher when considering only farmers who have a commercial farm than respondents in the entire sample (1.11 and 0.91 respectively). For the characteristics of the model, it

[109] In a similar vein, authors like McKenzie (2006) mention that remittances represent migration movements and that migration could signify a loss of labour in the place of origin with its correspondent loss in internal income.
[110] This period refers to investments made from 2001 to 2005.

can be observed that FarmInv5years not only has positive effects on FarmInvest but in turn it enhances farm income measured by $ß_{19}$ (0.45 and 0.50 for the entire sample and the sub-sample respectively, *Table 7.26*).[111]

Table 7.26 Estimated elasticities based on results from Table 7.25

	Entire sample N=257				Sub-sample N=137			
Explanatory Variable	**(7.7.1) Remitt**	**(7.7.2) Farm Invest.**	**(7.7.3) Farm Income**	**(7.7.4) Non-F Income**	**(7.7.1) Remitt**	**(7.7.2) Farm Invest.**	**(7.7.3) Farm Income**	**(7.7.4) Non-F Income**
Remittances (Remitt)		[1.53]***	[-1.05]***			[1.70]***	[-0.75]***	[1.14]***
Farm investments (FarmInvests)			[0.45]***				[0.5]***	
Farm income (FarmIncome)						[0.21]**		
Length of contract (ContrLength)	[1.13]**				[1.18]***			
Wage per hour (earn/hour)	[0.44]**				[0.94]**			
Years in Canada (yearsincan)	[-0.04]*						[-0.10]***	
Living expenses in Canada (LEC)	[-0.30]***				[-0.28]***			
Respondent's age (age)		[1.54]***				[2.7]***		
Cultivable land (landculti)			[0.23]***				[0.23]***	
Family labour total (familypermwhileCan)			[0.45]***				[0.34]***	
Day labourer (daylabwhileCan)			[0.43]***				[0.74]**	
Working in any sector other than agriculture (Notagrioccu)				[0.07]***				[0.02]**
Farm investments made during the last 5 years (FarmInv5years)		[0.9]***				[1.1]***		

Notes: t-statistics are in parentheses; *** denotes significance at 1% level, ** at 5% level and * at 10% level. Source: EVIEWS (V.4.1) statistical outcome.

7.6 Summary

The objective of this chapter was to assess the remittance (Remitt) effects on farm investment and on both farm and non-farm income sources. Results show that on the one hand, remittances can significantly enhance farm investments (FarmInvests), which in

[111] Perhaps this result could be stronger if I could specify a time series model to observe lagged effects.

turn enhance farm income. On the other hand, remittances help increase non-farm income (Non-FarmIncome) in Mexico, allowing farm migrants to expand their income portfolio. The elasticity of FarmInvest with respect to Remitt is high even after accounting for other factors such as FarmIncome. In the survey as well as in the in-depth interviews, Mexican farmers stated they would not be able to invest in their farm without the income from remittances and that remittances gave them the ability to buy land and equipment or to buy animals, which represent a form of future insurance.[112] Hence, these results support the NELM hypothesis that states that remittances relax the liquidity constraint in production/investment decisions. Similar results were found by Cohen and Rodriguez (2005); Sorensen *et al.*, (2003); Zarate Hoyos (2004); Unger (2005); Rivera-Batiz (1986); Oberai and Singh (1980); Malik and Sarwar (1993) and Taylor (1992). This situation reflects the fact that a significant number of Mexican migrants in the sample still want not only to invest in farming activities, but also to keep their farm in order to work it and leave it as a legacy for their children. As stated above, some of the respondents purchased farm equipment in Canada such as pumps, drills, etc. that would not be affordable without their Canadian income.

Migration impacted negatively on FarmIncome as it represents a labour loss in the place of origin (McKenzie, 2006). However, as hypothesized, family labour availability counterbalanced this labour loss along with the availability of day labour in the community of origin. By enhancing non-farm income, remittances ensure that participants in CSAWP feel better off economically working in Canada than staying in Mexico; more than 60 percent of the interviewees said their actual income had more than doubled because of the Canadian income.

[112] Animals are very easy to sell in an emergency such as an illness.

The relationship between the number of times a worker had came to Canada (D5) and his/her investment decisions could not be proven. My hypothesis was that Mexican farmers were able to invest in Mexico only after coming to Canada for more than five seasons, once basic needs had been covered with the previous four years of income earned in Canada. Although the results showed that the coefficient $ß_{11}$ had the correct sign (seventh column of *Table 7.25)*, it was not statistically significant.

The remittances sent to Mexico represent an important share of household income. The results suggest that the longer the length of the respondents' Canadian contract (ContrLenght), the more they remit. However, their living expenses in Canada also increase, so that remittances would be limiting to this variable. Similarly, the more years the migrant returns to Canada (YearsinCan), the smaller the remittances they send. There could be a variety of reasons for this: perhaps they spend more in Canada on their living expenses (eating in restaurants instead of making their own meals) or buying clothes. According to information from the survey, after seven years of coming to Canada, they spend more (C$100 or more per week) than in the first two or three years (C$70 on average per week).

The qualitative impacts of working in Canada are also useful to respondents; they stated they have learned farming skills, especially in greenhouses, that they could use in the future in Mexico. Another very important qualitative impact that remittances have on Mexican migrants' family is the human capital investments in the children; they spend more on school fees than they invest in the farm (12.4 percent versus 9.8 percent respectively). An additional significant qualitative impact of working in Canada is the social acknowledgment they now have among the inhabitants of their communities; they

report that people accord them the title "Don" ("Mister") as a sign of respect, which means a lot for them. They have gained a better standard of life through their years of coming to Canada and saved money to improve their houses and buy appliances that make their life easier, like having tiled bathrooms, cooking stoves and running water.

Chapter 8

Conclusions

The purpose of this study was to investigate the potential economic effects of remittances on the farm investment levels of Mexican migrants who participate in CSAWP. The study also aimed to identify the motivations to participate in the Program. The main finding is that remittances enhance on-farm investments in Mexico, which in turn enhance farm income. In addition, remittances positively influence on non-farm income in Mexico, giving respondents the possibility of starting a new business and diversifying their investment portfolio. These results agree in large part with the findings of other researchers who report that remittances create benefits, in the sense that remittances enhance household income, reducing poverty (slightly) in developing remittance-receiving countries and improving living standards in the short term (Rubenstein, 1982, 1983; Unger, 2005; Taylor, 1999; Yunez, 2001).

Respondents in the sample (257) were mainly men (98 percent) between 30 and 49 years old, on average, with an elementary school education. They are married in the majority of the cases, with between three to four children on average. They earn approximately C$6,500 to C$9,500 per season and work an average of 64 hours a week throughout the season (from 61 to 80 hours per week in the high production season). They send remittances every two weeks and, on average, each participant sent C$6,657 over a period of roughly five months and 20 days. Income from remittances represents 81 to 100 percent of their household income for roughly 54 percent of the respondents. Most of the respondents (78 percent) are engaged in farming activities in Mexico but not all of them, despite the Program requirement that participants must be a farmer in Mexico. In

addition, only 65 percent (167 people) of the sample run a farm in Mexico ranging in size from three to five hectares. Some of them would like to invest in activities outside of farming, because they believe that investing in agriculture is too risky. However, of those who want to invest in their farm, their top choice was using their money to buy land as a form of future savings or an inheritance for their children.

Respondents who invest in a farm in Mexico (167) do so mainly because they already have land that was inherited and they want to maintain this tradition of buying land to bequeath to their children. Those who run a farm directed part of their remittances to investments in land. The main crops they grow in Mexico are corn and beans (89 and 52 percent respectively), based on a desire to maintain the tradition of growing beans and/or corn, the latter because they want to make good quality tortillas for their own consumption (*Figure 7.6*) and feed their animals. The respondents in the sample who do not run a farm in Mexico cited the fact of not having land as the most important reason for not investing in farming activities (*Figure 7.8*). This lack of access to cultivable land exposes the respondents to market failures as was stated by De Janvry and Sadoulet (2000), not allowing them to diversify easily compared with those endowed with more land.

Using a factor analysis technique, three main factors were revealed as the respondents' motivations to migrate temporarily to Canada through CSAWP: "*household livelihood*", "*on-farm capital*" and "*investment in the social capital*" of the household. As expected, the first factor was the most important for the respondents, who believed that coming to Canada would enhance their household income. This is supported by the results described in Chapter 7, based on a simultaneous equations econometrics model.

Remittances sent home increase household income through farm investments, as indicated by the results of coefficients $ß_7$ and $ß_{19}$ (outlined in red in *Tables 7.25* and *7.26,* columns 3 and 4 for the entire sample and 7 and 8 for the sub-sample).

As described in Chapter 6, the results suggest that respondents coming for fewer than five seasons are more motivated by increasing their on-farm capital (both financial capital and knowledge) than those who have been coming for more years. This means that respondents are interested in learning new skills in Canada and that they do it in the first five years; after this time they understand the way farming is performed in Canada which, according to some of the respondents, is different compared to Mexico. Respondents are interested particularly in learning greenhouses skills that they can transfer to Mexico, where the payment for greenhouse work is better than for working in the fields. In addition, the results suggests that those respondents who have been coming for more than 10 seasons are less motivated to remit, since they have already covered the basic needs of their family at home.

The empirical results from the simultaneous econometric model presented in on Chapter 7 show that on one hand, remittances enhance farm investments (FarmInvests) to a significant degree for all the respondents and even more for those who run a farm and, in particular, sell any of their products in the local market. Moreover, for participants with farms in Mexico, the elasticity of farm investment with respect to remittances [1.70] is higher than the elasticity of farm investments with respect to farm income (FarmIncome) [0.21] (*Table 7.26,* seventh column), meaning that remittances could play a more important role in enhancing the possibility of investing in farm activities than other farm income sources in Mexico. Furthermore, the former elasticity [1.70] is higher

than the elasticity with respect to farm investments made during the last five years (FarmInv5years) [1.11], meaning that no matter how much they invested before, Mexican migrants need current liquidity to buy seasonal/variable inputs to work their lands such as seeds, fertilizers and pesticides.

Regarding a possible labour loss created by migration, the results show that there was actually a labour loss measured by the coefficient of the variable (YearsinCan) in the Farm Income equation [-0.104], but this was counterbalanced with the positive elasticity of the coefficient of Family Labour (FamilypermwhileCan) [0.34]. Therefore, if there was a labour loss because a respondent participated in CSAWP, this negative impact was offset with the family labour availability in Mexico. These results support the NELM hypothesis that states that remittances relax liquidity constraints in production/investment decisions. These findings on the effects of remittances on farm investments are shared by a number of previous studies: for example Trigueros and Rodriguez (1988) report that 30 percent of US earnings were spent on land, tools or livestock. Escobar and Martinez (1990) surveyed manual labourers in Guadalajara and found that 31 percent of migrants used their savings to set up a business. In the same way, Massey and García España. (1987) found that 21 percent of migrants used their savings productively. Even Reichert (1981), who has frequently said that migration and remittances are in some ways an illness affecting Mexico (referring to them as the "migrant syndrome"), reported that 84 percent of all funds contributed toward six capital improvement projects in Guadalupe, Michoacán came from migrants.

The fact that remittances contribute to enhance the respondents' socio-economic status in Mexico means that participants in CSAWP be better off economically working

in Canada than staying in Mexico; more than 60 percent of the interviewees reported their actual income was more than double because of the Canadian income. This increased income allow migrants and their relatives to improve their standard of living through spending in food, clothes and sending children to school (in some cases migrants can afford private schools for their children paying high tuition fees).

8.1 Contributions and limitations of the research

Previous studies have analysed the impact of remittances on household income and the components of it, but no study has analyzed the effect of remittances on the investments that Mexican migrants in rural areas make in their farm. This study considers farm investments as the main variable since there are important and historic linkages between the farm and non-farm sectors, particularly from the farm towards non-farm sector. The results demonstrate that remittances are one of the factors connecting these two sectors.

Most of the findings in the literature on remittances centre on the fact that remittances enhance household income and that they are used mainly for daily expenses and will continue to be used in this way for the near future. Nevertheless, in most of the studies, authors who estimate the remittance effects on household income do not clarify whether the estimations were made before or after including them in the household income. This is a key issue, since if the estimation is done after including remittances in the household income, a double-counting inaccuracy is introduced that could lead to over-estimating the effect of remittances.

In this study, this issue is addressed by dividing the household income from Mexican sources into two different income sources: farm and non-farm; both include only the income earned in Mexico for performing paid activities inside the country. On the other

hand, this study recognizes the differences between those who are engaged in farm activities and those who are not and shows that the effect of remittances and other variables are not the same for each group.

Finally, studies observing the importance of remittances on household variables do not consider the fact that remittances may not be exogenous – as researchers have assumed to date – but endogenous; this disregard could cause endogeneity problems with the corresponding lack of statistical significance of the coefficients. To solve this problem, this study has considered a system of equations in which remittances are defined by exogenous variables such as foreign income measured by hourly wages and the expenses the migrant incurs while living in the foreign country, among others. Data information in this study was gathered through a survey conducted to a representative sample (257) of Mexican workers population participating in the Program in Ontario.

Limitations on this study are that results are only valid for the year of 2006 and for the CSAWP participants interviewed in Southern Ontario. Because the information gathered was cross sectional, time comparisons cannot be made and therefore it is not possible to observe any seasonal/periodical tendency. Therefore as a future research, I would suggest exploring if the positive on-farm investments results because of remittances analyzed in this study could turn out in greater productivity in Mexican farming. In addition it would be useful to complement the study with a survey in Mexico to see farm workers investment behavior of who is in and who is not in the Program and identify the differences between both farm workers.

8.2 Policy implications

Although the agricultural sector has tended to receive more policy attention in rural areas, the rural poor derive their income from multiple sources. Notwithstanding problems with data reliability and comparability, there is growing evidence that, in Mexico, rural households commonly depend on non-farm sources for more than 50 percent of their income. Diverse income portfolios can include income from agriculture (own farm, tenant farmers or wage labour), migration (domestic and overseas, seasonal or longer-term) and remittances. Remittances are important to rural economies as a source of consumption or investment. In some areas, they may represent a potentially important and untapped source of investment finance. Any attempt to channel remittances into local investment opportunities requires careful prior appraisal.

Guest worker programs established initially between Mexico and the US and later between Mexico and Canada were designed to help economies in both the sending and receiving countries, and in particular the labour markets in the agricultural sector. CSAWP is an active program for the Mexican government established to help rural people within the parameters of the social policy carried out by the MLSW. Mexico's MLSW (the public office that controls and administers CSAWP in Mexico) regularly evaluates the Program, and the evaluators have repeatedly recommended that the Program should keep going as it offers a significant alternative for rural people to achieve a better standard of life, despite the high cost that running this Program represents for the Mexican government. However, the MLSW should also consider implementing more social programs to helping migrants use the remittances more efficiently.[113] Results

[113] There are a number of social programs that this Ministry carries out, like the 3X1 program whose main objective is to support initiatives from migrants who are already established abroad. These projects are

suggest that, in comparison with other guest worker programs, CSAWP has not built network migrations, so that if the Program stops, migration of Mexican farm workers to Canada will stop.

The results obtained in this study suggest that remittances could help to relax household liquidity restrictions. This means that in the absence of credit, households can self-finance their own investment projects with the help of the remittances they receive. However, the process is not ideal since the migrant workers in CSAWP play a double role: producing remittances and investing them. On the other hand, the benefits of remittances estimated in this study refer only to the short term, so that if the Mexican government is looking to foster economic development, policy makers should not base all the possibilities on the flow of remittances. Thus, policy makers should focus more carefully on finding the ways to satisfy labour demand in Mexico, not by stopping migration but by trying to create more employment and better-paid jobs. Future studies on remittances might explore whether these on-farm investments result in greater productivity (or sustainable livelihoods).

Based on the empirical results of the econometrics model in Chapter 7, it can be stated that in general remittances could be used as a tool of for rural development as they enhance investments and have multiplier effects. More particularly, results from equation [7.7.1] one can suggest that in order to increase the amount of remittances sent to Mexico with the related positive impacts (direct and indirect) seen on the other three equations namely, farm investments, on-farm income and non-farm income, the following

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funded by contributions from three sources: 25percent from the migrant, 25 percent from SEDESOL (Mexico's Ministry of Social Development) and 50 percent from State and County (Estado y Municipio).

recommendations can be made in terms of policy negotiations between both Canada and Mexican governments on:

a) Remittances can be increased if the living expenses in Canada (LEC) that Mexican migrants in the Program make during their stay in Canada are reduced. This reduction could be in some of the deductions Canadian employer make or to some extent providing them financial assistance to have their tax income filled correctly with the correspondent reimbursements.

b) Remittances can be enlarged if the length of contract is extended some weeks. On average respondents are working in Canada for almost six months, perhaps this could be extended to seven months and with this extra time respondents can make more money and spread out their income/investment portfolio in Mexico.

c) Finally, remittances can be increased if the hourly payment is revised and equalize according to other economic sectors in Canada, such as the industry and commerce.

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APPENDIXES

Appendix A

A.1 Description of Exogenous Variables

- **Region of origin.** Mexico's National Council of Science and Technology (CONACyT) has divided the 32 states of Mexico into 10 geographical areas: 1) Northwest and Peninsula, 2) North-centre, 3) Northeast, 4) West, 5) Centre, 6) Metropolitan, 7) East-Centre, 8) East-Gulf area, 9) South and 10) Southeast.

This study considers only eight of the above areas since none of the workers in the sample comes from areas one and two (see *Table 6.2*). In addition, those eight areas were grouped into three regions. Region 1 (REG1) encompasses CONACyT's areas three and four: the Northeast and Western areas that encompass seven states, namely Coahuila, Nuevo Leon and Tamaulipas in area three, and Jalisco, Nayarit. Colima and Michoacan in area four. Region 2 (REG2) covers CONACyT's areas five to eight: the Centre, Metropolitan area, East-Centre and East-Gulf areas including 12 states, namely Aguascalientes, Guanajuato, San Luis Potosi and Queretaro in area five; Estado de Mexico, Distrito Federal and Morelos in area six; Hidalgo, Puebla and Tlaxcala in area seven and Veracruz and Tabasco in area eight. Finally Region 3 (REG3) covers CONACyT's areas nine and ten: the South and Southeast areas, which includes six states, namely Guerrero, Oaxaca and Chiapas in area nine and Campeche, Quintana Roo and Yucatán in area ten.

- **Age**. Four dummy variables were used for the age of the interviewee:

AG1 D=1 if the worker is between 20 and 29 years old; D=0 otherwise
AG2 D=1 if the worker is between 30 to 39 years old; D=0 otherwise
AG3 D=1 if the worker is between 40 and 49 years old; D=0 otherwise
AG4 D=1 if the worker is over 49 years old; D=0 otherwise

Three dummy variable were used for the age of the spouse:

AGE1 D=1 if the spouse is between 16 and 29 years old; D=0 otherwise
AGE2 D=1 if the spouse is between 30 and 39 years old; D=0 otherwise
AGE3 D=1 if the spouse is over 40 years old; D=0 otherwise

- **Marital Status (MS)**. Since most of the workers (252 out of 257) are married or live with a common-law spouse, one dummy variable is used with D=1 if the worker has a partner; D=0 otherwise.
- **Education**. The original data gathered in the interviews include the years of schooling of the interviewee. However, to assess the relationship of this variable with the motivations to migrate, four dummy variables were considered for the case of interviewee:

EDUC1 with D=1 if the worker's education includes elementary school only; D=0 otherwise
EDUC2 with D=1 if the worker's education includes secondary school only; D=0 otherwise
EDUC3 with D=1 if the worker's education includes high school only; D=0 otherwise
EDUC4 with D=1 if the worker's education includes more than high school; D=0 otherwise

For the case of the education of the spouse, one dummy variable (EDUCS) was considered with D=1 if the spouse is educated; D=0 otherwise.

- **Spouse and children economically dependent.** For the case of the economic dependency of the spouse (Spouse), a dummy variable was considered with D=1 if the spouse does depend economically on her partner.

For the case of the economic dependence of the children, three dummy variables were considered:

Child1 with D=1 if there are fewer than two economically dependent children; D=0 otherwise

Child2 with D=1 if there are between two to four economically dependent children; D=0 otherwise

Child3 with D=1 if there are more than four economically dependent children; D=0 otherwise

- **English skills**. Two dummy variables were considered, one for skill in speaking basic English (SBE) and the second dummy for skill in reading basic English (RBE). Hence the variables were:

SBE dummy with D=1 if the worker is able to speak basic English; D=0 otherwise

RBE with D=1 if the worker is able to read basic English; D=0 otherwise

- **Occupation**. This variable accounted for the activities that workers perform in Mexico. Three groups were considered: agriculture-related activities (AGR), construction and factory work (CNSTR), and commerce (COMM). Therefore, three dummy variables were constructed for each occupation field:

AGR with D=1 if the worker works in agriculture-related activities, either running a farm or as day-labourer; D=0 otherwise

CNSTR with D=1 if the worker performs activities in Mexico's construction sector or factories; D=0 otherwise

COMM1 with D=1 if she/he works in the commerce sector in Mexico

- **Number of years working in Canada (Ycan)**. Three dummy variable were considered for this variable:

YCan1 with D=1 if the participant has been coming to Canada for less than 5 years; D=0 otherwise

YCan2 with D=1 if the participant has been coming between 5 and 10 years; D=0 otherwise

YCan3 with D=1 if the participant has been coming for more than 10 years; D=0 otherwise

- **Operate a Farm (OpF).** Since running a farm in Mexico could be related with on-farm business factor (Factor 2) motivations to migrate, the variable OpF is included in the regression. Therefore a dummy variable was considered with D=1 if the migrant worker operates a farm in Mexico; D=0 otherwise.

- **Migration to the United States experience (USM).** This is a dummy variable where D=1 if the worker did migrate to the US before participating in CSAWP; D=0 otherwise.

Appendix B

B.1 In-depth interview guide.

Farm-Level Impacts in Mexico of Participation in Canada's Seasonal Agricultural Workers Program (CSAWP)

Phase 1 Interview Guide

Background Questions:

1. Where do you come from in Mexico?
2. Can you tell me a little about yourself and your family? How many dependents do you have?
3. How many seasons, including this one, have you been coming to Canada?
4. How many seasons, including this one, have you worked on this particular farm? [If participant has worked on other farms, ask: where did you work before?]
5. What work do you do on this farm? Has this changed over time? How? Why?
    a. What work did you do on the other farm(s) you have worked on?
6. How long is your contract this year? Has it always been this long? Why or why not?
7. Can you give me a short history of yourself both before and since you started to work in Canada? Why you came?
8. What did you do before starting to come to Canada?
9. What do you do when you are back in Mexico? Has this changed over time? How? Why?
10. How did you become involved in the program? How long did it take you? Did you face any problems? Why?
11. What other sources of income does your family have besides the money you earn in Canada? I am interested in all sources of income, including the sale of livestock or crafts. Have these changed over time? How? Why?

Skills and Income:

1. Approximately, how much did you earn in Canada last year?
2. How much do you expect to earn this year?
3. Do you earn more than you would have earned in Mexico? Why?
4. How much of this money do you spend in Canada?
5. How much of this money goes back to Mexico?
6. How often do you send money back to Mexico? How do you send it back?
7. How is the income you earn in Canada used in Mexico? Has this changed over time? How? Why?
8. Have you gained any skills while working in Canada that you can use back in Mexico?
9. Have you actually applied these skills? To what? What have been the benefits? What stops you applying these skills?
10. Is the income earned by your family enough to meet your needs? If not, what needs are you not able to meet? Has this changed over time? How? Why?
11. How would you describe your family's standard of living compared to the time before you started to work in Canada? Why has it changed in this way?
12. How would you describe your household's standard of living compared to others in your community? How has this changed over time? Why?

Farming in Mexico:

1. Do you have a farm in Mexico? Can you give me a short history of the farm?

2. How large is the farm? Do you own the land you farm? Do you rent any land? How has the size of the farm changed over time? Why? How has the amount of land you own/rent changed over time? Why?
3. What crops do you grow on the farm? Has this changed over time? How? Why?
4. What livestock do you raise on the farm? Has this changed over time? How? Why?
5. How much of this is for your own consumption and how much for sale? How has this changed over time? Why?
6. How many people work on the farm? Do other members of the family work on the farm? How has this changed over time? Why?
7. Who is in charge of the farm when you are working in Canada? Who else works on the farm?
8. Do you work on the farm when you are in Mexico?
9. How easy is it for you to access markets for the products you produce? Has this changed over time? How? Why?
10. Do you invest any of the income you earn in Canada in your farm? Why? Has this changed over time? How? Why?
11. What investments have you been able to make on your farm that you would not have been able to do if you had not worked in Canada? Why did you make these particular investments?
12. How have these investments affected the way in which you farm?
13. Has the income you get from your farm changed because of these investments? How? Why?
14. Do you and your family spend more/less time farming than before you started to work in Canada? Why?
15. Are there sources of income other than farming in your community? What are they? Have these changed over time? How? Why?
16. Do you own the house in which you live? Can you describe your house to me? What investments have you been able to make in your house that you would not have been able to do if you had not worked in Canada? Why did you make these particular investments?
17. What other investments have you made both on and off of the farm? Why?
18. If not invested on farm or little investment: Why have you not made any/more investments on the farm?
19. What factors would encourage you to make more investments on the farm?
20. Do you face any problems in running your farm while you are working in Canada?

Overall experience:

1. What is your overall experience of working in Canada?
2. How could the program be improved?
3. In what ways could the benefits to you in terms of the farming skills you acquire be enhanced?
4. Would you recommend that one of your family or a friend worked in Canada? Why?
5. Is there anything else you would like to raise?

Appendix C C.1 Questionnaire.

Respondent ID: _____

Farm-Level Impacts in Mexico of participation in Canada's Seasonal Agricultural Workers Program (CSAWP)

Phase 2 Questionnaire

Date of interview: _____

Location: Bradf[1] Si[2] amington [3]
Other[4]

Farm [1] Support Ce[2]
Other [3]

Background questions:
I would first like to ask you some questions about yourself and your family:

1. Where do you live in Mexico?

_____ _____ ___ _____
State County
Community

2. Where are you from originally in Mexico?

_____ _____ _____
State County
Community

3. How old are you? _____

4. Gender: Male: O[1] Female: O[2]

5. What is your current marital status?
MarriedO[1] SingleO[2] Living togetherO[3] WidowedO[4] Divorced/separatedO[5] OtherO[6]

6. Who owns the house that your family lives in?
It is our property O[1] It belongs to a relative and we do not pay any rent O[2]
We are renting it O[3] We pay a mortgage O[4] Other[5]_____

7. What level of education did you reach? _____ level
8. Can you please tell me who else is in your family and who is economically dependent on you? How old are they? Do they still go to school? What level of schooling did they reach? What do they do: study or work? What do they do?

Relationship	Age	Highest school level	Occupation 1	Occupation 2	Dependent Yes/No
Wife					
son[1] daughter[2]					
son[1] daughter[2]					

son[1] daughter[2]					
son[1] daughter[2]					
son[1] daughter[2]					
son[1] daughter[2]					

9. How well can you speak English? (*Tick one*):
Not at all O[1] Basic O[2] Moderate O[3] Well O[4] Very well O[5]

10. How well can you read English? (*Tick one*):
Not at all O[1] Basic O[2] Moderate O[3] Well O[4] Very well O[5]

11. Have you ever worked in the United States? (*Tick one*):
Yes: O[1] *Go to Question 12:*
No: O[2] *Go to Question 13:*

12. Did you go there with a contract? How long had you been there?
Work with work permit O for _____ months/years/seasons
Work without a work permit O for _____ months/years/seasons

13. What did you do in Mexico before you began seeking work outside the country?

Work in Canada:
I would now like to ask you some questions about the work you do in Canada.

14. What was the first year you came to work in Canada? _____

15. Have you been coming to work in Canada continuously since that time? (*Tick one*)
Yes: O[1]
No: O[2]

16. How many years in total have you worked in Canada? _____

17. How important were each of the following as reasons why you came to work in Canada? (*Tick one per line)*

	Very Important [5]	Important [4]	Neither Important nor Unimportant [3]	Unimportant [2]	Very Unimportant [1]
To earn more income	O	O	O	O	O
To enhance my family's standard of living	O	O	O	O	O
To earn a stable income	O	O	O	O	O
Low wage rates in Mexico	O	O	O	O	O
To put my children through school	O	O	O	O	O
To improve my house	O	O	O	O	O
To invest in my farm	O	O	O	O	O
To invest in new business opportunities	O	O	O	O	O
Experiences of others that work in Canada	O	O	O	O	O
To see another country	O	O	O	O	O
To learn new skills	O	O	O	O	O
As a way to emigrate to Canada	O	O	O	O	O
Other (*Specify*): _____	O	O	O	O	O

18. How does your overall experience of working in Canada compare to your prior expectations before coming? (*Tick one*)
Much better: O[1]
Better: O[2]

About the same: O[3]
Worse: O[4]
Much worse: O[5]

19. What crops are grown on the farm where you currently work? (*Tick all that apply*)

Carrots	O	Apples	O
Celery	O	Cherries	O
Cucumbers	O	Wine grapes	O
Onions	O	Grapes	O
Peppers	O	Strawberries	O
Tomatoes	O	Raspberries	O
Ginseng	O	Blueberry	O
Lettuce	O	Peaches	O
Tobacco	O	Pears	O
Flowers	O	Plums	O

Other (*Specify*): _____ _____

20. How are the crops on this farm and on which you personally work grown? (*Tick all that apply*)

Field: O[1]
Greenhouse: O[2]
Other (*Specify*): _____ O[3]

21. Have you always worked on the same farm? (*Tick one*)

Yes: O[1] *Go to Question 24:*
No: O[2] *Go to Question 22:*

22. What crops were grown on the other farms where you have worked and on which you personally worked? (*Tick all that apply*)

Carrots	O	Apples	O
Celery	O	Cherries	O
Cucumbers	O	Wine grapes	O
Onions	O	Grapes	O
Peppers	O	Strawberries	O
Tomatoes	O	Raspberries	O
Ginseng	O	Blueberry	O
Lettuce	O	Peaches	O
Tobacco	O	Pears	O
Flowers	O	Plums	O

Other (*Specify*): _____ _____

23. How were the crops on the other farms where you have worked and on which you personally worked grown? (*Tick all that apply*)

Field: O[1]
Greenhouse: O[2]
Other (*Specify*): _____ O[3]

24. How long is your contract this year? _____ months
25. How many hours do you work in a normal week? _____ hours
26. How many hours do you work in a week when there is low production? _____ hours
27. How many hours do you work in a week when there is high production? _____ hours
28. How much did you earn per hour this year? CAN$_____ per hour
29. Do you think you will receive a bonus this year?

Yes: O[1] *Go to Question 30:*
No: O[2] *Go to Question 31:*

30. How much will it be? CAN$ _____

31. Approximately, how much income do you think you will make from your work in Canada this year, after tax and other deductions? CAN$ _____

32. Approximately, what proportion of your household's income will this represent?
_____%

33. How long was your contract last year? _____

34. How many hours did you work in a normal week last year? _____

35. How much did you earn per hour last year? CAN$_____ per hour

36. Approximately, how much income did you make from your work in Canada last year after tax and other deductions? CAN$ _____

37. Approximately, what proportion of your household's income did this represent?
_____%

38. What is the longest contract you have had? _____ weeks/months

39. Your family depends 100% on you? Or is there other person who help you economically?
They depend on mi 100% O
Another person helps me O with _____ %

40. Was it the same five years ago?
Yes: O [1] *Go to question 42:*
No: O [2] *Go to question 41:*

41. Who else helped you five years ago?
My wife with _____ %
Mi eldest son/daughter with _____ %

42. Do you send money back to your family while you are working in Canada? (*Tick one*)
Yes: O[1] *Go to Question 43:*
No: O[2] *Go to Question 46:*

43. How frequently do you send money to your family while you are working in Canada? (*Tick one*)
Weekly: O[1]
Every 2 weeks O[2]
Monthly O[3]
Other (*Specify*): _____ O[4]

44. How do you send it?
Electronic deposit (*FinMex, Western Union, Rhia*) O[1]
Bank deposit O[2]
Other (Specify) O[3] _____

45. What do they charge per transaction? CAN$ _____

46. Approximately, how much does it cost you to live in Canada each week? CAN$_____/week

47. What things will/do you purchase to take back to Mexico?

_____ _____ _____

_____ _____ _____

48. How much in total will you send to Mexico this year? _____ CAN$

49. Approximately, how much of the income you earned in Canada last year was spent in the following ways?

School fees: _____pesos
General consumption (food, clothing etc.) _____ pesos
Electronic appliances _____ pesos
Purchase of house/house improvements: _____ pesos
Buying transport: _____ pesos
Investments in farm (buy land, tools, seeds, equipment, etc: _____ pesos
Investments in other income opportunities: _____ pesos
Paying debts:
_____ pesos
Religious festivities, weddings, birthdays, etc. _____ pesos
Other (*Specify*): _____ _____ pesos

50. Could you cover these expenses without working in Canada?

Yes: O[1]
No: O[2]

Work in Mexico:

I would now like to ask you about your farm and other work in Mexico.

51. Do you currently operate a farm in Mexico? (*Tick one*)

Yes: O[1] *Go to Question 52:*
No: O[2] *Go to Question 75:*

52. The land you operate now, did you buy it? Rent it? Or was it inherited?

I bought it O[1]
I inherited it O[2]
I rent it O[3]

53. How much land do you currently cultivate? Hectares: _____

54. Is it the same as five years ago?

Yes: O[1] *Go to Question 56:*
No: O[2] *Go to Question 55:*

55. How much big/less is it now? _____hectares

56. Of the land you have now, how much does each of the following account for? *(Check adds to total in Question 52)*

Ejido: _____ Hectares
Own/family property: _____ Hectares
Rented: _____ Hectares
Other (*Specify*): _____ _____ Hectares

57. Is it the same five years ago?

Yes: O[1] *Go to Question 59:*
No: O[2] *Go to Question 58:*

58. How different is now? _____

59. What crops are grown on the farm? (*Tick all that apply*)

Beans	O	Mango	O
Carrots	O	Orange	O
Chayote	O	Pineapple	O
Chili pepper	O	Strawberry	O
Green peas	O	Sorghum	O
Maize	O	Tomato	O
Nopal	O	White onion	O
Oat (forage)	O	Coffee	O
Peppermint	O	Sugar cane	O
Prickly pear	O	Tobacco	O
Flowers	O		

Other(s) (*Specify*): _____ _____ _____

60. Are those the same five years ago?

Yes: O[1] *Go to Question 62:*
No: O[2] *Go to Question 61:*

61. What crops were grown on the farm five yeas ago?

Beans	O	Mango	O
Carrots	O	Orange	O
Chayote	O	Pineapple	O
Chili pepper	O	Strawberry	O
Green peas	O	Sorghum	O
Maize	O	Tomato	O
Nopal	O	White onion	O
Oat (forage)	O	Coffee	O
Peppermint	O	Sugar cane	O
Prickly pear	O	Tobacco	O
Flowers	O		

Other (*Specify*): _____ _____ _____

62. Do you have animals in your farm?

Yes: O[1] *Go to Question 63:*
No: O[2] *Go to Question 66:*

63. What livestock do you have on the farm? (*Tick all that apply*)

Hogs: O Hens: O
Cows: O Goats: O Sheep: O Turkey: O

Other (*Specify*): _____ _____
_____

64. Are those the same five years ago?

Yes: O[1] *Go to Question 66:*
No: O[2] *Go to Question 65:*

65. What livestock did you have five years ago?

Hogs: O Hens: O Cows: O Goats: O Sheep: O Turkey: O

Other (*Specify*): _____ _____ _____

66. Approximately, what proportion of the production on the farm is sold and what proportion is for family consumption? *(Check adds to 100%)*

Product/animal	Sold (%)	Consumption or recycle(%)

67. How far is the farm from the main market you supply? _____ km

68. Approximately, what proportion of the household's income is derived from the farm?

_____%

69. Who manages the farm while you are working in Canada?

_____

70. How many members of the family work on the farm while you are working in Canada?

Permanent/Full-time: _____

Casual/Part-time: _____

71. How many paid workers do you regularly employ on the farm while you are working in Canada?

Permanent/Full-time: _____

Casual/Part-time: _____

72. Do you personally work on the farm when you are in Mexico? (*Tick one*)

Yes: O[1]

No: O[2]

73. How many members of the family work on the farm while you are in Mexico?

Permanent/Full-time: _____

Casual/Part-time: _____

74. How many paid workers do you regularly employ on the farm while you are in Mexico?

Permanent/Full-time: _____

Casual/Part-time: _____

75. Do you personally have any other sources of income in Mexico apart from the farm? (*Tick one*)

Yes: O[1] *Go to Question 76:*

No: O[2] *Go to Question 79:*

76. What other sources of income do you have in Mexico? (*Itemise all)*

a. _____
b. _____
c. _____
d. _____
e. _____

77. Are those the same five years ago?

Yes:	O[1]	*Go to Question 79:*
No:	O[2]	*Go to Question 78:*

78. What other sources were they?

a. _____
b. _____
c. _____
d. _____
e. _____

79. Dou you have PROCAMPO?

Yes:	O[1]	*Go to Question 80:*
No:	O[2]	*Go to Question 81:*

80. How much is it? _____ pesos

81. Is there any member of your family working in the USA?

Yes:	O[1]	*Go to Question 82:*
No:	O[2]	*Go to Question 84:*

82. Does your household receive remittances from any one else besides you?

Yes:	O[1]	*Go to Question 83:*
No:	O[2]	*Go to Question 84:*

83. Who from your family is working abroad? *(Itemise all)*

a. _____
b. _____
c. _____
d. _____
e. _____

Impact of working in Canada:

I would now like to ask you about the impact on you, your family and your farm of working in Canada.

84. Do you consider that your household's income today is higher or lower than if you did not work in Canada? (*Tick one*)

Higher:	O[1]	*Go to Question 85:*
About the same:	O[2]	*Go to Question 86:*
Lower:	O[3]	*Go to Question 85:*

85. How much higher or lower do you consider your household's income is compared to if you did not work in Canada?

Much Higher (more than the double, triple):	O[1]
Higher (the double):	O[2]
About the same:	O[3]
Lower:	O[4]

Much lower: O[5]

86. How would you consider the livelihood of your family compared to others in the village in Mexico where you live? (*Tick one*)

Much Higher: O[1]
Higher: O[2]
About the same: O[3]
Lower: O[4]
Much lower: O[5]

87. How would you consider the livelihood of your family today compared to if you did not work in Canada? (*Tick one*)

Much Higher: O[1]
Higher: O[2]
About the same: O[3]
Lower: O[4]
Much lower: O[5]

88. Have invest in your farm the last five years?

Yes: [1] *Go to Question 88:*
No: [2] *Go to Question 110:*

89. Approximately, how much have you invested in your farm in Mexico over the past five years? *(Indicate currency)*

_____ (Ps/CAN$) *(If made investments go directly to Question 90)*

90. What investments have you made on your farm in the last five years? *(Indicate currency)*

Land: _____ (Ps/CAN$) *Go to Q. 92:*
Equipment: _____ (Ps/CAN$) *Go to Q. 93:*
Irrigation: _____ (Ps/CAN$)
Livestock: _____ (Ps/CAN$) *Go to Q. 98:*
Seeds, fertilizers _____ (Ps/CAN$) *Go to Q. 101:*
Crop improvement _____ (Ps/CAN$)
Crop Diversification

_____ (Ps/CAN$)
Building construction/improvement:_____ (Ps/CAN$) *Go to Q. 99:*
Other (*Specify*): _____ (Ps/CAN$)

91. Would you have been able to make these investments without your income from working in Canada? (*Tick one*)

Yes: O[1]
No: O[2]

92. How much land did you buy? _____ hectares.

93. What equipment/irrigation equipment have you purchased for use on your farm in Mexico in the last five years?

a. _____
b. _____
c. _____
d. _____
e. _____

94. Have you purchased any of this equipment in Canada for use on your farm in Mexico? (*Tick one*)

Yes: O[1] *Go to Question 95:*
No: O[2] *Go to Question 98:*

95. What equipment have you purchased in Canada in the last five years?

a. _____
b. _____
c. _____
d. _____
e. _____

96. Approximately, how much have you spent on equipment in Canada for use on your farm in Mexico? CAN$ _____

97. What was the main reason you purchased this equipment in Canada rather than Mexico?

_____
_____

98. What livestock have you purchased for your farm in Mexico in the last five years?

a. _____
b. _____
c. _____
d. _____
e. _____

99. What buildings/building improvements have you invested in livestock on your farm in Mexico in the last five years?

a. _____
b. _____
c. _____
d. _____

100. Are you more able to afford improved and/or additional inputs compared to five years ago? (*Tick one*)

Yes: O[1] *Go to Question 101:*
No: O[2] *Go to Question 102:*

101. What improved and/or additional inputs are you now able to afford? (*Tick all that apply*)

Seed:
O
Fertilizer:
O
Pesticides: O
Animal feed: O
New equipment O
Infrastructure improvements O
Crop improvement O
Other (*Specify*): _____ O
_____ O
_____ O

102. Have you purchased any seed, fertilizer or other inputs in Canada for use on your farm in Mexico? (*Tick one*)

Yes: O[1] *Go to Question 103:*
No: O[2] *Go to Question 106:*

103. What inputs have you purchased in Canada for use on your farm in Mexico?

a. _____
b. _____
c. _____
d. _____
e. _____

104. Approximately, how much have you spent on inputs in Canada for use on your farm in Mexico? CAN$ _____

105. What was the main reason you purchased these inputs in Canada rather than Mexico?

_____

Credit information

106. Have you needed to access credit/borrow money to invest on your farm since you started to work in Canada? (*Tick one*)

Yes: O[1]
No: O[2]

107. From where are you able to access credit/borrow money? (*Tick all that apply*)

Commercial banks: O
Government schemes: O
PROCAMPO: O
PROGRESA: O
PROGAN: O
SEDAGRO: O
Informal moneylenders: O
Friends/family: O
Other (*Specify*): _____ O

108. Are you able to get credit/borrow money to invest on your farm today? (*Tick one*)

Yes: O[1] *Go to Question 109:*
No: O[2] *Go to Question 110:*

109. Have you actually accessed credit/borrowed money to invest on your farm over the last five years? (*Tick one*)

Yes: O[1]
No: O[2]

110. Has working in Canada made it easier or more difficult to access credit/borrow money to invest on your farm? (*Tick one*)

Easier: O[1] *Go to Question 111:*
No change: O[2] *Go to Question 112:*
More difficult: O[3] *Go to Question 111:*
I do not know: O[4] *Go to Question 112:*

111. In what ways has it made it easier/more difficult to access credit/borrow money?

_____
_____

112. Were you able to access credit/borrow money to invest on your farm five years ago?

Yes: O[1] *Go to Question 113:*
No: O[2] *Go to Question 114:*

113. From where were you able to access credit/borrow money to invest in your farm five years ago? (*Tick all that apply*)

Commercial banks:	O[1]
Government schemes:	O[2]
Informal moneylenders:	O[3]
Friends/family:	O[4]
Other (*Specify*): _____	O[5]

114. How important was each of the following reasons in your decision to NOT make investments on the farm? (*Tick one per line*)

	Very Important [5]	Important [4]	Neither Important nor Unimportant [3]	Unimportant [2]	Very Unimportant [1]
I am reluctant to invest in my farm because I do not own the land.	O	O	O	O	O
The costs of labour in my community are prohibitively high	O	O	O	O	O
The income from my farm is not enough for my family basic needs	O	O	O	O	O
Working for what I earn from the farm is not worth it	O	O	O	O	O
Difficult accessing labour	O	O	O	O	O
Too risky	O	O	O	O	O
More profitable opportunities available	O	O	O	O	O
Difficult accessing markets	O	O	O	O	O
Plots are far form markets to sell	O	O	O	O	O
Nobody to look after my farm while I am away	O	O	O	O	O
I have no credit opportunities	O	O	O	O	O
The cost of capital locally is too high to invest in my farm.	O	O	O	O	O
Other (*Specify*): _____	O	O	O	O	O

115. If you earn the double or triple in Canada, would you invest in your farm? Or what else in?

In my farm:	O[1]	*Go to Question 117:*
In other business:	O[2]	*Go to Question 116:*

116. What else would you invest in?

Own business:		O[1]
Workshop (smithy, carpentry, textile, mechanic):	O[2]	
Corner store:	O[3]	
Small restaurant, tacos stand:	O[4]	
Others:		O[5]
Taxi:	O[6]	
Buy land to start agriculture activities:	O[7]	

New Skills acquired in Canada

117. Have you acquired any skills from your work in Canada?

Yes: O[1] *Go to Question 118:*

No: O[2] *Go to Question 121:*

118. What techniques or skills did you learn?

a. _____

b. _____

c. _____

d. _____

e. _____

f. _____

g. _____

119. Were you able to use them in Mexico? (*Tick one*)

Yes: O[1] *Go to Question 122:*

No: O[2] *Go to Question 120*

120. What factors have limited your ability to use the skills you have learned in Canada on your own farm in Mexico?

_____

_____

_____

_____

_____

_____

121. Why did not you learn anything?

_____

_____

_____

_____

122. Below are some statements made by Mexican workers in Canada such as you about their own farms. Please tell me how much you agree or disagree with each from your own experiences on your farm. (*Tick one per line)*

	Strongly Agree [5]	Agree [4]	Neither Agree nor Disagree [3]	Disagree [2]	Strongly Disagree [1]
I have no other income opportunities except farming.	O	O	O	O	O
I sow my land so that my family has something to eat.	O	O	O	O	O
I sow maize to make good tortillas.	O	O	O	O	O
If I do not work my land, it can be taken away from me.	O	O	O	O	O
There are many good opportunities to sell the things I produce on my farm.	O	O	O	O	O
My land is close from the markets I might supply	O	O	O	O	O
The income from farming is sufficient to cover my family's basic needs.	O	O	O	O	O
I can easily access labour to work on my farm.	O	O	O	O	O
It is the only legacy I have for my					

children.	O	O	O	O	O
Farming is the traditional activity in my community.	O	O	O	O	O
The price of the land in my community is not expensive so I can afford it.	O	O	O	O	O
Working in Agriculture is a good business	O	O	O	O	O
When I am away working in Canada, there are friends and family to look after the farm.	O	O	O	O	O
Other (*Specify*): _____	O	O	O	O	O
_____	O	O	O	O	O
_____	O	O	O	O	O

123. If you earn the double or triple in Canada, would you invest in your farm? Or what else in?

In my farm: O[1] *Go to Question 125:*
In other business: O[2] *Go to Question 124:*

124. What other business would you invest in?

Own business: O[1]
Workshop (smithy, carpentry, textile, mechanic): O[2]
Corner store: O[3]
Small restaurant, tacos stand: O[4]
Others: O[5]
Taxi: O[6]
Buy land to start agriculture activities: O[7]

125. Below are some constraints that Mexican workers in Canada such as you may face in operating their own farms. Please tell me how important each of these constraints is for you personally. (*Tick one per line*)

	Very Important [5]	Important [4]	Neither Important nor Unimportant [3]	Unimportant [2]	Very Unimportant [1]
There is no crop insurance	O	O	O	O	O
Too risky	O	O	O	O	O
Difficulty in plagues control	O	O	O	O	O
Frequent drought problems	O	O	O	O	O
Frequent flooding problems	O	O	O	O	O
Accessing markets	O	O	O	O	O
Income uncertainty	O	O	O	O	O
The quality of land is poor	O	O	O	O	O
Availability of credit	O	O	O	O	O
Availability of land	O	O	O	O	O
The price of land is high	O	O	O	O	O
Accessing equipment	O	O	O	O	O
Cost of equipment	O	O	O	O	O
Access to irrigation	O	O	O	O	O
Availability of family labour	O	O	O	O	O
Availability of farm labour force	O	O	O	O	O
Cost of labour	O	O	O	O	O
Availability of inputs	O	O	O	O	O
Cost of inputs	O	O	O	O	O

Accessing capital	O	O	O	O	O

126. Are there any other constraints or problems you face that we have not mentioned above?

_____

_____

_____

_____

127. Are there any other comments you would like to make?

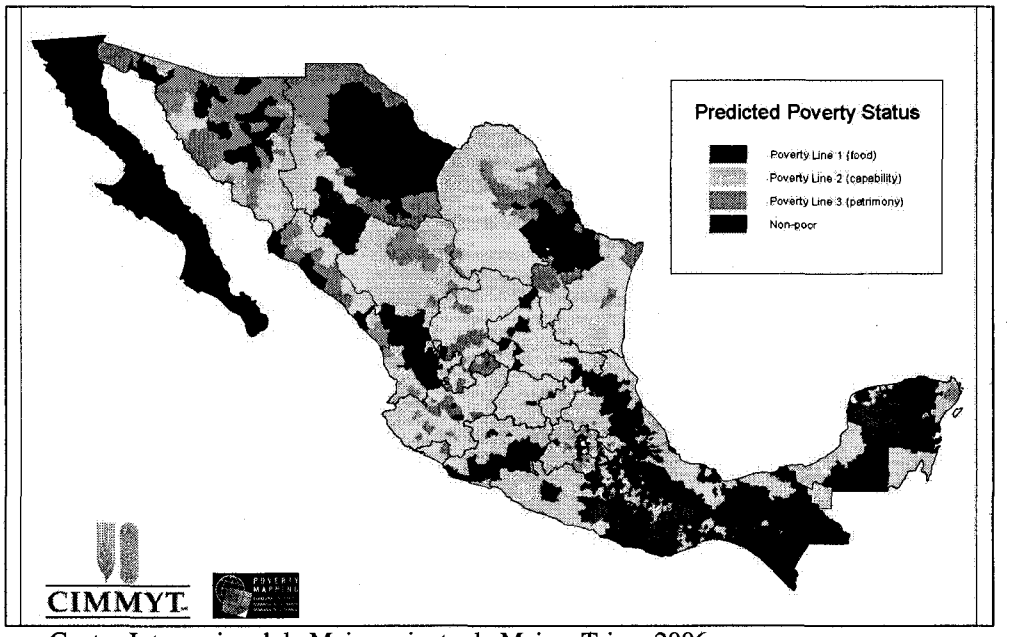
_____

_____

Many thanks for your time.

Appendix D

Map D.1 Poverty line by entities in Mexico, 2006



Source: Centro Internacional de Mejoramiento de Maiz y Trigo, 2006