

Agricultural Restructuring Of Ontario Tobacco Production

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Restructuring of specialized agricultural production systems is a widespread phenomenon in all developed economies. As such, flue-cured tobacco production in southern Ontario is both typical in terms of its restructuring in response to capital intensification, but atypical in that restructuring has also occurred as a result of official pressures to reduce domestic cigarette consumption. This paper first describes rapid initial growth of the Ontario flue-cured tobacco sector from 1920 to its adoption of supply management in 1957. It then examines the two subsequent periods of restructuring: the first from 1957 to 1981 characterized by mechanization, intensification and inelastic market conditions; the second period from 1981 to the present, marked by the additional pressures of anti-smoking campaigns and legislation. While restructuring has affected all the areas of tobacco production, evidence suggests that peripheral and outlying regions have experienced the greatest reductions in farm numbers and tobacco acreage. A particular aspect of the restructuring has been how the state and individuals respond to the forces of restructuring. The dominant response in the Ontario tobacco sector has been to identify alternative agricultural enterprises. The paper reviews the state sponsored programs and summarizes the results of two tobacco sector case studies that investigated farmer responses to restructuring in the post 1981 period.

Keywords: Agricultural restructuring, flue-cured tobacco, farm diversification, Ontario

During the last 50 years agriculture in all developed economies has radically restructured as part of the industrialization of the agri-food system (Wallace 1992; Ilbery and Bowler 1998). At the farm level, the general model is one of a shift from small or medium scale, generally mixed-enterprise, to large-scale industrialized farms. This shift is characterized by increased labour substitution, capital investments in land, and energy-intensive inputs such as specialized machinery and chemicals, to support large scale, specialized crop, and/or livestock production. At the agri-food system level, the process involves integration between fewer and fewer industrialized farms, and between agribusiness and government. The latter two 'beyond the farm gate' elements are the most important players, influencing and controlling the restructuring process (Bowler 1985; Wallace 1985; Troughton 1986). The impacts of restructuring on agricultural systems in developed economies have been examined within a number of national contexts in the

United States (Vogeler 1981; Gregor 1982), Canada (Kneen 1989; Troughton 1989; Pierce 1994), Britain (Bowler 1992; Ilbery 1992; Yarwood 1996), Australia (LeHeron and Roche 1999; Lawrence 1999) and New Zealand (Cloke et al. 1990; Wilson 1995; Johnsen 1999). The processes underlying these changes in agricultural structure have been described in detail elsewhere (Troughton 1982, 1986; Bowler et al. 1992; Cloke and Goodwin 1992; Pierce 1994; Wilson 1995; Ilbery et al. 1997a). A number of theoretical perspectives have been advanced to explain processes of agricultural restructuring in advanced capitalist economies over the past twenty years, including: induced technical and institutional innovation; productionist and capital penetration; subsumption and uneven development; appropriation and substitution; post-industrial and human agency; and, societal-environmental dialectic (Pierce 1994; Ilbery and Bowler 1998; Lawrence 1999).

While these models acknowledge forces and processes at the macro-system level, locality studies provide an approach for analysing the impacts of macro-scale forces and conditions of political economy on rural and agricultural regions (Wilson 1995; Yarwood 1996). In developing the conceptual framework to describe rural and agricultural restructuring, others have suggested that locality studies also provide a useful framework for understanding the impacts of macro- and micro- scale political and economic conditions on individuals and rural communities (Bryant 1989; Britton et al. 1992; Ramsey and Smit 2001). This framework has also been adopted to examine responses to particular forces and conditions (Ilbery et al. 1997). Understanding changing conditions and responses at the local level is also consistent with the notion of sustainability that has been promoted within the context of agricultural restructuring (Troughton 1992; Pierce 1993; Ilbery et al. 1997; Potter 1997). Troughton (1992), for example, engages the issue of industrialization of agriculture as a system change that has negative implications on the sustainability of agricultural systems. Similarly, Lasley et al. (1993) describe the effects of industrialized agricultural systems on rural community viability.

Despite adherence to a general model of restructuring within a rapidly industrializing agri-food system, Canadian agriculture contains a number of distinct sectors, defined both by product specialization and geographic location, each exhibiting a particular version of restructuring (Troughton 1986, 1992, 1997; Pierce

1994; Mather 1999). In assessing the outcomes of restructuring at the farm and community levels in Canada, there have been two research foci: 1) the impacts of restructuring on farms, farm families and farming communities (Everitt and Bessant 1992; Bradshaw and Smit 1997; Ramsey and Smit 2001), and; 2) farmer responses or adaptations, to general as well as sector-specific structural changes (Fuller 1990; Smit et al. 1998; Ramsey 2003; McNally 2001; Ramsey and Everitt 2001). Drawing upon changes in the flue-cured tobacco sector of Canadian agriculture, this paper seeks to address both research foci mentioned above. Specific impacts of restructuring on tobacco farmers *per se* however, are addressed in greater detail elsewhere (Deloitte and Touche 1995; Stewart 1997; Ramsey 1998; Ramsey and Smit 2001).

The ability of agricultural systems to adapt to restructuring forces in an effort to achieve sustainability has emerged as a major theme in rural and agricultural geography (Grigg 1984; Ilbery 1985; Bowler et al. 1992; Ilbery et al. 1997; Ilbery 1998; McKenna et al. 2001). Diversification and alternative agricultural enterprise initiatives have also been advanced as types of responses to restructuring taken within agricultural systems in order to maintain, if not enhance, the sustainability of agricultural regions (Napton 1992; Smithers and Smit 1997; Ilbery et al. 1997b), localities (Brklacich et al. 1997), and farm households (Potter 1997; Johnsen 1999; Ramsey 2003). Addressing these aspects in the context of a localized specialist agricultural sector supports this recent trend in rural locality studies toward understanding how and why farm-level adaptation occurs from both the perspective of farmers and their families (Hansen and Muszynski 1990; Wilson 1994, 1995; Johnsen 1999).

The concept of 'rural restructuring', at least in how it has been conveyed in the literature, has become a topic of recent debate. Hoggart and Paniagua (2001), for example, argue that if rural restructuring is to be of value to social scientists as an analytical approach, a more comprehensive perspective beyond that which is grounded only in political economy is required. Here, it is argued that both sectoral (LeHeron and Roche 1999) and system (Burch et al. 1999; Lawrence 1999) restructuring remain dominant paradigms in the social science literature pertaining to changes in agricultural structure.

Hoggart and Paniagua (2001) review rural restructuring from two perspectives, as an analytical approach and as a descriptor to assess outcomes of change. Similar comparisons can be made for the application of the notion of agricultural restructuring, that is, with the two perspectives described by Hoggart and Paniagua (2001) being used in concert. The most recent and often cited examples relate to New Zealand. A political economy perspective has been applied to examine changes in political structures and economic conditions related to deregulation in the mid-1980s (Cloke et al. 1990; Wilson, 1995; LeHeron and Roche 1999) and to describe the outcomes of the changing political structures and economic conditions (Wilson 1994; Johnsen 1999).

In this paper, a general model of restructuring is presented that illustrates the role of a range of forces and conditions that, cumulatively, were responsible for a decline in the number and area of tobacco farms, particularly between 1981 and 1996. Since the mid-1990s, the sector has stabilized with fewer farmers growing larger crop areas than during any previous time period. The flue-cured tobacco sector in Ontario is an appropriate case for examining restructuring because it is a highly specialized, relatively new crop (post 1920) and it is concentrated in a few adjacent townships within one province of Canada from which it has both diffused and to which it has retreated. It has also experienced three distinct structural periods, with diverse responses within two to three generations. While exhibiting attributes of restructuring that are unique to this crop in this location, what has occurred illustrates the sequence and combination of many of the processes defined by the theoretical models, and the responses defined within a unique, but not atypical, political economy framework. That is, while the model recognizes a broad range of forces, such as biophysical conditions and social change, political and economic forces were the main driving forces of both restructuring of the tobacco sector and in diversification as a response by tobacco farmers to restructuring.

This paper describes the evolution and restructuring of the highly localized Ontario flue-cured tobacco growing sector and the reactions and responses to the process both by the industry and by individual farmers. The three periods in the development of flue-cured tobacco growing are identified, each of which is

characterized by unique patterns of structuring and restructuring, based on distinct forces and conditions. These are: (1) Growth and Organization (pre 1957); (2) Initial Restructuring (1958-1981); and, (3) Further Restructuring and the push to diversification (post 1981). The paper focuses on period three, particularly in contrasting between initial restructuring in response to forces of mechanization, intensification and inelastic market conditions, and further restructuring intensified by pressures from government unique to tobacco farming, namely cigarette taxation, tobacco restrictions, and anti-smoking campaigns and legislation. The Third Period saw diversification as a response at both the farm and state levels. While diversification was driven by necessity, it was also supported by federal and provincial programs that were designed to assist farmers exit the tobacco sector. This response is described first by reviewing federal and provincial programs and second by describing the results of two separate case studies that included investigations of diversification as a response to restructuring forces (Stewart 1997; Ramsey 1998, 2003). Balancing the role of forces and responses (particularly through diversification attempts) provides the broader perspective argued for by critics of rural restructuring (Hoggart and Paniagua 2001).

Flue-cured Tobacco Production In Southern Ontario

Tobacco production in Southern Ontario has a long tradition as part of Aboriginal and post-contact European agriculture. Tobacco has been grown on a commercial basis in Ontario since the introduction of burley or 'dark' tobacco in the 'Old Belt' in Kent and Essex Counties in the early nineteenth century. The 'flue-cured process' for cigarette tobacco was introduced to Canada in 1900 (Tait 1968) and during the 1920s, intensive commercial production of flue-cured varieties began on the Norfolk Sand Plain (Figure 1). This area of glacial outwash-derived sandy soils adjacent to Lake Erie offered ideal soil and climate conditions within Canada for growing the Bright leaf varieties of flue-cured tobacco. Initially concentrated in Norfolk County, tobacco growing expanded into other parts of the Sand Plain in adjacent Elgin, Oxford and Brant Counties. Later development saw further expansion onto sandy soils in both

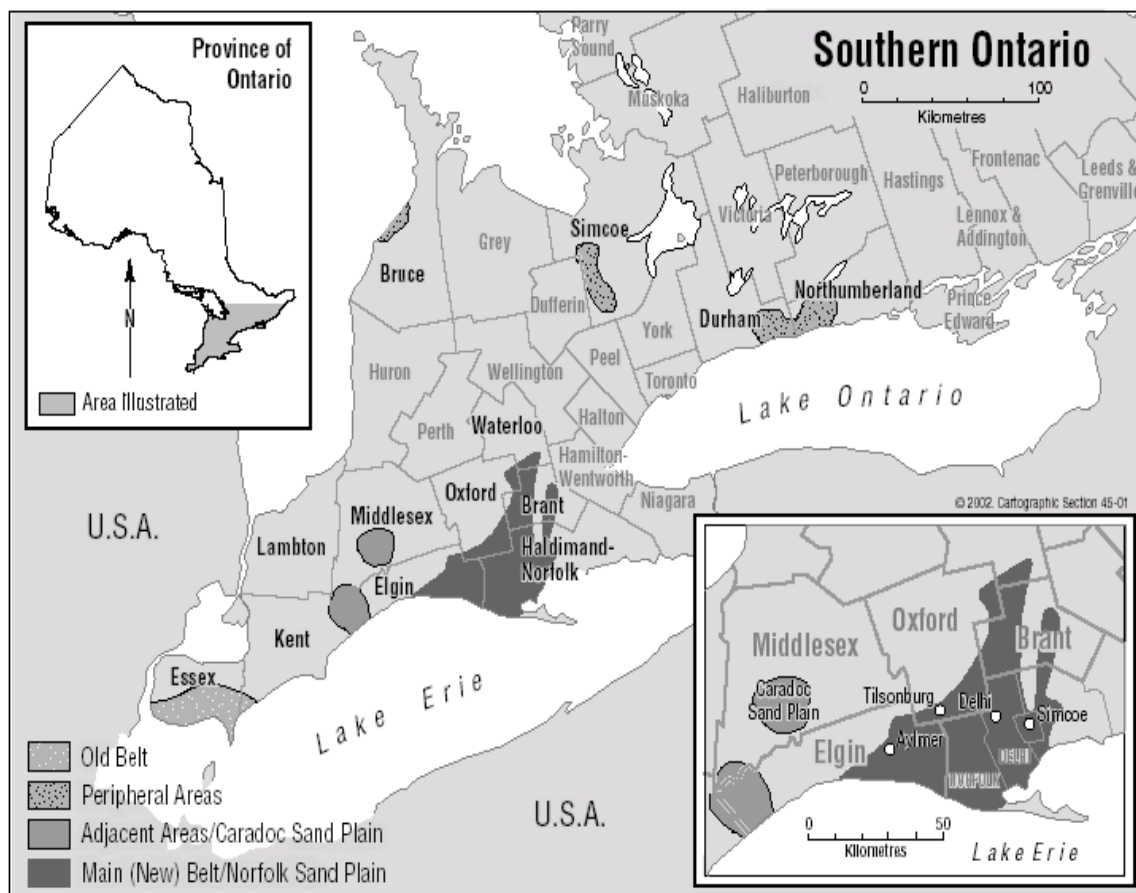


Figure 1. Tobacco growing areas in Ontario

adjacent counties and more peripheral areas (Figure 1). At present, Norfolk, Brant, Elgin and Oxford represent the core tobacco area in Ontario (hereafter referred to as the 'Main Belt') accounting for more than 90 percent of Ontario and 85 percent of Canadian flue-cured tobacco production, respectively. The Main Belt is home to the headquarters of the Ontario Flue Cured Tobacco Growers' Marketing Board (OFCTGMB), two tobacco auctions, two primary leaf processing plants, a tobacco museum, as well as a range of tobacco-related manufacturing firms and tobacco farm input suppliers and services. Given this concentration, the impacts of tobacco restructuring are felt across entire communities within the Main Belt, and to a lesser extent in outlying areas.

Period One: Initial Growth and Organization, 1920s to 1959

The development of the tobacco growing sector in Southern Ontario is the history of local entrepreneurship and the adoption

and diffusion of a 'new' crop, in relation to specific physical and economic conditions. Three characteristics which developed prior to 1957 are important to an understanding of the operation and organization of tobacco production, and its subsequent restructuring, namely: its rapid expansion, farming practice, and marketing arrangements. Rapid expansion of flue-cured tobacco production in southern Ontario took advantage of two key opportunities: one, an expanding market for cigarettes, stimulated by World War 1 (Canada 1955) and more liberal social attitudes, and; two, the availability of cheap land suitable for tobacco which had proven to be less suitable for other crops (Hall 1952). The prime area of cheap land was the Norfolk Sand Plain, where expansion began in the mid-1920s and soon eclipsed other flue-cured and burley production in the 'Old Belt' (Figure 1). Prior to 1940, the rapid growth of tobacco farming remained confined to the 'New' or Main Belt (Hall 1952). Thereafter, tobacco farming, by then a proven high income enterprise, diffused to some other outlying sand plain locations, both adjacent to the

Main Belt (western Elgin and Middlesex Counties), and eventually to more remote or peripheral areas (Bruce, Durham, Lambton, Northumberland, Simcoe Counties) (Figure 1). However, while the proportion of farms in the Main Belt decreased, overall growth in the tobacco growing sector continued to favour this area. Figure 2 illustrates the areal shift of production from the Old to the Main Belt, while Figure 3 documents the substantial and continuous growth of area, production and value of the flue-cured tobacco crop during period one⁽¹⁾. During this period,

the number of flue-cured tobacco farms in Ontario grew to a total of more than 3,800 by 1956 (Tait 1968).

During most of Period One, tobacco production was a unique cash crop in Ontario. Whereas the large majority of Ontario farms were mixed crop and livestock operations, flue-cured tobacco began, and remained a specialized enterprise. A key reason was its intensive labour requirements (Hall 1952). Production, although specialized, was not mechanized. It utilized a large quantity of family and seasonal hired labour applied to the

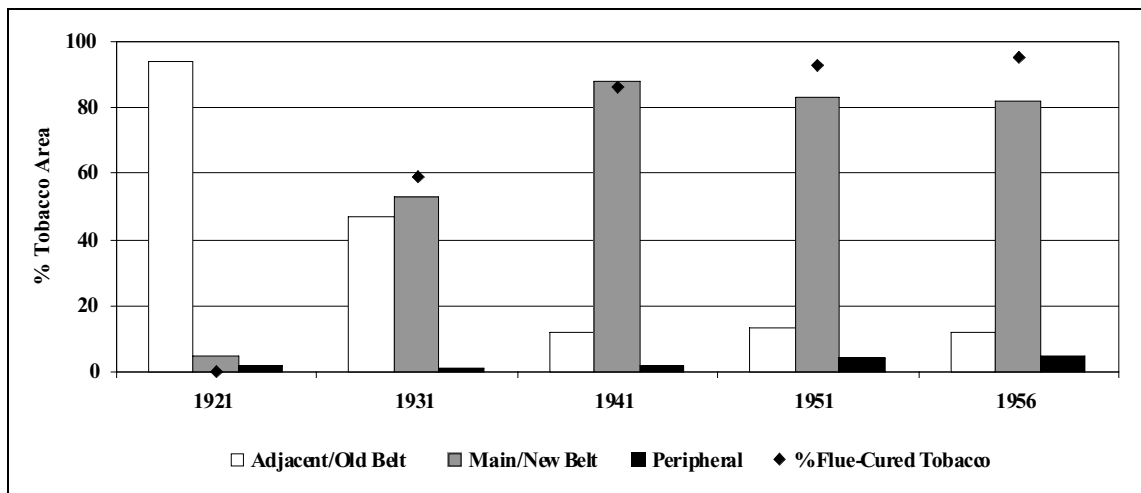


Figure 2. Proportion of Ontario tobacco area by region, 1921-1956
(Sources: DBS, 1923, 1936, 1947, 1950, 1953, 1957)

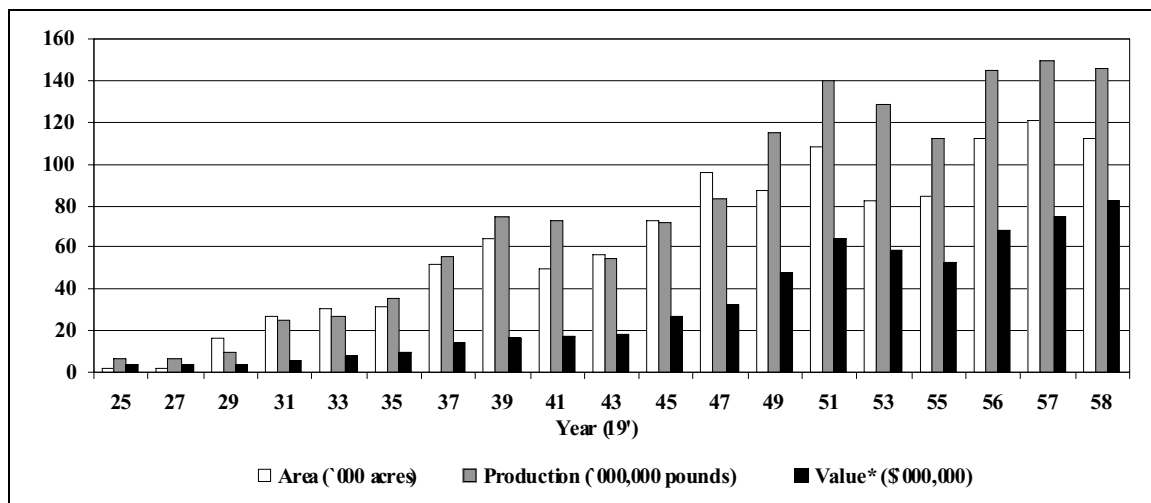


Figure 3. Area, production, and value of flue-cured tobacco, Ontario, 1925-1959
(Sources: DBS, 1926-1959). *Prices not adjusted for inflation.

sequence of stages of production, harvesting and preparation of the crop for sale (Tait 1968). This resulted in a mix of owner-operated family farms and larger, multi-unit 'plantations', the latter often operated on a sharecropping basis. Tobacco farming attracted a succession of immigrant farm families, many of whose labour was translated into subsequent farm ownership. Apart from the horses or mules used for field work, livestock were generally absent, as were other field crops, except wheat or rye in rotation. In addition, tobacco infrastructure, including specialized buildings (greenhouses, curing kilns, and pack barns) and irrigation, were also unique to the crop.

Although advantageous physical conditions, allied with the application of family labour, were key ingredients to the expansion of tobacco farming, a further important element that emerged in the early decades was the need to organize in relation to agribusiness and marketplace. The tobacco market and cigarette manufacturing were in the hands of a small group of tobacco companies, whereas the individual farmer was at the classic disadvantage of pure competition versus this oligopoly. In response, as early as the 1930s the Ontario tobacco farmers attempted to organize collectively to control the price and conditions of sale (Restrictive Trade Practices Commission 1956; Tait 1968). Several groups were established between 1932 and 1934, but finally the Ontario Flue-Cured Tobacco Marketing Association, with both grower and tobacco manufacturing company participants, was established and operated from 1936 to 1956. This Association finally collapsed due to grower-company conflicts, and in 1957 it was replaced by the Ontario Flue-Cured Tobacco Growers' Marketing Board (Tait 1968).

The Board was government sanctioned under the Ontario Farm Products Marketing Act, but exclusively grower controlled thus making it the first Ontario example of supply management (Perkin 1962; Tait 1968). The Board assumed control over production through the allocation of a quota of tobacco growing 'rights', or Basic Marketable Acreage (BMA), to each member farm, and was thus able to negotiate the size and base price for each annual crop through prior negotiation with the tobacco companies (Tait 1968).

Despite some initial problems between the Board and the companies, in the late 1950s tobacco was the buoyant farm sector in Ontario, and tobacco farm and per acre receipts were the

highest of all agricultural enterprises in Canada (Dominion Bureau of Statistics 1963; Dean and Matthews 1969). Production continued to extend to outlying areas (Figures 1 and 2); several hundred new farms were established during a period of "free entry" between 1958 and 1960 (Sarapnickas 1979) and reached a peak of some 4500 (Dominion Bureau of Statistics 1963). Notwithstanding the success of Ontario flue-cured tobacco agriculture during this first period, by 1960 a number of interrelated factors emerged that led to tobacco's first major restructuring.

Period Two: Initial Restructuring, 1960 to 1981

Initial restructuring of tobacco production in Southern Ontario, while unique in its details, was broadly comparable to that which began to affect many agricultural sectors by 1960 (Special Committee on Farm Income in Ontario 1969). Common factors included changing labour-capital relationships, plus increases in production capacity that put pressure on both farm prices and incomes. However, these general factors, which led to increased scale and specialization in other sectors, impacted somewhat differently in tobacco because of the supply management role exercised by the Board and the existing high degree of specialization.

From its establishment, the Board had difficulties negotiating with the tobacco companies. Inelastic demand meant a potential for over-production and consequent decrease in tobacco auction prices. The Board initiated a two-fold response; first, to maintain price levels, it limited the annual size of the crop to coincide with the companies' demand. This was done by an across-the-board reduction in the proportion of quota allowed to each tobacco farm (OFCTGMB 1959). This application of a proportion of the BMA 'rights' became regular practice, with the annual value always less than 100 percent (OFCTGMB, annual). Second, in 1960 the Board attempted to exercise its monopoly powers by refusing to allocate additional quota. Together, these two actions established a new framework within which restructuring began to take place.

Although a highly specialized farm enterprise with specific land and building requirements, flue-cured tobacco farming remained highly dependent on human and animal labour until

the 1960s, with modest inputs of fertilizer and chemicals. However, in the 1960s labour availability, both family and seasonal, was reduced and its cost escalated. This supported an increase in mechanization, including the development of specialized equipment for growing, harvesting and curing, and a greater use of chemicals, especially pesticides (Sarapnickas 1979). Both machine and chemical usage were stimulated, not only by their availability, but also by the particular conditions under which tobacco was being produced. Reduced quota induced pressure to increase yields, the latter of which increased by over 40 percent between 1958 and 1972. The result was an inverse relationship with reductions in BMA (Figure 4). Although yield increases had the effect of forcing even lower quotas, they allowed many farmers to maintain or increase production even as acreage allotments were reduced. In this way, tobacco farmers were very much part of a general 'cost-price squeeze' on farm incomes, but with a special response to specific marketing pressures through the Board's application of supply management.

Despite across-the-board quota reductions that tended to marginalize those farmers whose initial quota was modest, intensification of production initially helped to maintain farm numbers through the 1960s. Traditionally, a quota of about 40 acres (16 hectares) of tobacco 'rights' was deemed sufficient to secure a satisfactory income. This threshold was lowered by increases in yield, but when BMA percentages fell to 50 percent or less, many non-viable operations became more viable. At the

same time, pressures grew to separate tobacco quota from a specified 'tobacco farm' land base (Ross 1976). Pressures came particularly from owners with quota on farms in more than one location (Tait 1968). When finally approved in 1972, separation led to immediate BMA transfers, largely from outer areas to the Main Belt. It also allowed some smaller growers to realize the sale value of their quota and to exit tobacco (Tait 1968). This trend was accelerated by two other factors: some peripheral areas had proven physically marginal for tobacco production (Fisher 1983); plus, the increasingly specialist infrastructure was concentrated in the core region, which meant that farmers in or near the 'Main Belt' had better and cheaper access to both the input suppliers (sales and service of new bulk kilns, field machinery and chemical inputs) and to the three tobacco auction facilities then operated by the Board at Aylmer, Delhi, and Tillsonburg.

In 1974, BMA quota was separated from the farmland and allocated to the farm owner as freely negotiable Basic Production Quota (BPQ) (Lane and MacGregor 1979). Then in 1978, as a specific response to the problem of over-production, despite reduced quota allocation, the Board shifted BPQ from acreage to poundage. Each farmer was allocated a base amount of pounds of tobacco he/she could produce, calculated on the previous BPQ held. While poundage was also subjected to fluctuating quota below 100 percent, an individual farmer could choose to grow the allocation more or less intensively, and thus potentially

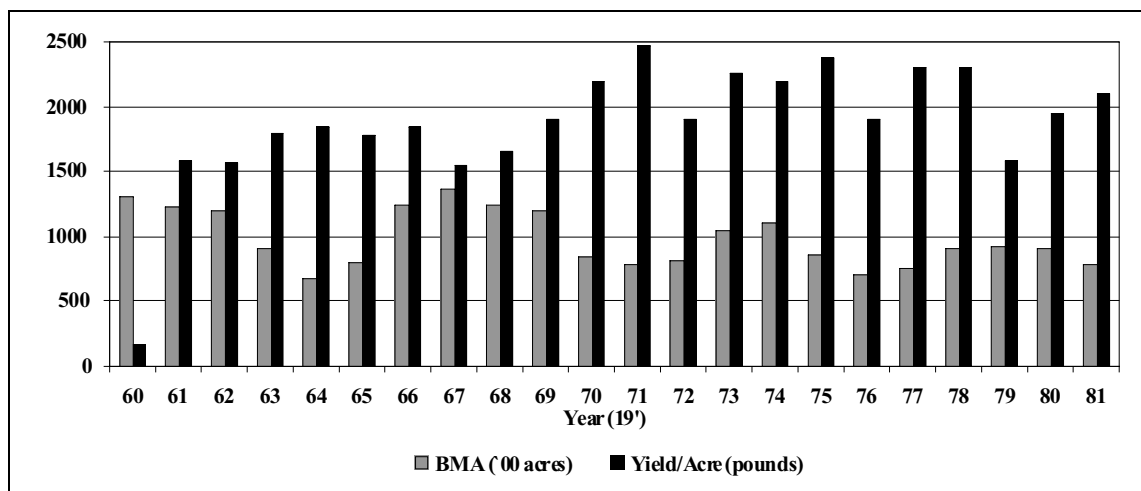


Figure 4. Allotted Basic Marketable Acreage (BMA) and yield per acre, flue-cured tobacco, Ontario, 1960-1981

(Source: OFCTGMB, 1959-1992)

reduce the amount and cost of some inputs (Ross 1976). The use of poundage also gave greater flexibility to transfer of quota on an annual rental basis, if farmers wanted to sell accumulated production or to compensate for inadequate stocks due to loss through physical causes (extreme weather events, crop disease) or other short-term reasons.

The net result of all these changes was a significant decrease in both the number of tobacco farms, which had increased despite the Board's attempt to restrict numbers and farm owners (OFCTGMB 1976). At the same time, there was an increase in the proportion of total farms and tobacco acreage in the Main Belt. Between the end of farm and quota expansion in 1960 and the shift to poundage in 1976, a major reduction in the number of tobacco farm owners and (after 1973) of tobacco farms took place. During this period, there were also increases in the average size of both farm and quota holding. The consolidating trend continued after 1976, such that by 1981 both the number of farms and BPQ owners stood at about 2,500, losses of 46 and 37.5 percent, respectively, of peak totals. Meanwhile, concentration of production in the Main Belt had increased from a low of 82 percent of Ontario production in 1963 to 91 percent in 1981. Thus, tobacco remained a unique sector and initial restructuring was largely through response to the changing nature of production, with modifications initiated within the industry through the grower-controlled Board.

As with other agricultural sectors, tobacco farmers are subject to forces of nature. Beyond general climatic factors affecting most crops, tobacco is particularly susceptible to frost and hail, as well as tobacco-specific soil and airborne crop diseases and viruses. In 1979, tobacco farmers were affected by two such events. A crop disease, Blue Mould, affected thirty percent of the Ontario tobacco crop. In the same year, a tornado struck down in the Main Belt (OFCTGMB 1980). In total, the Ontario Crop Insurance Commission gave permission for almost 30,000 acres (12,100 hectares) of tobacco to be cut down on 780 farms. This resulted in a 35 percent shortfall in the amount of tobacco sold at auction compared to the targeted amount for 1979, 149.2 million pounds (67.7 million kilograms) versus 230 million pounds (104.3 million kilograms), respectively (OFCTGMB 1980) (Figure 5). As the Board, tobacco companies, and farmers made efforts to recover the shortfall in the ensuing years, changes in the political

economy of tobacco farming in Canada, as well as additional climatic events resulted in further restructuring of the tobacco-growing sector in Ontario.

Period Three: Tobacco Reduction-driven Restructuring, 1981 to 1996

As with other agricultural sectors throughout the western world (Ilbery 1983, 1984; Johnsen 1999; Le Heron and Roche 1999; Ramsey and Everitt 2001), tobacco growing in Ontario has continued to experience general restructuring pressures from the 1980s onward, including the trend to fewer, larger, more mechanized and capital intensive farm operations. Generally, these trends have had the support of the Canadian and Ontario governments, which have both adopted the industrialization model, and which, until the Canada-USA Trade Agreement (CUSTA) and the North American Free Trade Agreement (NAFTA), pursued policies of farm income stabilization through farm product marketing agencies, including supply management (Troughton 1989). In this context, tobacco production, securely linked to agribusiness (notably the tobacco companies), and to governments as a major source of tax revenue, seemed to be 'in sync' with the evolving agri-food system. However, as the model presented in Figure 6 describes, a range of other forces affected the tobacco-growing sector between 1979 and 1996. During this period, tobacco farmers were faced with the impacts of anti-smoking lobbies, changes in macro-economic conditions for farming, further changes in the production environment (labour shortages, further mechanization), crop diseases, and extreme weather events. The model also illustrates the role of policy in supporting tobacco farmers in diversifying, or at least re-specializing, in other agricultural ventures. Since the mid 1990's the sector has stabilized despite changes in late 2000 that required that Canadian tobacco crops conform to new tar and nicotine regulations. Since these can only be achieved by modifying present curing systems, the provincial government in Ontario announced a one-time assistance package for farmers making the transition. However, there is uncertainty regarding how many growers will be forced out due to the required changes.

The cumulative impact of the forces between 1979 and 1996 resulted in what appears to be a permanent reduction in the

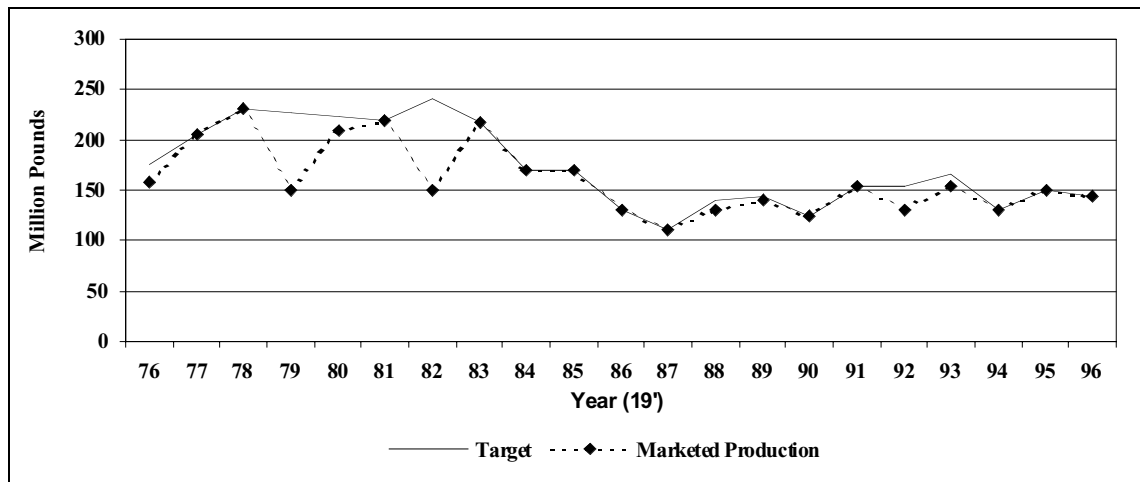


Figure 5. Ontario flue-cured tobacco production, 1976-1996

(Source: OFCTGMB, 1977-1997)

number of tobacco farms, area, and amount of tobacco grown in Ontario. Between 1981 and 1986, the number of tobacco quota holders in Ontario declined by over 700 (28 percent) (Sub-Committee on the Tobacco-Growing Industry in Canada 1987). In percentage terms, only 29 percent of the BPQ allotment was grown in 1987, compared to 62 percent in 1982. The 1982 percentage has not since been achieved, ranging from a low of 35 percent in 1990 to 52 percent in 1993 in the period from 1987 to 1996 (OFCTGMB 1997). The sector continued to contract, albeit at a lower rate, over the next decade: 1991 farm numbers were down to 1,650 and by 1996 only 1,100 actual producers remained, about one-quarter of the peak total. Between 1981 and 1987, the amount of tobacco grown and sold in Ontario declined by over half, from 247 to 113 million pounds (100 to 46 million kilograms), resulting, among other things, in the closure of the auction facility at Aylmer (OFCTGMB 1982, 1988) (Figure 5).

As illustrated in Figure 5, the amount of tobacco targeted for production refers to the estimated demand agreed upon by the Board and the Canadian Tobacco Manufacturer's Council. This is contrasted with the actual amount of tobacco sold through auction that year. The differences between targeted and sold amounts in 1979, 1982, and 1992 were the result of crop disease, early frost, and a rainy growing season, respectively. At the same

time, tobacco farmers were faced with rising interest rates that saw farmers renewing mortgages at between 17 and 22 percent throughout the early 1980s (Laiter 1996). As argued in the following section, it was against a background of uncontrollable events such as these that tobacco farmers faced an increase in public policy initiatives related to restricting and eliminating tobacco use. Together, a set of powerful forces impacted on the tobacco farming community during Period Three. The following sections summarize these political forces, economic conditions and other conditions as outlined in the model (Figure 6).

Policy Environment of the 1980s

While other industrialized sectors experienced positive support for further rationalization, in the case of tobacco, pressure came increasingly in the form of government initiatives aimed at reducing, if not eliminating, tobacco use. Pressures in Canada to curb smoking, including anti-cigarette advertising and banning of smoking in public spaces began in the 1960s (Federal Task Force on Agriculture 1969; Sub-Committee on Tobacco-Growing Industry in Canada). In response to health concerns, the results of scientific research, and subsequent public concern about the health risks of tobacco products, governments at all levels in Canada began to implement a range of policies and

programs designed to reduce and restrict the use of tobacco products (Kaiserman and Rogers 1992).

The model (Figure 6) highlights some of the major initiatives that were focal by the 1980s. Measures enacted in this decade included: increases in cigarette taxation (provincial, territorial, federal), anti-smoking by-laws (municipal to federal), tobacco advertising restrictions (federal), age restrictions for smoking (provincial), and health promotion programs (municipal to federal) designed to educate the public about the health issues related to tobacco use. Anti-smoking by-laws, for example, designed to reduce exposure to secondary smoke in the workplace and in retail establishments, were implemented by all levels of government. Municipalities within the main tobacco farming area were initially reluctant to impose such by-laws for fear of

repercussions. However, despite the economic importance of tobacco, health issues eventually prevailed even within the Main Belt (Ramsey and Smit 2002).

One of the more debatable policy forces relates to increased cigarette taxation. Ambiguously viewed by government and the public as either a 'sin tax' or a measure to reduce use of tobacco products, in the tobacco community cigarette taxation has long been cited as punitive on the grounds that higher prices result in fewer people smoking (Poulin 1997). The Board has repeatedly expressed concern about the reliance of federal, provincial, and territorial governments on cigarette taxation as a source of revenue (OFCTGMB 1977, 1980, 1984, 1988). While some argue that high taxation only results in driving cigarette purchases underground through smuggling from the United States, the

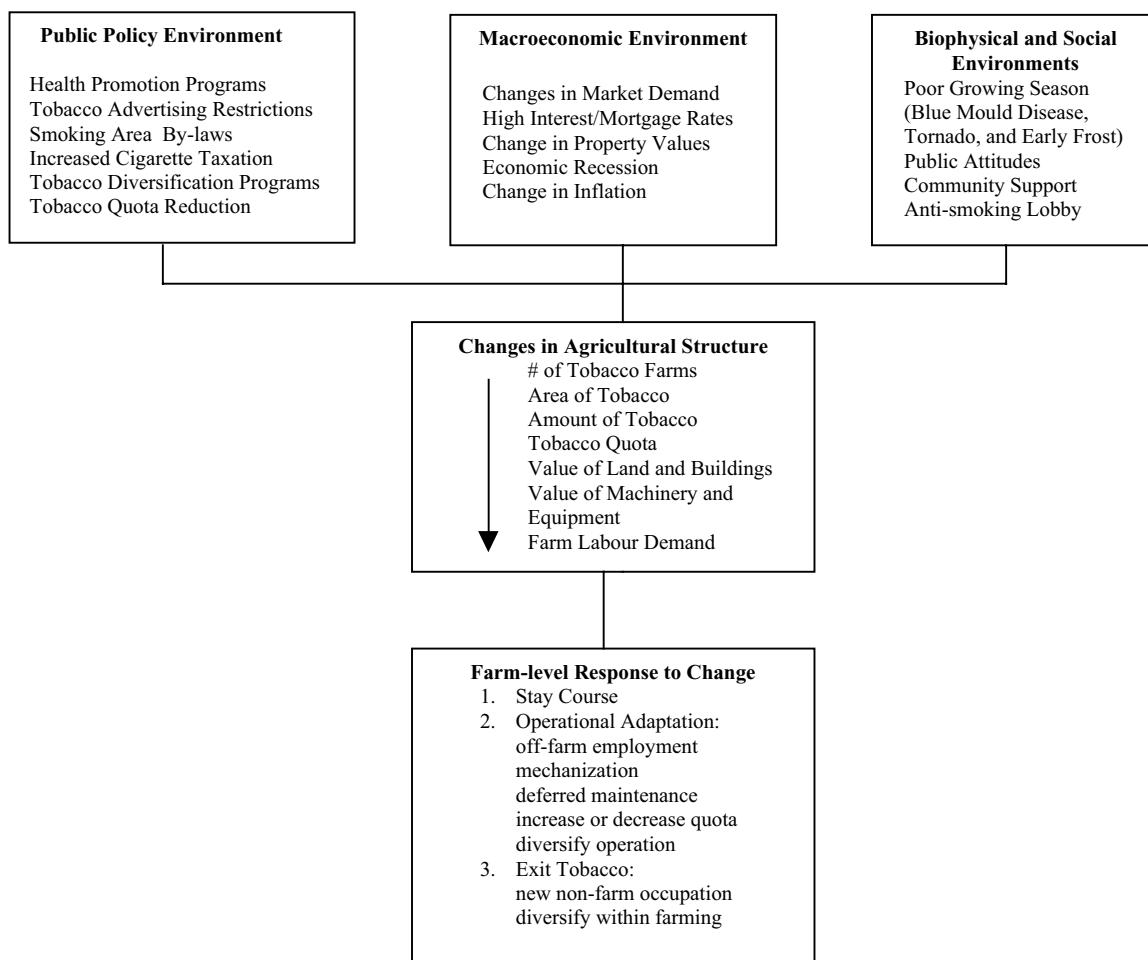


Figure 6: Model of restructuring of Ontario tobacco production, 1979-1996.

Source: adapted Ramsey and Smit (2002)

impact of taxation on 'legal' sales of Canadian cigarettes is evident (Figure 7). As federal and provincial taxation increased between 1981 and 1991, the legal sales of Canadian cigarettes decreased. However, when the federal and several provincial governments reduced cigarette taxation levels in 1993 in an effort to reduce the underground cigarette trade, the legal sales of Canadian-made cigarettes increased from 30 billion in 1993 to more than 47 billion in 1996 (Figure 7). Together, the various pieces of legislation, restrictions, programs and changing public attitudes were responsible for a reduced demand for tobacco products in the 1980s, as instanced by production (Figure 8) and sales (Figure 7). However, a recent Statistics Canada study found that rates of smoking by young people had increased as the price of cigarettes fell after 1993 (Stevens 1995). To combat this trend, the federal government considered implementing a cigarette tax increase in its 1998 budget, thus illustrating further, the volatility that continues in the tobacco industry. In 2002, a number of provinces, including Ontario and Manitoba, substantially increased cigarette taxes. The impacts of these taxation changes will be closely monitored in the tobacco growing community.

Changes in Economic Conditions

At the same time that the policy environment was changing, tobacco farmers were affected by macro- and micro-economic

conditions, particularly in the early to mid-1980s. In this instance, macro-economic conditions refer to those beyond the rural community, including provincial, federal and international levels. Micro-economic conditions refer to the scale of individual or family farms within the rural community, dependent on tobacco as their main source of income. High interest rates and declining farm values throughout the recession of the early 1980s were most notably felt in the tobacco sector. Interest and mortgage rates ranged between 17 and 22 percent in the early 1980s. While farm values across southern Ontario declined substantially from 1981 to 1986, the value of capital investment in land, buildings, machinery and equipment fell proportionately greater in the tobacco belt, and even more dramatically in Norfolk and Delhi Townships (Figure 1) where the concentration of tobacco farms is the highest (Statistics Canada 1982, 1987). The declining value of assets made the situation more difficult for farmers to renew mortgages or borrow money to grow the next crop. Given the uncertainty regarding the tobacco industry during this period, banks were becoming increasingly wary about providing further financing to tobacco farmers (Laitaer 1996). There is some debate within the farming community about who felt the greatest impact. Based on key informant interviews in the tobacco growing sector and a survey of 63 individuals who grew tobacco in the 1980s, it appears that the smaller growers with low debt levels were affected

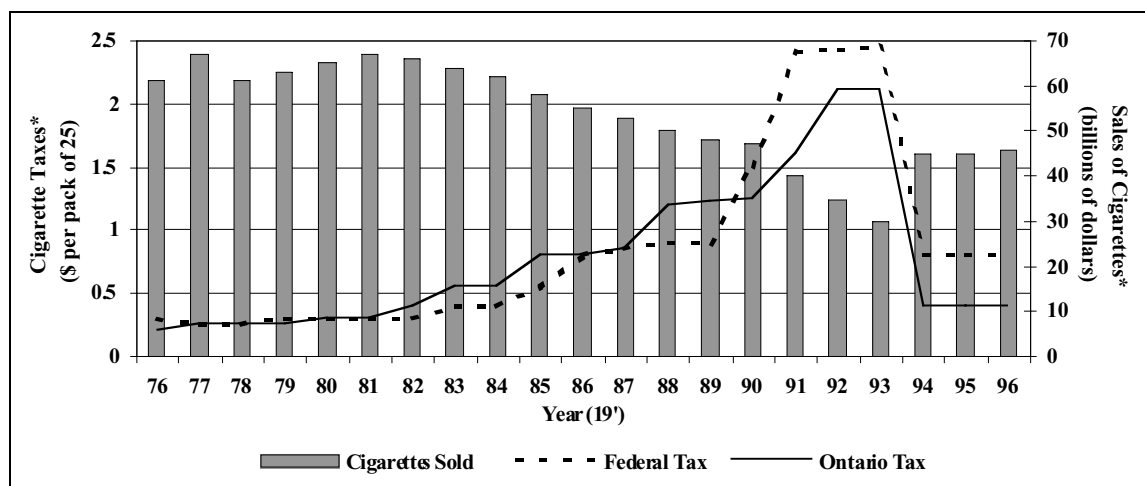


Figure 7. Cigarette sales and taxation in Canada, 1976-1996

(Sources: Statistics Canada, 1968-1995 in OFTCGMB, 1977-1997). *Prices not adjusted for inflation.

more than the larger growers with higher debt levels. That is, it was less of a financial loss for banks to call in loans from individuals owing smaller totals than those who carried large debt loads (Ramsey and Smit 2001).

The policy environment led to a reduction in the market demand for tobacco products. Here, farm values declined as tobacco quota became devaluated. At the same time, the Board began to reduce available quota. Quota reductions made it difficult for some farm operations to remain viable, particularly smaller operations and those with extremely high debt loads. The combination of economic forces, initiatives to restrict and eliminate the use of tobacco products, changing social values, extreme weather events and crop diseases, and changing production factors resulted in a substantial decline in the number of tobacco growers and the amount and area of tobacco grown (Figure 8). While major opposition to anti-smoking legislation came from the tobacco companies and their trade organization, the greatest impact was felt at the farm level. Whereas, the large multinational tobacco companies, operating in a global market, had already shown a marked tendency to diversify into non-tobacco activities, individual tobacco farmers were much more vulnerable.

Responses To Change in The Tobacco Sector

Responses to change in the tobacco sector were varied and came from a number of groups with a role in the tobacco industry, including state (federal and provincial agricultural ministries), industry (tobacco companies and the Board), community (churchgroups), and farmers and their families. The model (Figure 6) describes four types of farm-level responses to change that can be identified: 1) stay the course; 2) defence of the industry; 3) operational adaptation; and, 4) exit tobacco farming altogether. Initial reactions in the early to mid 1980s included local 'pro-tobacco' campaigns. At the state level, responses consisted of compensation for tobacco farmers selling their quota and research-based and financial assistance in seeking out alternative agricultural products to grow or raise.

State-level Response to Restructuring

The impacts of changes on the tobacco industry that emerged in the 1980s were recognized by both senior levels of government, as evidenced by the establishment of several programs. One public initiative aimed at reducing the amount of tobacco grown was the Tobacco Transition Reduction Initiative (TTRI) or 'REDUX' as it was commonly referred to, operated jointly through the Board and the Ontario Ministry of Agriculture and Food (OMAF) between 1983 and 1987. The purpose of the program was to permanently retire tobacco quota and at the same time provide farmers a reasonable return for selling their quota. REDUX alone accounted for the retirement of more than 60 million pounds (27 million kilograms) or half of the quota over this period (Wilkins 1997). However, the results of the program were mixed. For some, REDUX allowed for an affordable retirement from tobacco farming, but for others reduced tobacco quota made it difficult to make a profit with the quota that remained.

In 1986, the 'Transition Crop Team' (TCT) was established by OMAF. This program operated within the Main Belt at the OMAF Agricultural Experimental Station in Simcoe (Figure 1). The TCT's mandate was to identify potential marketable crops for growth and processing in Ontario. While the TCT was intended as a resource for all Ontario, its office location and the crisis in the local tobacco belt made the tobacco farmer the most obvious and immediate candidate for transition (OMAF 1990). Furthermore, OMAF recognized that far more than crops and individual farm enterprises were at stake here. The whole socio-economy of communities in the tobacco belt, the well-being of its population and its future were in the balance. Out of this scenario came a revised sense of urgency for the TCT and the need for new strategic emphasis on the original mission statement (OMAF 1990).

Three government assistance programs operated in conjunction with the TCT, but for which only producer groups (not individual farmers) were eligible. These included the federal New Crop Development Fund and the Alternative Enterprise Initiative and the provincial Ontario Crop Introduction and Expansion Program. In the internal review of the TCT which followed its completion and subsequent phasing out in 1990, it was estimated that 30 percent of the program focused on

Table 1. Alternatives to tobacco in Southern Ontario, 1980-1996

Farm Product	Transition Crop Team*		Tobacco Diversification Program**	
Field Crops	grain sorghum	pearl millet	flaxgrain	pearl millet
	industrial hemp	sweet corn	sorghum	sweet corn
	peanuts	wheat grass	peanuts	wheat grass
Fruits	elderberries	northern kiwi	elderberries	northern kiwi
	musk melon		musk melon	
Vegetables	garlic	tomatoes	asparagus	oriental
	onions	vidalia	chickory	vegetables
	oriental		chili/spice peppers	tomatoes
	vegetables		garlic	vidalia
Nuts, Herbs, Misc.	ginseng	greenhouse	echinacea	tree nuts
	nut trees	flowers	feverfew	greenhouse
	stevia	potted plants	ginseng	flowers
			valerian	potted plants
Livestock	elk	ratites (emu, ostrich)	elk	ratites (emu)

Sources: *OMAF (1990); **Columbus (1996)

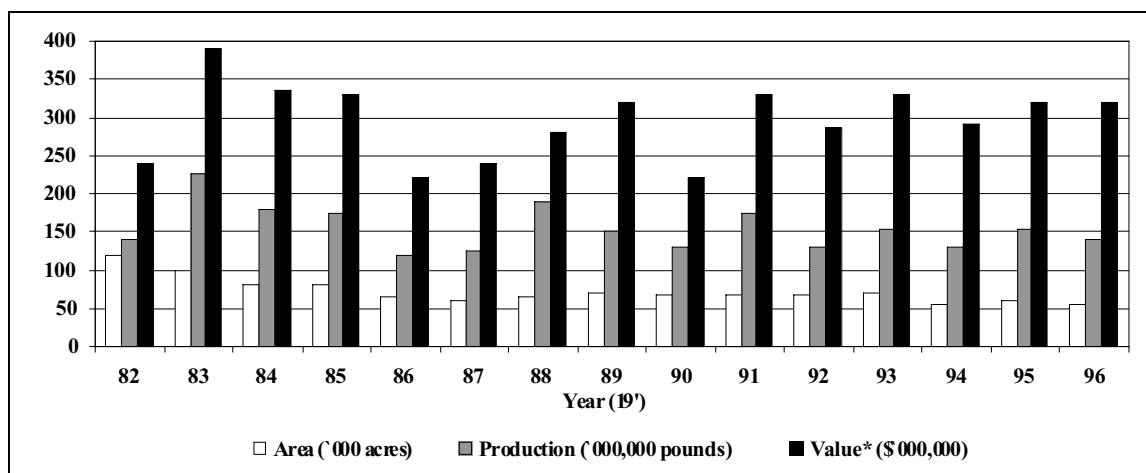


Figure 8. Area, production, and value of flue-cured tobacco, Ontario, 1982-1996

(Source: OFCTGMB, 1983-1996). *Prices not adjusted for inflation.

agronomic advice, while 70 percent was directed towards the business and marketing of crop alternatives (Loughton 1991). While a large number of crops were identified as possible alternatives (Table 1), the program concluded by stating that there was no single ‘magic’ crop to replace tobacco, and that beyond the biophysical constraints of sandy soils, especially in the Main Belt, the greatest obstacle was effective marketing of what were, in effect, largely niche crops (Loughton 1988; Loughton et al. 1990).

While some of the TCT initiatives continued within agricultural ministry research stations within the Main Belt, no new formal assistance initiatives were undertaken until the establishment of the federal-provincial cost-shared Tobacco Diversification Program in 1994. The mandate of this program was to encourage economic diversification, value-added activities or the development of niche markets that will benefit the agricultural stakeholders in the tobacco growing regions of Ontario (OMAFRA 1994). As of mid-August 1996, the program had received 97 project applications and business plans, of which 62 had been allocated within three categories: agricultural production/ commodity pioneering; agribusiness/ value-added/ marketing; and, innovative/ technological equipment development (Table 2). The variety of projects illustrates the type and scale of initiatives taken in the tobacco belt, ranging from specialty crop production to mechanical innovations and

secondary processing. The scale of these programs represents an acknowledgment by governments of the impacts on families and businesses of the decline of the tobacco sector. On the other hand, the responses have been largely concentrated within the Main Belt where the greatest impact was felt and which enjoys the greatest proximity to the alternative research initiatives.

Farm-level Responses to Forces of Change

As with state-level responses, individuals within the tobacco community had both reactionary and developmental responses. Throughout the 1980s, bumper stickers declaring ‘My Pleasure My Choice’ and ‘Paid for with Tobacco \$\$\$’, as well as cheques with the notation ‘Tobacco \$\$\$ Pay My Bills’ were commonplace. Further, protests to provincial and federal legislatures in Toronto and Ottawa, respectively, took place in 1984 as the culmination of petition and letter-writing campaigns (MacLaren 1984). Within the Main Belt, where the majority of all farms were tobacco enterprises, the community responded to the hardships faced by tobacco farmers and their families, which included bankruptcies and suicides. In 1986, both the United and Catholic Churches announced outreach programs offering counseling services to individuals and families facing financial and personal difficulties. These personal and farm level impacts are addressed in more detail elsewhere (MacLaren 1987; Steidman 1987; Ramsey and Smit 2001, 2002).

Table 2. Projects funded through the Tobacco Diversification Program between 1994 and 1996.

Category	# Projects	Examples
Agricultural Production/ Commodity Pioneering	22 (26%)*	medicinal herbs; stevia; industrial fibre hemp; tree-nut crops; Northern Kiwi; wheat grass juice production; dried tomato and chili spice pepper production
Agribusiness/Value Added/ Marketing	23 (34%)	peeling, blanching, and jarring garlic; pickling of asparagus; sweet Spanish onion conditioning and marketing; sauce and condiment processing
Development of Innovative/Technology Equipment	17 (32%)	tractor mounted automatic garlic harvester; automatic ginseng harvester; fruit and vegetable drier; vegetable cooling system
Organization and Human Resource Development	n.a. (8%)	n.a.

(Source: Columbus, 1996)

Note: * = Percentage of funding from program into category

The cumulative impacts of the forces of restructuring were felt most directly at the level of the farm family (Ramsey and Smit 2001, 2002). It follows that it is at this level that one may identify the individual responses to the pressures of change, including those by farmers and their families who have remained in or moved out of tobacco production, and the diversification that may have been part of the decision. To provide insights into the response processes and to provide direct farm level evidence, two case studies were carried out in different locations within the Ontario tobacco production area. The basis of each case study was a farm survey, one administered in an area adjacent to the main production belt in the Caradoc Sand Plain in Middlesex County and a second in Norfolk and Delhi Townships in the core of the Main Belt of Norfolk County, (Figure 1). The questionnaire formats for both were similar. Both surveys included personal interviews with farm family members who grew tobacco at some time between 1980 and 1996. The purpose was to identify the impacts of and responses to the structural changes taking place in the tobacco sector. The Norfolk case study had the added dimension of asking respondents to describe the role of political forces and economic conditions in their decision-making. This line of questioning provides the empirical evidence to the political economy framework established for the analysis responses to agricultural restructuring.

Caradoc Area

The Caradoc area in Middlesex County (Figure 1) is located approximately 40 kilometres to the western boundary of the Main Belt where tobacco farms were established primarily in the 1940s. The area has higher capability soils for other crops than those of the Norfolk Sand Plain, but suffers from distance to the Main Belt facilities, including input services and the tobacco auction houses. Tobacco statistics indicate that losses of tobacco acreage were proportionately higher in Middlesex than in the Main Belt counties, but not as severe as in the peripheral production areas (Figure 8).

The primary interest of the investigation was to identify farm level responses to change, including diversification from tobacco to other activities (Stewart 1997). Possible tobacco farms were identified using maps and air photographs of kiln clusters. Residents in 58 farms were interviewed. Of these, 35 were continuing tobacco farmers (the majority of those left in the region), 19 (35 percent) had left tobacco production but remained on the farm, and four were non-tobacco farmers residing on tobacco farms that had operated in the 1980s. Of those farmers who have left tobacco 11 farmers (almost 60 percent) cited retirement as the main reason for their exit (Table 3).

Consistent with the model (Figure 6), three general response types can be identified which conform to the overall conditions

Table 3. Alternative income sources to tobacco reported by current and former tobacco farms in the Caradoc area, 1996

Alternatives	Current tobacco farms (n=35)	Former tobacco farms (n=19)	Total (n=54)	% Total (n=54)
Agricultural Land Use:				
Field Crops	27	16	43	80
Fruit	1	1	2	4
Vegetables	3	4	7	13
Specialty Crops	3	1	4	7
Livestock	4	3	7	13
Non-agricultural Land Use				
On-farm Enterprises	9	3	12	22
Off-farm Employment	14	6	20	37

(Source: Stewart, 1997)

ascribed to period three: first, the years between 1981 and 1986 represented the period of significant exits by farmers out of tobacco; second, the introduction of the REDUX program in 1986 further encouraged farmers to sell their quota and exit, prior to completion of the program in 1990; and finally, the 1990s appear to have been a period of relative stability compared to the 1980s. Most respondents stated that the exit from tobacco reflected the pressures and/or opportunities associated with the industry in general. One reason for exiting tobacco included financial pressures, notably, interest rates, increased costs and availability of farm labour, and the expense of machinery upgrades. Others included board pressures on quota, government pressures on smoking and assistance for diversification from tobacco, illness, and the lack of succession by children who had left the farm and/or had no interest in tobacco farming.

Whether respondents decided to remain in tobacco farming or not, most in the Caradoc survey reported attempts to diversify their economic activities. Four types of alternative enterprises were identified: crop, livestock, additional on-farm business, and off-farm employment (Table 3). Because of higher capability soils suited to general cash cropping, a number of farmers had

moved into the predominant corn, beans and wheat production, while three farmers had opted for less intensive beef cattle operations. A shift into alternative crops was also identified, including fruit and vegetable combinations (strawberries, pumpkins, asparagus, cauliflower, lettuce and sprouts), in addition to specialty crops and livestock operations such as flowers, dark tobacco, medicinal herbs (ginseng and evening primrose), Christmas trees, foxes and emus. On-farm businesses included those related to crop and livestock production (pick-your-own fruit, cauliflower processing, sales of emus, and a petting zoo) and non-farm activities (snowplowing, trucking). Two respondents that no longer grew tobacco operated a repair shop for vehicles and farm equipment and sales/rental firm specializing in equestrian equipment, respectively. Finally, various family members reported full- and part-time off-farm employment. Overall, between 1981 and 1991, the Caradoc area lost 50 percent of tobacco farms and farmers, a larger proportional loss than in the Main Belt townships, and reflective of its outlying location (Statistics Canada 1982, 1992). On the other hand, the remaining group of Caradoc tobacco farmers operated larger farms both

Table 4: Response to changes in the tobacco industry in Norfolk, 1981-1996

Responses	Current Tobacco Farmer (n=40)	Former Tobacco Farmer (n=23)	Total Respondents (n=63)	% Total Respondents (n=63)
Change in Quota/Area	21	7	28	44
Diversification Initiative	13	7	20	32
Change in Farm Operation	19	0	19	30
Exit from Tobacco	2*	14	16	25
Lobby/Rally/Petition/Letters	7	5	12	19
Off-farm Employment	9	3	12	19
Change in Lifestyle	8	3	11	18
Change in Capital Investment	9	2	11	18
Further Education	4	2	6	10
Other**	3	0	3	5

(Source: Ramsey, 1998)

* Respondents exited and re-entered tobacco sector between 1981 and 1996

** Includes hiring financial advisor; ceasing to buy crop insurance; declaring bankruptcy

in area and quota in 1996, and most expressed the opinion that they were in tobacco 'for the long haul'.

Norfolk Area

Between July 1996 and January 1997, 63 randomly selected individuals who farmed tobacco between 1981 and 1996 in Norfolk and Delhi Townships were personally interviewed using a semi-structured questionnaire. All were asked to identify changes in individual, family and farm operation characteristics between 1981 and 1996, and to describe the impacts of a range of forces, if any, responsible for changes in the tobacco industry, and how they responded. Fifty-nine of the 63 respondents provided 138 responses (Table 4). Most of the responses related to changes in various aspects of the farm, including the amount of tobacco grown (28), other aspects of the tobacco operation (19), and capital investment (11). In terms of changes in quota/area of tobacco, responses included either increasing or decreasing the area grown, as well as either renting in or renting out land and/or quota. Over one-third (20) of respondents indicated attempts to diversify or re-specialize from tobacco to some other agricultural commodity. Finally, 16 respondents indicated the exit from tobacco as a specific response, although

two had returned, one as a share-grower, one as a quota owner.

Specific changes to the tobacco operation included using more family labour and other initiatives designed to improve efficiency. A number of respondents also stated that crop quality improvement measures were taken in order to remain competitive (Table 4). In contrast, nearly 20 percent of respondents indicated involvement in the protest activities described earlier, including attending rallies on the grounds of provincial and federal legislatures, letter writing, signing petitions, lobbying individual politicians, joining a legal protest, and even running for parliament in the 1995 provincial election. Changes in lifestyle were noted, including various forms of 'belt tightening' (reduced budgets, deferred vehicle purchases and vacations). Several respondents mentioned that either they or their spouses had furthered their education in an attempt to gain off-farm employment, while others stated that obtaining off-farm employment has been a response to the financial 'crunch' of the 1980s.

With respect to enterprise diversification, the range of alternatives included conventional and alternative crops and livestock, on-farm businesses (both agricultural and non-agricultural), and non-farm employment as an adjunct to remaining on the farm. Within the farm enterprises, two scales

Table 5. Current and former tobacco farmers reporting land uses, Norfolk, 1981-1996

Land Use	Current Tobacco Farms (n=40)	Former Tobacco Farms (n=8)	# (n=48)	% (n=48)
Tobacco	40	0	40	83
Corn	8	2	10	21
Wheat	1	0	1	2
Beans	10	2	12	25
Fruit	3	5	8	17
Vegetables	8	6	14	29
Ginseng	10	3	13	27
Specialty Crops	3	4	7	15
Cattle/Livestock	2	0	2	4

(Source: Ramsey, 1998)

Notes: - Of 63 respondents; 6 were retired, 9 were engaged in other occupations, 48 were still farming.

of alternative were identified: large scale (corn, soybean and wheat) and small scale (specialty crops, fruit and vegetables) (Table 5). The former were limited somewhat by the combination of poor soils and farm sizes generally well below those of conventional cash cropping elsewhere in southern Ontario. In contrast there was a high interest in more intensive fruits and vegetables (strawberries, raspberries, sweet and field corn) and especially in the so-called experimental crops identified by the TCT program (Table 1).

While only 20 respondents mentioned diversification as a specific response to changes in the industry, 35 actually provided examples (Table 5). Of these 27 were still growing tobacco, while eight were not. While the majority had attempted only one new crop, a number had tried two and one person had attempted eight. While corn and beans and beef cattle were noted, the high incidence of experimental specialty crops is of particular note. Location of TCT investigation in the Main Belt, together with tobacco farmers' experience with greenhouse cultivation, with cultivating, processing, grading and storing a specialist crop, and the need for other sources of income, may account for the widespread interest and adoption of experimental crops. The most prominent is ginseng, which although requiring a heavy capital investment, has enjoyed a buoyant market both in North America and the eastern Pacific countries (Table 1). The importance of ginseng as an alternative crop to tobacco in Ontario is evidenced in the *Canadian Tobacco Grower* which since 1996 has incorporated the *Canadian Ginseng News* and regularly summaries of the development of alternative crops into its publications. Also, the federally funded tobacco crop research station in Delhi, Ontario has been researching ginseng production issues for more than a decade.

As well as crop and livestock production, other farmers had moved into processing and retail areas. Activities included those connected with apple orchards (apple pies, cider and wine, the apple winery incorporating tours, and an on-farm retail outlet). Other operations include bottling vegetables. In each of these cases, former tobacco farmers utilized the services of the agricultural diversification programs in developing their products and marketing strategies. In terms of non-farm enterprises, a wide variety of employment was noted. For those still in tobacco farming, these included work in manufacturing, construction,

retail and both public and private services. Of those who had exited tobacco, most had continued some connection with the industry, either with children who had taken over the family farm, or with the Board, auction, crop insurance, or agricultural ministries. Other occupations included farm labourers, factory workers, truck drivers, real estate agents, and small business operators. Despite these initiatives, many farmers and farm families had been through a devastating period. Most of those interviewed were the remaining group who had 'weathered the storm'. Accounts of others whose personal lives were shattered and livelihoods lost are described elsewhere (Ramsey and Smit 2001). By 1996, the tobacco sector in the Main Belt had stabilised with much fewer farms, albeit with total production at levels that had prevailed prior to 1986.

Conclusions

Flue-cured tobacco rose to prominence as a specialist cash crop in an era of general mixed farming in Ontario. Production was based on cheap land and labour, and its rapid growth during the 1930s was in contrast to general conditions of a depressed rural economy. Tobacco farming provided rewards for family-based hard work, and its close relationship with the oligopolistic tobacco companies led to collective action culminating in the establishment of the Board, the latter providing an early example of supply management and a key instrument to restructuring. Together these factors resulted in a sector that had grown more rapidly than any other in eastern Canada and whose farmers enjoyed both a high degree of control over their industry and whose incomes were the highest of any farm enterprise group in Canada.

During the 1960s and 1970s, however, tobacco fell back from its position of advanced economic strength. The sector began to be affected by the same factors that were fueling the restructuring of other specialist enterprises, many of which were shifting to the industrialization model. Although tobacco's structure was unique in terms of the particular labour-capital relationships and the level of control over production exercised by the Board, it nevertheless, was centred on labour substitution, the adoption of capital intensive inputs, and the need to respond to the problem of over capacity and inelastic demand for output.

In common with several other sectors in Ontario, notably dairy and poultry, restructuring based on the application of supply management reduced farm numbers and owners to between 50 and 65 percent of peak numbers, while maintaining tobacco production levels.

Having rationalized in relation to the changing factors of production, the tobacco sector might have anticipated a more gradual continuation towards fewer, larger operations, as has occurred in other sectors. The process, however, was modified and accelerated by other factors. First, the impacts of natural disasters were intensified by the regional concentration of tobacco cultivation. Second, high interest rates, although general in character, were particularly problematic in terms of tobacco, whose per acre production costs are higher than any other major farm sector. Third came the most devastating blow, the multi-faceted government actions seeking to drastically reduce tobacco consumption. Whereas natural disasters and high interest rates receded, anti-smoking campaigns and legislation gathered pace through policy and legislation enacted by all levels of government.

In the third period of restructuring (1981-1996), and facing these threats, the tobacco sector revealed both its vulnerability and its resilience. Its vulnerability lay in total reliance on a single crop of no redeeming food or social value, which left individual farmers and whole communities, especially in the Main Belt, without economic support and also under social and psychological pressures of guilt by association. This weakness, which resulted in an up to 40 percent reduction in demand, contributed to further reductions of farms and farmers at rates above those for other sectors, leaving only about 25 percent of peak operator numbers. On the other hand, tobacco has shown surprising resilience based on two major factors: first, the strength within the sector, including community action and a willingness to consider and adopt alternatives; second, the paradox of government involvement as both the threat and the saviour. Both federal and provincial governments have developed programs to reduce tobacco consumption through anti-smoking and cigarette legislation. On the other hand, both still rely significantly on cigarette taxation revenue and have not yet resolved that dilemma. In addition, agricultural ministries have seen fit and been given the mandate to search for, promote and assist in the adoption of alternative crops. Both the sectoral and individual

responses have reflected the varied characteristics and relationships at work.

Overall, although farm numbers have been drastically reduced, the inherent structure of production has been maintained. The remaining farms are growing larger average tobacco areas and are producing a crop commensurate with that of 1986 in volume and value, with only half the farm numbers. Rationalization has included a concentration on the Main Belt, justified perhaps by the greater reliance on tobacco and access to facilities, including the two remaining auctions. Greater reductions in outlying areas like Caradoc's are offset by greater possibilities for a shift to other conventional enterprises.

At the individual farm level, the impact of government programs on diversification has been apparent. As both the Norfolk and Caradoc cases reveal, tobacco farmers have shown a strong tendency to pick up on the opportunities identified, a tendency again a little stronger in the Main Belt where the need was greatest. In addition, farmers remaining in tobacco are in a stronger position, at least in the short-run, with greater flexibility at the farm level while retaining the collective, supply management function of their Board in the marketplace. The future role of governments, however, remains the great uncertainty.

What does the case of Ontario flue-cured tobacco restructuring mean in the broader context? On one hand, it serves to illustrate a number of elements in the evolving model frameworks of agricultural industrialization and restructuring. On the other, it demonstrates that only through a locality study can one uncover significant variations and illustrate the particular political economic relationships within specialized modern agriculture. Flue-cured tobacco illustrates aspects of induced technical and institutional innovation, productionist and capital penetration, beginning in and occupying a leading-edge position in period one, and contributing to restructuring in period two. In period three, elements of appropriation and substitution are central tendencies, while tobacco is very much part of the ongoing societal-environmental dialectic, especially if the context of environmental is widened to include issues of human health and well-being. Finally, while emphasising that the restructuring of Ontario tobacco has been geographically and politically unique, what has occurred may foreshadow more widespread situations

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Note

1. Canadian agriculture, despite having made partial conversion to the metric system, retains a mix of non-metric and metric measures and terminology. In the case of tobacco, use of acres and acreage and of pounds and poundage persists in daily use and in official reporting by the Board. Where actual areas and quantities are referred to we have placed the metric equivalent in parentheses.

Acknowledgments

This paper has benefited by the comments of two anonymous referees. Funding came from a number of sources, including the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and the Tri-Council's Agroecosystem Health Project

at the University of Guelph. We would also like to thank Patricia Connor for preparing the map and for her assistance in improving the other graphics in the paper.

References

- Bowler, I.R.** 1985. Some consequences of the industrialization of agriculture in the European Community. *The Industrialization of the Countryside*. M. Healy and B. Ilbery (eds.), pp. 75-98. Norwich, GeoBooks.
- Bowler, I.R.** 1992. Sustainable agriculture as an alternative path of farm business development. *Contemporary Rural Systems in Transition, Vol 1: Agriculture and Environment*, I. Bowler, C. Bryant and M. Nellis (eds.), pp. 237-253. Wallingford, C.A.B. International.
- Bowler, I., C. Bryant and M. Nellis.** (eds) 1992. *Contemporary Rural Systems in Transition, Vol 1: Agriculture and Environment*. Wallingford, C.A.B. International.
- Bradshaw, B. and B. Smit.** 1997. Subsidy removal and agroecosystem health. *Agriculture, Ecosystems and Environment* 64: 245-260.
- Britton, S., R. Le Heron and E. Pawson.** (eds) 1992. *Changing Places in New Zealand: a Geography of Restructuring*. Christchurch, New Zealand Geographical Society.
- Brklacich, M., D. McNabb, C. Bryant and J. Dumanski.** 1997. Adaptability of agricultural systems to global climate change: a Renfrew County, Ontario, Canada pilot study. *Agricultural Restructuring and Sustainability: A Geographical Perspective*. B. Ilbery, Q. Chiotti and T. Rickard (eds.), pp. 185-200. Wallingford, C.A.B. International.
- Bryant, C.** 1989. Entrepreneurs in the rural environment. *Journal of Rural Studies* 5: 337-348.
- Burch, D., J. Goss, G. Lawrence and R.E. Rickson.** 1999. The global restructuring of food and agriculture: Contingencies and parallels in Australia and New Zealand (Introduction). *Rural Sociology* 64: 179-185.
- Canada, Government of.** 1955. *Canada Year Book, 1955*. Ottawa (Department of Trade and Commerce), King's Printer.
- Cloke, P. and M. Goodwin.** 1992. Conceptualising countryside change: from post-Fordism to rural structured coherence. *Transactions of Institute of the British Geographers* 17: 321-336.
- Cloke, P., R. Le Heron and M. Roche.** 1990. Towards a geography of the political economy perspective of rural change: the example of New Zealand. *Geografiska Annaler* 72B: 13-25.
- Columbus, M.** 1996. Diversification Update. *The Canadian Tobacco Grower* 45: 4.
- Dean, H. and G. Matthews.** 1969. *Economic Atlas of Ontario*. Plate 57(1). Toronto, Department of Geography, University of Toronto.
- Deloitte and Touche** 1995. *Economic Contribution of the Tobacco Industry in the Tobacco Growing Region of Ontario, A Report Prepared by Deloitte and Touche Management Consultants*, Guelph, Ontario.

- Dominion Bureau of Statistics (DBS).** 1923-1959, 1963. Census of Canada – Agriculture. Ottawa.
- Everitt, J. and K. Bessant.** 1992. Regional planning in rural Manitoba: a study of the 'health' of a prairie region. *Applied Geography* 12: 65-79.
- Federal Task Force on Agriculture.** 1969. Canadian Agriculture in the Seventies. Ottawa, Queen's Printer.
- Fisher, G.** 1983. The Economics of Producing Flue-Cured Tobacco. Toronto, Ontario Ministry of Agricultural and Food.
- Fuller, A. (ed.)** 1990. Pluriactivity and rural change in western Europe. *Journal of Rural Studies* 6: Special Issue.
- Gregor, H.** 1982. Industrialization of U.S. Agriculture: An Interpretive Analysis. Boulder, CO, Westview Press.
- Grigg, D.** 1984. An Introduction to Agricultural Geography. London, Hutchinson.
- Hall, R.** 1952. The Introduction of Flue-Cured tobacco as a Commercial Crop in Norfolk County, Ontario. Unpublished PhD thesis. University of Ann Arbor, Michigan.
- Hansen, P. and A. Muszynski.** 1990. Crisis in rural life and crisis in thinking: directions for critical research. *Canadian Review of Sociology and Anthropology* 27: 1-22.
- Hoggart, K. and A. Paniagua.** 2001. What is restructuring? *Journal of Rural Studies* 17: 41-62.
- Ilbery, B.** 1983. Britain's uncertain future in the international hop market. *Outlook on Agriculture* 12: 119-124.
- Ilbery, B.** 1984. Agricultural specialization and farmer decision behaviour: A case study of hop farming in the West Midlands. *Tijdschrift voor Econ. En Soc. Geografie* 75: 329-334.
- Ilbery, B.** 1985. *Agricultural Geography: A Social and Economic Analysis*. London, Clarendon Press.
- Ilbery, B.** 1992. State assisted farm diversification in the United Kingdom. *Contemporary Rural Systems in Transition, Vol 1: Agriculture and Environment*. I. Bowler, C. Bryant and M. Nellis (eds.), pp. 100-116. Wallingford, C.A.B. International.
- Ilbery, B. (ed.)** 1998. *The Geography of Rural Change*. London, Longman.
- Ilbery, B. and I. Bowler.** 1998. From agricultural productivism to post-productivism. *The Geography of Rural Change*. B. Ilbery (ed.), pp.57-84. London, Longman.
- Ilbery, B., Q. Chiotti and T. Rickard. (eds.)** 1997. *Agricultural Restructuring and Sustainability: A Geographical Perspective*. Wallingford, C.A.B. International.
- Ilbery, B., Q. Chiotti and T. Rickard.** 1997. Introduction. *Agricultural Restructuring and Sustainability: A Geographical Perspective*. B. Ilbery, Q. Chiotti, and T. Rickard (eds.), pp. 1-9. Wallingford, C.A.B. International.
- Johnsen, S.** 1999. Agricultural restructuring and response: Inter-relationships between farm adjustment strategies in Waihemo, 1984-1997. *New Zealand Geographer* 55: 25-34.
- Kaiserman, M. and B. Rogers.** 1992. Forty year trends in Canadian tobacco sales. *Canadian Journal of Public Health* 83: 404-406.
- Kneen, B.** 1989. *From Hand to Mouth*. Vancouver, NC Press.
- Laitaer, L.** 1996. Personal Communication, September 1996, Ontario Flue-Cured Tobacco Growers' Marketing Board, Tillsonburg.
- Lane, S. and M. MacGregor.** 1979. Quotas and Quota Values. Guelph, Department of Agricultural Economics, Ontario Agricultural College.
- Lasley, P., E. Hoiberg and G. Bultena.** 1993. Is sustainable agriculture an elixir for rural communities? *American Journal of Alternative Agriculture* 8: 133-139.
- Lawrence, G.** 1999. Agri-food restructuring: A synthesis of recent Australia Research. *Rural Sociology* 64: 186-202.
- Le Heron, R. and M. Roche.** 1999. Rapid reregulation, agricultural restructuring, and the reimagining of agriculture in New Zealand. *Rural Sociology* 64: 203-218.
- Loughton, A.** 1988. Alternatives to tobacco: there is no magic answer. *Agrologist* 17: 15-16.
- Loughton, A.** 1991. An Industry Under Siege: Tobacco Growers and Diversification. Paper presented at the Annual Conference of the Ontario Institute of Agrologists, Simcoe.
- Loughton, A., M. Columbus and C. Roy.** 1990. The Search for Industrial Uses of Crops in the Diversification of Agriculture in Ontario. Paper presented at the First International Conference on New Industrial Crops and Products. University of California, Riverside.
- MacLaren, D.** 1984. Farmers on the march. *The Canadian Tobacco Grower* 30: 6-8.
- MacLaren, D.** 1987. Tobacco belt pinpointed as crisis area. *The Canadian Tobacco Grower* 35: 9-10.
- Mather, C.** 1999. Agro-commodity chains, market power and territory: Re-regulating South African citrus exports in the 1990s. *Geoforum* 30: 61-70.
- McKenna, M., R. Le Heron and M. Roche.** 2001. Living local, growing global: Renegotiating the export production regime in New Zealand's pipfruit sector. *Geoforum* 32: 157-166.
- McNally, S.** 2001. Farm diversification in England and Wales: What can we learn from the farm business survey? *Journal of Rural Studies* 17: 247-257.
- Napton, D.** 1992. Farm diversification in the United States. *Contemporary Rural Systems in Transition, Vol 1: Agriculture and Environment*. I. Bowler, C. Bryant and M. Nellis (eds.), pp. 87-99. Wallingford, C.A.B. International.
- Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)** 1994. Ontario Diversification Program. (Pamphlet). Simcoe, Ontario.
- Ontario Flue-Cured Tobacco Growers' Marketing Board (O.F.C.T.G.M.B.)** 1958-1997. Annual Report. Tillsonburg, Ontario.

- Ontario Ministry of Agriculture and Food (O.M.A.F.)** 1990. Transition Crop Team 1986-1990: Crop Diversification Opportunities and Challenges. Final Report, Horticultural Experiment Station, Simcoe, Ontario.
- Perkin, G.** 1962. Marketing Milestones in Ontario, 1935-1960. Ontario Department of Agriculture, Ontario.
- Pierce, J.** 1993. Agriculture, sustainability and the imperatives of policy reform. *Geoforum* 24: 381-396.
- Pierce, J.** 1994. Towards the reconstruction of agriculture: paths of change and adjustment. *Professional Geographer* 46: 178-190.
- Potter, C.** 1997. Environmental change and farm restructuring in Britain: the impact of the farm family cycle. *Agricultural Restructuring and Sustainability: A Geographical Perspective*. B. Ilbery, Q. Chiotti and T. Rickard (eds.), pp. 73-86. Wallingford, C.A.B. International.
- Poulin, C.** 1997. Tobacco. In *Canada's Alcohol and Other Drugs Survey 1994: A Discussion of the Findings*. P. MacNeil and I. Webster (eds.), pp. 44-51. Minister of Public Works and Government Services Canada, Ottawa.
- Ramsey, D.** 1998. Changes in Rural Community Well-being: A Case of the Tobacco-belt, Southern Ontario. Unpublished Ph.D. thesis, Department of Geography, University of Guelph, Ontario.
- Ramsey, D.** 2003. Responding to Restructuring Forces: Diversification in the Tobacco-belt, Southern Ontario. *The New Countryside: Geographical Perspectives on Rural Change - Volume II*. K. Beesley, H. Millward, B. Ilbery and L. Harrington (eds.). St. Mary's University: Halifax. Forthcoming.
- Ramsey, D. and J. Everitt.** 2001. Post-crow farming in Manitoba: an analysis of the wheat and hog sectors. *Writing off Rural Communities: Globalization, Governments, and the Transformation of Rural Life*. R. Epp and D. Whitson (eds.), pp. 1-20. Edmonton, Alberta, University of Alberta Press.
- Ramsey, D. and B. Smit.** 2001. Impacts of changes in the flue-cured tobacco sector on farmers in Ontario, Canada. *Applied Geography* 21: 347-368.
- Ramsey, D. and B. Smit.** 2002. Rural community well-being: models and application to changes in the tobacco-belt in Ontario, Canada. *Geoforum* 33: 367-384.
- Restrictive Trade Practices Commission.** 1956. Report Concerning the Production, Purchase and Sale of Flue-Cured Tobacco in Ontario. Ottawa.
- Ross, P.** 1976. An Evaluation of Alternative Methods of Allocating Tobacco Production Quotas on a Poundage Basis (mimeo). Consultants submission to the Ontario Flue-Cured Tobacco Growers' Marketing Board.
- Sarapnickas, J.** 1979. Spatial Change of Ontario Tobacco Production Between 1957 and 1977. Unpublished BA thesis, Department of Geography, University of Western Ontario.
- Smit, B., R. Blain and P. Keddie.** 1998. Gambling with nature: corn hybrid selection and climatic variability. *The Canadian Geographer* 42: 429-438.
- Smithers, J. and B. Smit.** 1997. Agricultural system response to environmental stress. *Agricultural Restructuring and Sustainability: A Geographical Perspective*. B. Ilbery, Q. Chiotti and T. Rickard (eds.), pp. 167-184. Wallingford, C.A.B. International.
- Special Committee on Farm Income in Ontario.** 1969. The Challenge of Abundance. Ontario Ministry of Agriculture and Food, Toronto.
- Statistics Canada** 1968-1995 in OFCTGMB (1977-1997). Agriculture - Ontario. Census Division, Statistics Canada, Ottawa.
- Statistics Canada** 1987. Agriculture - Ontario. Census Division, Statistics Canada, Ottawa.
- Statistics Canada** 1992. Agriculture - Ontario. Census Division, Statistics Canada, Ottawa.
- Steidman, B.** 1987. Churches foster self-help among tobacco farmers. *The Canadian Tobacco Grower* 31: 11.
- Stevens, T.** 1995. Trends in the prevalence of smoking, 1991-1994. *Chronic Diseases in Canada Winter*: 27-32.
- Stewart, C.** 1997. Agricultural Restructuring and Ontario Tobacco Production. Unpublished MA thesis, Department of Geography, University of Western Ontario.
- Sub-Committee on the Tobacco-Growing Industry in Canada.** 1987. The Canadian Tobacco Growing Industry in Crisis. Report of the Standing Committee on Agriculture, House of Commons, Ottawa.
- Tait, L.** 1968. Tobacco in Canada. Ontario Flue-Cured Tobacco Growers' Marketing Board, Tillsonburg, Ontario.
- Troughton, M.** 1982. *Canadian Agriculture*. Budapest, Akademia Kiado.
- Troughton, M.** 1986. Farming systems in the modern world. *Progress in Agricultural Geography*. M. Pacione (eds.), pp. 93-123. London, Croom Helm.
- Troughton, M.** 1989. The role of marketing boards in the industrialization of the Canadian agricultural system. *Journal of Rural Studies* 5: 367-383.
- Troughton, M.** 1992. The Restructuring of Agriculture: The Canadian Example. *Contemporary Rural Systems in Transition, Vol 1: Agriculture and Environment*. I. Bowler, C. Bryant and M. Nellis (eds.), pp. 29-42. Wallingford, C.A.B. International.
- Troughton, M.** 1997. Scale change, discontinuity and polarization in Canadian farm-based rural systems. *Agricultural Restructuring and Sustainability: A Geographical Perspective*. B. Ilbery, Q. Chiotti and T. Rickard (eds.), pp. 279-292. Wallingford, C.A.B. International.
- Vogeler, I.** 1981. *The Myth of the Family Farm*. Boulder CO, Westview Press.
- Wallace, I.** 1985. Towards a geography of agribusiness. *Progress in Human Geography* 9: 491-514.
- Wallace, I.** 1992. International restructuring of the agri-food chain. *Contemporary Rural Systems in Transition, Vol 1: Agriculture and Environment*. I. Bowler, C. Bryant and M. Nellis (eds.), pp. 15-28. Wallingford, C.A.B. International.

- Wilkins, D.** (ed.) 1997. Tobacco Board 40th Anniversary Special Edition. Special Edition of The Canadian Tobacco Grower. Delhi, Ontario.
- Wilson, O.** 1994. 'They changed the rules': farm family responses to agricultural deregulation in Southland, New Zealand. *New Zealand Geographer* 50: 3-13.
- Wilson, O.** 1995. Rural restructuring and agriculture - rural economy linkages: a New Zealand study. *Journal of Rural Studies* 11: 417-431.
- Yarwood, R.** 1996. Rurality, locality and industrial change: a micro-scale investigation of manufacturing growth in the District of Leominster. *Geoforum* 27: 23-37.