



ONTRACE WHITE PAPER

Traceability in Ontario's Agri-Food System – Time for a Strategy

David H. Sparling, Ph.D – Richard Ivey School of Business

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ABSTRACT

Canada's and Ontario's agriculture and food industry competes on a global stage. We have a reputation for safe, high quality food and our exports depend on this for market access. The ability to rapidly identify, then reliably trace the source of and remedy problems is increasingly critical to protecting our reputation and export business.

Ontario has the opportunity to be a leader in developing and implementing a national traceability strategy for agriculture and food, or must be prepared to follow a strategy developed by others; one that may not be in the province's best interests.

Partnerships will be essential in the short timeframe Canada has to make meaningful progress on traceability. Success will only be possible with significant industry support and extensive collaboration between industry and government.

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1.0 A New Commitment to Traceability

Traceability – we have been talking about it in agriculture and food for at least a decade. Other industries have been using it to compete for much longer. We take small steps, often in one sector, one supply chain or just in a company. Most business people acknowledge that being able to track products forward through the supply chain or trace problems back to their source is a good idea. In agriculture and food many are uncertain how best to proceed and are therefore unwilling to make the necessary investments to achieve full chain traceability.

The current economic environment makes moving ahead more difficult and yet progress needs to be made. While technology solutions are possible and full traceability is achievable, Ontario and Canada lack a clear strategy to move from the current fragmented systems to comprehensive industry-wide solutions. The essential 3C's of traceability - cooperation, coordination and commitment – are lacking.

Recently there has been heightened interest in achieving full chain traceability in Canada's food systems. The Federal, Provincial and Territorial (FTP) meetings on July 10, 2009 highlighted the following commitment by the FPT Agriculture Ministers.

*"*Ministers committed to move forward on a comprehensive national traceability system for livestock and poultry, which is critical for managing animal health and food safety issues, as well as expanding market access and driving efficiencies. **They agreed that a mandatory comprehensive national system for livestock will be in place by 2011 and that implementation will be supported by national funding and regulatory framework.** Ministers committed to engage key industry groups on the timing of implementation for each species. The Growing Forward policy framework and Agricultural Flexibility Fund will provide support for key elements of the national system."* (* = with the exception of Saskatchewan).¹

The FPT commitment highlights the key factors for developing Ontario's traceability strategy

1. **Product scope** – limited to livestock initially, and capable of extension to other commodities
2. **Timeframe** – short, with clear progress expected by 2011
3. **Geographical coverage** – National and implemented at the provincial level
4. **Support** – coming from the Growing Forward policy framework and Agricultural Flexibility Fund
5. **Commitment and authority** – Mandatory, although recent indications are that this may be softening. Enforcing traceability under such a short timeframe may be difficult.

Implications for Ontario Policy

The province has the opportunity to be a leader in developing a national strategy or must be prepared to follow a strategy developed elsewhere, one that may not be in the province's best interests. Partnerships will be essential in this short timeframe and success will only be possible with significant industry support and a process of collaboration between industry and government.

¹ Dagenais A - Deputy Director, Traceability Division; Agriculture & Agri-Food Canada. Kansas City, Missouri, August 27, 2009. *Growing Forward – A New Framework for Agriculture Policy / Traceability*

2.0 Why is traceability still a vision and not a reality?

A recent CFIA review of traceability in Canada (CFIA, 2009) identified traceability initiatives across the country. The impression is one of willingness by governments to take on leadership roles and to invest time and resources in developing traceability within their provinces; there is little sense of a national strategy or coordinated policy across provincial borders. There is also a sense of uncoordinated effort on many fronts but no major breakthroughs in traceability strategy or implementation across the country. There is no doubt there is activity, but not at a pace or with clarity of purpose which makes the 2011 objective attainable.

There are several reasons why traceability in Canada remains a future objective rather than a current reality. Discussions of traceability tend to focus on obstacles and constraints rather than on opportunities. The following questions are ones frequently heard from industry.

- *Why bother? We've been doing okay with what we have.*
- *What system should I use? There seem to be so many choices and none developed just for my industry.*
- *Who's going to pay?*
- *Who's going to see my information and will it be safe?*
- *Will traceability increase my liability?*

These are legitimate questions that members of the industry repeatedly pose. Unless they are addressed, discussions around traceability will become mired in them and it will be impossible for all but the most heavy-handed strategies to move ahead. Let's address each of these in turn.

- **Question 1: Why bother? We've been doing okay with what we have.**

Canada's agricultural industry has been given a great deal of freedom to determine its destiny. It has also received substantial levels of support from governments and from the public. However, there has been a shift in recent years. While governments and society in general remain committed to agriculture and to farmers in particular, that commitment is no longer unconditional. Consumers are asking more questions about the origin, quality and safety of their food and the methods used to produce it.² Consumer interest runs the gamut from organics, fair trade and animal welfare, to non-GMO and health-related concerns. Recent international and domestic food safety events and high profile recalls have only exacerbated those questions and concerns. But safety is just one component; in the future, the industry will be repeatedly asked to justify its practices and verify the authenticity and quality of the products that it sells.

Canada has a reputation for safe, high quality food. That reputation provides market access and, in some cases, premium pricing. But that reputation is not a "given" and is coming under increasing scrutiny. A vital element for protecting Canada's reputation is the ability to ensure the safety of products and demonstrate we have the capacity to identify potential problems rapidly and accurately and remedy them quickly. Traceability is essential to locating problems and their source.

² *Report on the Opportunity for an Ontario Food Traceability System among Consumers*, OnTrace (November 2009)

- **Question 2: What system should I use?**

Numerous interviews with farmers and processors over recent years have revealed a second obstacle to achieving full traceability – a lack of standards and no vision around the definition of a system that will best meet the broad needs of the marketplace. Uncertainty about what information the market will require in the future and which system best captures, stores and shares that information has prevented many farmers and processors from investing in traceability.

There is also considerable uncertainty over the real objectives for traceability systems and how those objectives align with the objectives of the industry. The net result is often, delay.

- **Question 3: Who's going to pay?**

This question comes up continually in discussions about traceability. In commodity-based production, there may be no apparent payoffs from implementing traceability. Products are sold on an undifferentiated basis, with no premiums associated with identifiable product characteristics that must be traceable back the source (farm). Commodity producers view traceability as just one more system (cost) imposed on them. Processors have challenges linking the inputs that enter their plants with the finished product that leaves the plant. Maintaining identity through processing could mean new equipment and revised processes, with little or no apparent benefits in the market.

With differentiated products, traceability is necessary to secure higher prices for premium products (Hobbs, 2005). The benefits provide the incentives for investing resources in traceability. Both governments and industries have exhibited a willingness to invest in traceability but for different reasons. The challenge is who can leverage investments by governments in traceability for the advantage of commerce? And how can this be done in an equitable manner?

- **Question 4: Who's going to see my information and will it be safe?**

Lack of trust about how the information will be used is also raised as a barrier. This is particularly the case for large central systems that could be constructed for an entire industry or for systems that are controlled by governments. Large central systems are neither attractive nor feasible for industry or governments. Sharing information between individual systems along supply chains is accomplished on a regular basis in many other industries. It is a matter of defining the information to be shared regularly as part of on-going transactions and operations and granting permission to specific partners to see that information.

The same holds concerning information that will be shared in the event of a public health or animal health event. Specific data is earmarked for sharing and only competent authorities are permitted access to the information under clearly defined circumstances.

The answer to this question is that information that is shared as part of normal operations will be stored inside companies and farms and will be accessed under other situations only by those with permission.

- **Question 5: Will traceability increase my liability?**

Traceability will allow problems to be traced to the source more accurately and that will play a role in assigning liability, but not having a traceability system does not necessarily limit liability³. Traceability can play a role in limiting liability by proving that a particular farm or firm is not the source of a problem. Insurance companies are just beginning to recognize this role for farms and in 2009 some insurance companies began to ask farmers whether they had systems to support traceability. This requirement will almost certainly evolve; in the future farmers without traceability may need to pay more for liability insurance or may even have liability coverage limited.

Implications for Ontario Policy

- 1. *The world is changing and the power to create policy and influence the future of agriculture and food is shifting to consumers. If industry does not define the traceability solution it will eventually be forced upon them.***
- 2. *The impact of traceability decisions goes beyond Canada's border. Protecting Canada's reputation abroad for quality and safety must be a priority for Ontario's food industry.***
- 3. *The lack of consistent system standards and clear objectives is holding back traceability.***
- 4. *Moving ahead will require a strategy for public and private investment in traceability.***
- 5. *The solution to Ontario's traceability commitment will need to be based on current business systems rather than a centralized system. It must be operated by the industry based on standards set by both industry and government.***

3.0 Aligning traceability with Ontario's agri-food vision

Ontario's agri-food industry is evolving in response to several drivers of change highlighted in Table 1. Traceability will play an important part in Ontario's response.

Table 1 Drivers of change and their implications for Ontario agriculture and food traceability

Driver of Change	Implications for Agriculture Food Traceability
Globalization and Market Access	Canada's and Ontario's agriculture and food industry competes on a global stage; price is just one facet of competition. Canada has a reputation for safe, high quality food. Those exports depend on Canada's reputation for market access and, in some cases, premium pricing. The ability to rapidly identify and remedy problems is critical to protecting that reputation ⁴ . In more cases, traceability has become a requirement for export market access.

³ For more information see the OnTrace paper *Liability and Traceability in Canada* by Thomas Manes, 2009.

⁴ For a discussion of the role of animal traceability and trade see Skaggs et al, 2008.

Global financial crisis and availability of capital	Canada lags behind other nations in investment in new technologies. The global financial slowdown has restricted access to capital for investments in traceability. However, new infrastructure investments offer an opportunity for industry-wide initiatives like traceability.
Changing consumer demands	Markets for agri-food products are becoming more segmented on dimensions of health, nutrition, quality, and brand; but also on new aspects such as organic, local, sustainable, and fair trade. Traceability provides companies with the basic information needed to capture the value associated with credence attributes of products (like organic and fair trade).
Sustainability	Concerns over energy use and the environment provide striking incentives for transforming farming and food production practices. There are already initiatives to develop measures of CO ₂ and water consumption while producing food products. Traceability is required to track and report on these measures.
Carbon Economy	Developing sustainable production processes and products throughout the entire agri-food industry will be a high priority in the future. As the economy shifts toward biomass sources of energy, there will be markets for carbon credits and other aspects of environmental goods and services. Traceability will be required to reliably capture carbon credits.
Technology	New technologies like radio frequency identification (RFID) can improve the ability to collect, store and share information. New communication technologies are making sharing information easier and faster. Technology now exists to use routine operational data as the basis for industry-wide traceability, much as a person can now access their business or bank transaction information via the Internet.
A networked world	Effective traceability can only happen if networks of separated and fragmented data can communicate and share information when necessary. Setting appropriate standards for technology, data management and information sharing will help the industry adapt to a more networked environment.
Acceptance of new technologies	Nanotechnology, genomics and biotechnology will enhance crop productivity and components but they will also create new risks and management challenges. Traceability will be necessary to manage many of those technologies and capture all of the value associated with the products, but also to protect markets that do not want the new technologies.
Interest in local and regional food	Although the industry is becoming more global, many consumers are looking for local solutions to their concerns over food quality and nutrition and the impact of the industry on the environment. Ontario consumers are not convinced that current systems provide them with all the information that they need to identify Ontario produced food products (The Strategic Council, 2009). The future of local initiatives will ultimately depend on the credibility of suppliers and improving their ability to prove product origin.

With all of the changes that will buffet the industry in the coming years it is important to have a vision for the industry and determine how traceability can support that vision. Ontario's agriculture vision could be ***“Improving life through agriculture and food quality and innovation”***. Seen in that context, traceability is essential for achieving Ontario's vision. It's important to protecting both human and animal health and it can be used as critical input for ensuring food quality and supporting industry innovation and success.

4.0 Economics and Social Benefits of Traceability

Although the costs of traceability is typically borne by multiple members of the supply chain, one of the challenges facing establishment of traceability systems has been the fact that there is a range of possible benefits from traceability systems - and these are spread across a range of stakeholders. Benefits may accrue to private stakeholders in the supply chain or throughout the industry, or to public stakeholders (including governments) and society in general (Golan et al., 2004, Hobbs, 2005, Smith et al., 2005)

Public benefits usually accrue in three areas:

- **Improved health and welfare of the population** due to reduced incidences of food borne diseases. This has benefits for the public at large and also for healthcare systems and budgets.
- **Improved animal health.** Traceability was originally brought into the industry as a means of identifying the source of animal diseases and as an invaluable aid in controlling their spread. Used in this way it has significant private benefits but also benefits to the broader industry and to protecting trade.
- **Improved industry competitiveness** and access to important export markets

Private benefits can be obtained within the supply chain; but there can also be traceability spill-over economic development effects.

- Firms and farms directly involved in the traceability systems can experience a number of possible benefits including reduced size of recall, reduced liability and potential insurance savings, better supply chain information (improving inventory management), decreased levels of product spoilage and strengthened market access.
- Farms and firms in the same industry or product categories, but not directly involved in the supply chain can obtain extra benefits from the implementation of traceability. Major food safety events have negative impacts outside the affected supply chain when customers and consumers change their buying patterns to avoid products that they perceive as risky. Industry effects can be immediate, substantial and pervasive. They can be minimized by a demonstrated ability to provide rapid and precise response to a food safety event.

The costs and benefits of traceability are being categorized and reported in a parallel paper by Andreas Boecker at the University of Guelph. Figure 1 characterizes the different kinds of benefits that can accrue from implementing traceability and fully utilizing the information in the system. These benefits are organized on axes that illustrate both the private and public benefits. Note that these can vary between subsectors.

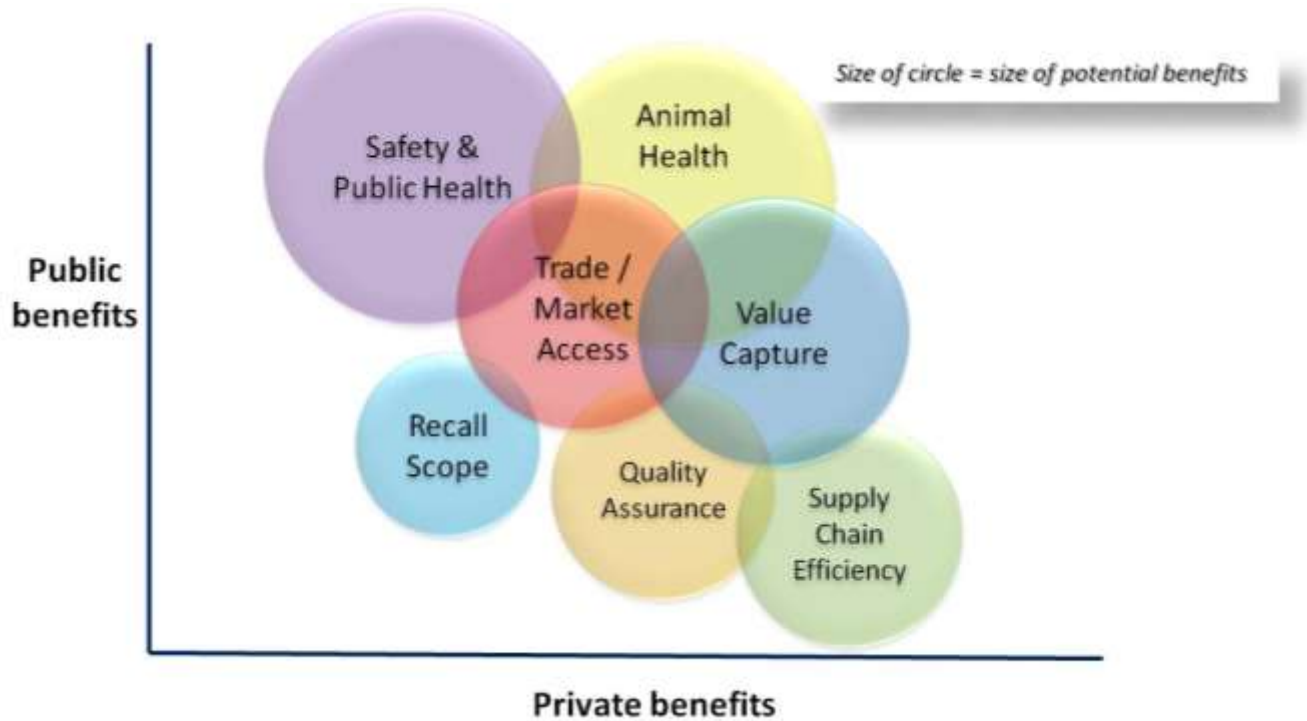


Figure 1 Benefits of Traceability

There is a clear pattern of benefits, from the large public benefits around public health at the top left to the more industry focused benefits at the bottom right. Associated with that pattern is one of increasing traceability capabilities and use of traceability data. For public and animal health purposes, traceability data must be accessible and available only in case of a food safety, natural disaster, or animal health event. However, to be used for quality or supply chain efficiency purposes, data must be accessed, analyzed and acted upon on a transactional basis. This requires more sophisticated use of technology and commitment to traceability as a business imperative.

Note that there are also other benefits which have not been included in figure 1, such as the potential for reduced insurance costs, infusions of funding into technology and software firms to develop and implement new technologies and systems for animal traceability and overall improvements in business management due to the access to improved supply chain and internal information.

Figure 1 provides an indication of funding priorities for both government and industry. While governments will be more comfortable committing resources to safety and trade applications, industry will be generally more interested in making investments for quality, value capture and supply chain efficiency purposes. The current mandate is clearly focused on public and animal health benefits providing strong incentives for government to invest in developing the necessary systems and capabilities.

5.0 Where are we? And what is missing?

Three critical elements needed to support full agri-food chain traceability are Premise Identification, Product Identification and Movement Tracking (Figure 2). Ontario is moving forward but the three sides of Ontario's agri-food traceability triangle are far from complete (Figure 3). Through OnTrace and its industry and government partners, Ontario's Premise ID infrastructure is completed. However, it has yet to be fully implemented and proven in the field. A number of commodity-specific product ID systems are in place across the province but they are far from the comprehensive and reliable systems required to achieve the FPT 2011 mandate. Movement tracking remains the weakest link; we are unable to track the movement of animals around the province, although OnTrace is working on pilot projects with industry participation.

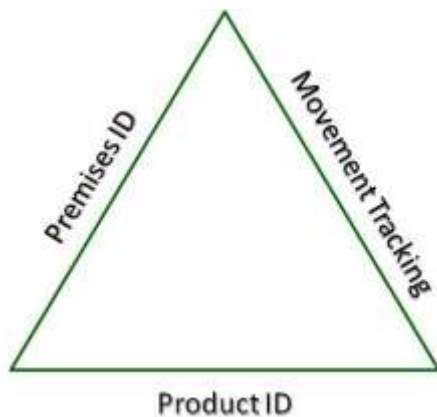


Figure 2 Necessary Traceability Elements

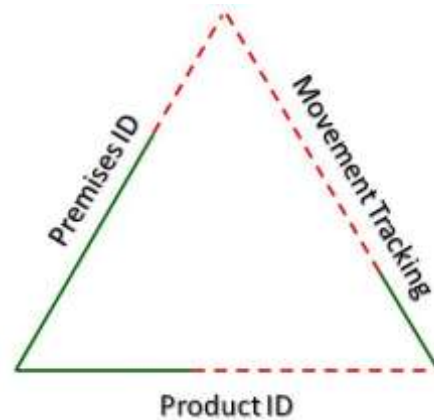


Figure 3 Ontario's status in Full Chain Traceability

The most pressing need – Investment at the System Level

The three traceability requirements are not independent systems. Rather, they are a way of conceptualizing the information and capabilities needed to provide information to create full chain traceability. At the individual business or farm level, data needed for all three elements would typically be accessible in one (or more) system(s). In many businesses, the data and the systems to collect it are already present in transactions that are done by the business. What is missing is the integrating infrastructure that ties individual farms and business data together into a full chain traceability system.

Moving from a scenario of a multitude of diverse systems and capabilities to animal traceability systems that are part of a national system requires a top down approach and a strategy to match. The objectives are clear:

- Minimize duplication of effort across different sectors
- Create high level systems that firm and farm level systems can integrate into easily
- Differentiate the systems only as much as is necessary to support the different requirements and characteristics of each animal sub-sector

There is still a great deal to do to turn the FPT objectives into reality. The essential questions are “Who should do it, and how should it be accomplished?”

The answers become apparent if one considers Figure 1. Properly implemented, traceability will result in a range of public and private benefits⁵. Therefore, a partnership between government and industry is the logical approach to creating the three basic elements of a national animal traceability system; especially using traceability to protect human and animal health. Public-private partnership models have been instrumental in delivering the successes to date, supporting many of the product ID systems in place in the province and in creating the premise registry system through OnTrace. Public agencies, industry associations and private businesses all have a stake in the ultimate outcome and all have roles to play in achieving that outcome.

6.0 Animal traceability and policy in other regions

Animal traceability has been identified as a policy priority in many countries, first as a tool for controlling and combating animal diseases (Murphy et al, 2008), but then more recently as a means of protecting human health. Canada is no exception to this focus upon livestock first (FPT Ministers announced in June 2009 the need for livestock and poultry traceability.) Although different jurisdictions (Souza-Monteiro and Caswell, 2004) and industries (USDA-APHIS reports, 2006-2009) have used different approaches there are a number of common experiences across regions.

- There is no avoiding the need for all three of the elements identified in Figure 2. Traceability requires all three components to be effective.
- Systems that are voluntary tend to be adopted by a small percentage of the industry (USDA-APHIS, 2008, Murphy et al, 2008).
- Traceability has to be flexible; different approaches are required to implement the three elements of full chain animal traceability in different subsectors. The general principles are the same; the details vary.
- Public/private partnerships are the norm, rather than the exception. From Australia, to the US and the EU, traceability strategies are developed and implemented by government agencies and industry organizations working together. Leadership appears to swing between the two depending on the “level” of the system. Consumers also recognize this reality in Ontario (OnTrace, 2009).
- At the industry level, where standards and infrastructure are created, governments often provide the leadership to initiate investment. At the subsector level, where systems are implemented, leadership tends to shift toward industry associations and organizations.

⁵ *Perspective on the Impact of Agriculture & Food Traceability on Public Health*, Tyrchniewicz and Tyrchniewicz, OnTrace (2010)

7.0 Roles for Government - Policy levers for enhancing Ontario agriculture and food traceability

Government's role is typically limited to policies and programs to support traceability. There are a limited numbers of ways for policy to influence traceability.

- Leadership, organization and integration
- Research
- Investment and cost sharing
- Tax policy
- Education and extension
- Regulation

Leadership, Coordination and Integration

Unlike the generally passive role that policy plays, leadership and organizing for action are active roles that are needed now to advance the traceability agenda. Governments know that national livestock traceability will require leadership at multiple levels of government.

- Leading a national strategy – Ontario has an opportunity to shape Canada's national traceability strategy by working with forward thinking provinces and promoting well reasoned solutions for national animal traceability. This is almost certain to result in a more satisfactory solution than waiting while others formulate a national strategy. Up to this point, the Ontario government has participated in advancing the traceability agenda – it needs to become even more active.
- Developing a provincial strategy and bringing the right people and organizations together to implement traceability in the province. Increasing traceability adoption will require leaders who can connect vision to action and
 - Guide and encourage industry groups, firms, farms and organizations to work together in public-private partnerships. Only government can bring all of the necessary players to the table but industry needs to become willing participant.
 - Drive design and development of the traceability infrastructure and connecting the players.
 - Empower stakeholders to take leadership roles within their industries and communities.
 - Direct and support the adoption of standards, systems, processes and technologies needed for full traceability.

Research

Traceability will require on-going research support in several areas.

- *Technology* - What are the best technologies and systems for Ontario's agriculture and food industries? Where have they been applied and are working? Can we leapfrog other countries?
- *Application and impact* - How can traceability strengthen competitiveness of Ontario agriculture and food? What new business opportunities can traceability encourage?

- *Systems integration* - What’s the optimal approach to integrating so many industry systems? Who is going to lead implementation and drive adoption of industry standards?
- *Policies* – How can policy best support traceability adoption and impact? How is support and funding best managed?

Investment

Traceability is an agriculture and food infrastructure investment. Traceability infrastructure will help achieve the public benefits of traceability, protecting public and animal health and supporting market access and trade. It will also provide the platform on which to build food safety systems and enhanced industry capabilities. The investment in OnTrace helped create the necessary premises validation capabilities, but movement tracking and animal identification also require investment.

Ontario has committed \$25 million to enhancing food safety and traceability at the business level. This is a necessary investment; however, firm level investments will not be sufficient to create a provincial traceability system. This much is already clear from the past several years of pursuing this policy. Completing Ontario’s traceability infrastructure by closing the three sides of the traceability triangle should become the first priority for public investment.

Traceability should also be an industry investment priority. Here the motivation and application of industry funding will be different, as discussed earlier. There are really three appropriate levels where investments should be made, by private firms, by industry associations and marketing boards and by government as illustrated in Table 2.

Table 2. Traceability investment and appropriateness for different stakeholder groups

Investment	Government	Industry associations	Private firms and farms
Supporting infrastructure & emergency management	High	Medium	Low
Research	High	Medium	Low
Education and extension for initial adoption	Medium	High	Medium
Extension into supply chain opportunities	Low	Low	High
Extension into new value opportunities	Low	Medium	High

Tax Policy

Although tax policy is a powerful tool for increasing investment in a particular area, traceability is not sufficiently high profile nor does it yet have enough economic impact to attract changes to tax policy. Research and development incentives should be used to encourage new technologies and site-level solutions that comply with basic industry standards. In the current situation, tax policy is not anticipated to play a major role.

Education and Extension

Education and extension will be an ongoing requirement to create widespread industry adoption. Several different components will be needed

- Standards development and adoption
- General traceability education, including implementation training
- Adoption programs targeted at specific industries and supply chains
- Extension to support producer and processor businesses after implementation

Collaboration with industry organizations will be the key to creating effective programs.

Regulation

This is the crucial policy lever but one that governments are reluctant to use and that industry will resist strongly. FPT ministers mandated animal traceability by 2011, meaning that regulation will almost certainly follow at some time if substantial industry progress is not evident. Experiences in food safety and environmental programs in Canada and abroad have shown that voluntary compliance will only go part way to creating a recognized, credible and reliable traceability system. Trading partners want to see the maple leaf on our traceability system and that would mean government regulation.

Regulation, or the real threat of regulation, will be required to bring all of the industry (“gate to plate”) onside. Public expectations for action around food safety will definitely push for a regulatory solution if the industry does make adequate progress.

Implications for Ontario Policy

There are two critical needs in advancing Ontario's traceability agenda, leadership and funding. Only the government has the ability to bring all industry stakeholders together to focus on developing traceability in the province. That role is probably the most important one for OMAFRA to play at this point.

Regarding funding, Ontario has already committed \$25 million to supporting food safety and traceability; but a significant portion of the funding should be focused on creating the critical infrastructure needed for a provincial-scale system.

8.0 Roles for Industry – Translating national objectives into industry reality

Eventually, traceability will be implemented in specific industries and into supply chains and individual businesses. Industry associations and marketing boards are uniquely positioned to act as the interface between the goal of national traceability and the reality of diverse industry systems. Their leadership will be essential to developing solutions for their industries. If they fail, systems will not advance in their sub-sectors and governments may resort to regulation to achieve full chain traceability. This will almost certainly be sub-optimal for the industry and will represent a failure for the association/board.

There are several ways that industry associations and boards can help achieve national animal traceability goals. First, they can enunciate clear traceability objectives for their subsector. Once the objectives are clear, they can help assess the state of traceability in their subsector and work with members of their supply chains to identify the most pressing gaps and areas for investment. Collectively, industry associations can work with government to create an agenda and investment plan for developing the traceability infrastructure for the entire agriculture and food industry. Some industry sectors have already taken these steps. They can then work within their subsector to set the necessary standards and to develop and implement a project plan. Project plans should begin with pilot projects to develop and refine subsector systems and then roll-out implementation for the entire subsector.

Traceability objectives and implementation plans will differ by subsector. Although all will have the primary objective of meeting the FPT mandate for traceability to protect human and animal health, secondary objectives will vary depending on the nature and structure of the subsector and its trade patterns. While protecting export market access will be significant objectives for subsectors like cattle, pork and dairy genetics, they may be less important for supply managed subsectors like dairy and poultry. Subsectors will also want to create an environment in which farms and firms are encouraged to build their capabilities and move beyond the human and animal health objectives to develop systems that support quality, efficiency and value capture. This flexibility calls for longer term planning with an eye to expanding capabilities, as has already been done in some subsectors around quality and food safety.

9.0 Key principles

Any strategy must be based on key principles which guide the planning process and project implementation. The following are suggested as a starting point.

1. Ontario will be a leader in agriculture and food quality and innovation
2. The system will focus on two key objectives
 - a. Safeguarding human health will be the highest priority of the system.
 - b. Protecting animal health and access to key markets will be the second key objective.
3. The systems implemented must support protecting human and animal health but also allow the maximum flexibility to enable firms to achieve other business objectives.
4. Traceability should be implemented in a manner which minimizes the cost and disruption needed to achieve its objectives. It should work at “the speed of business”.
5. Achieving full chain traceability requires full chain involvement – all parts of a chain must participate.
6. Full chain traceability will be achieved through public/private partnerships.
7. Ontario's systems must be harmonized with national traceability systems.

10.0 Creating an action plan for provincial and national animal traceability

There is a great deal to be done to implement traceability in Ontario's livestock sectors. Meeting the FPT mandate will require collaboration across the different subsectors and along animal product chains. Understanding the needs of the entire chain and involving players along the chains will be essential. Government, producer organizations, processors, wholesale and retail companies must be engaged early and actively to create and implement an Ontario strategy. That strategy must be coordinated across subsectors, but also across provinces, aligning Ontario's strategy with the national strategy.

A major challenge for any private/public partnership to create full chain traceability is agreeing upon where to start, who should be responsible and how to extend first steps into full chain traceability. The experience to date has been one of bottom-up development - individual firms or supply chains developing traceability systems independently. The results – a fragmented array of systems that range from simple paper-based to complex RFID – clearly leaves only one policy lever that can move us to full chain traceability. That would be a regulatory solution dictating requirements on all these systems with little regard for the cost or consistency of the systems across the agriculture and food industry. This would be a costly and sub-optimal approach, one that would alienate the industry and reduce its competitiveness.

Given our past experience, a more favourable strategy is to take a pragmatic, top-down approach. This would begin at the industry level and identify which sectors are most able to move quickly and what steps can be taken in common across all sectors to focus investment and resources, avoid duplication, and speed development. The recent premises registry system development is an example of this strategy. Ontario's premises registry can be model for moving ahead and the under-pinning of a full traceability system.

Table 3 below proposes one way that this approach could be used to develop and execute Ontario's livestock traceability strategy. The approach involves continually searching for common solutions and then moving to the subsector level to create the flexibility needed in each subsector to implement the strategy. The timeline would be determined during the early stages of the process.

Table 3 Suggested Approach for developing an Ontario Traceability Strategy

Activity	Key activities	Responsibility	Scope	Completion
Phase 1 – Defining the End Goal				
Defining the overall objective	Creating a common understanding of exactly what the end goal is. What do governments need to see to meet the FPT mandate? Making traceability a clear priority for both industry and government.	Government to lead industry wide consultations to clearly define the objective	Entire industry and at all levels of animal chains	March 31 – The Jan. 28 th meeting could be a start
Outcome: A clear definition of the final target to meet FPT mandate				
Phase 2 – Collecting the Necessary Information				
Defining the information needs	Combined industry/government meetings to agree upon information to be gathered, objectives for phase 1, project timeline and responsibilities. Draft circulated prior to meetings.	Government leads with industry association support	Entire industry and at all levels of animal chains	March 31, 2010
Data collection by subsector	<ul style="list-style-type: none"> -Definition of full chain traceability capabilities needed in each subsector -Best practices in place now -Requirements at different levels of subsector value chains -Gap analysis -Prioritization of activities to close the gap. -The entire process should be driven by practical pilot projects, not by a universal “one approach fits all” plan. 	Industry associations	Subsector, full chain	
Setting objectives by subsector	<p>Each subsector defines its traceability gaps and its objectives for developing traceability in its subsector.</p> <p>Short term – meet FPT mandate</p> <p>Long term – go beyond FPT to supply chain & value capabilities</p>	Industry associations	Subsector, full chain	

Outcome: Situational analysis by subsector with goals, gap and priorities				
Phase 3 – An Infrastructure Action Plan to Meet FPT Mandate				
<i>Identify industry-wide infrastructure gaps/needs</i>	The key to speed and cost will be coordination across the entire industry where possible. Where can sub-sectors cooperate to develop common systems or system elements, software or training programs? What are the common infrastructure needs across subsectors? For example, standards are an important gap that must be addressed by industry.	Government/ industry working group coordinates with industry associations	Entire industry and at all levels of animal chains	
<i>Define infrastructure investment priorities</i>	Prioritize investments needed to meet FPT mandate. Determine funding requirements and an infrastructure investment plan	Working group with government and industry input	Entire industry and at all levels of animal chains	
<i>Create an infrastructure completion project</i>	Lay out clear project plans for completing the infrastructure investments needed to support full animal traceability	Working group	Entire industry and at all levels of animal chains	
Outcome: Complete infrastructure project plan and funding commitments				
Phase 4 – Meeting FPT Mandate in each subsector				
<i>Subsector planning</i>	Each subsector completes their plan for necessary investments and actions to build onto the traceability infrastructure. Some subsectors already have strategies – What is needed to execute those plans?	Subsector working group or project team	Subsector, full chain	
<i>Subsector investment</i>	Identification of subsector investment needs and possible funding	Subsector project team & government	Subsector, full chain	
<i>Subsector education/extension</i>	Development of a subsector education/extension plan. Where possible these plans are coordinated across subsectors and common training elements are developed across the industry	Subsector project team coordinating with the gov't/ industry working group	Subsector, full chain	

Implementing the plan	Bringing the resources together and executing the plan	Subsector project team working with firms and farms in the subsector	Subsector, full chain	
Outcome: Meeting FPT commitments - Achieving full chain traceability in Ontario’s animal industries				
Phase 5 – Going Beyond the FPT Mandate				
Setting higher level objectives	Each subsector team considers what additional traceability capabilities will be important to their industry and set objectives for achieving them or for supporting the development of industry capabilities needed to achieve them in individual chains	Subsector project team	Subsector, full chain	
Higher level traceability planning	Each subsector develops a plan for moving to higher levels of use of traceability systems and data to capture both supply chain efficiencies and value opportunities.	Subsector project team	Subsector, full chain	
Implementing the plan for advanced traceability	Implementation will likely occur on a chain by chain basis but capacity to do so may be developed across willing subsector firms and farms	Individual chains with possible support from the subsector team	Individual subsector chains	

11.0 Conclusion

Although achieving the FPT government traceability commitment will be a serious challenge, it can be achieved with a concentrated, highly focused and well supported effort over the next two years. The need for industry-wide action will require provincial authorities to take a visible leadership role bringing all of the players together. The preferred strategy will be top-down, relying on leadership to bring industry participants into the system.

The timeline is tight and the commitment required from government and industry will be substantial. Both will need to invest time and money but costs can be mitigated by working across sectors. The goal is attainable.

Some of the money already committed to traceability by Ontario needs to be focused into industry-wide, full chain infrastructure projects, rather than entirely devoted to site-level projects. The most pressing need at this point is to complete a blueprint for the technology architecture and develop practical solutions for businesses, farmers and supply chain members.

An all industry working group, collaborating with the Ontario government, should identify priorities where government investments and resources are needed most and will have the greatest impact.

The challenge is significant and perhaps daunting. But so are the potential rewards: safer food, reduced risk to human and animal health, greater market access and the potential for improved business competitiveness. Ontario has been lagging in developing traceability. Achieving the FPT mandate will push the province to the forefront in traceability in Canada and much of the world.

Is Ontario ready to take the lead?

12.0 References

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