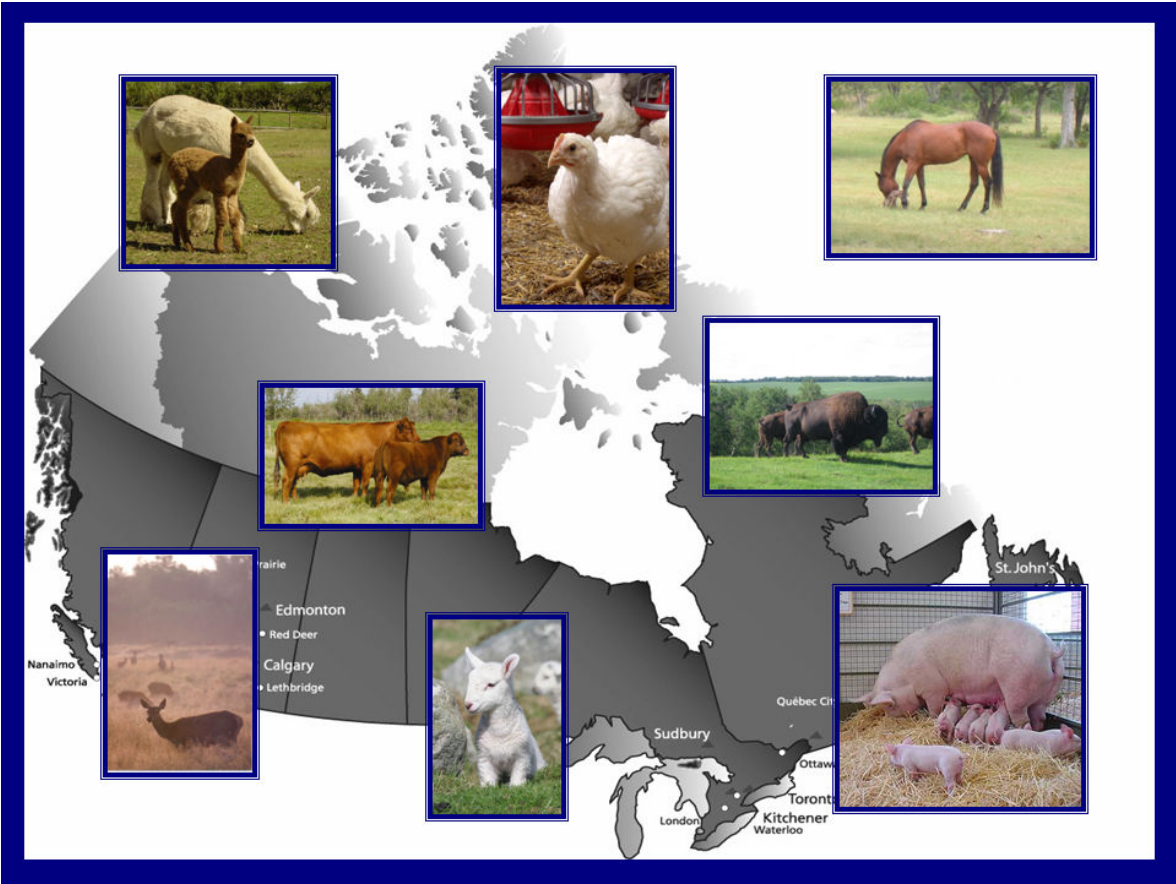


NATIONAL FARMED ANIMAL HEALTH AND WELFARE STRATEGY

“A framework for industry and government”



CCVO/Farmed Animal Industry
Joint Working Group
8 May 2009

TABLE OF CONTENTS

MEMBERS OF THE JOINT WORKING GROUP	iv
--	----

EXPERT CONTRIBUTORS TO THE NATIONAL FARMED ANIMAL HEALTH AND WELFARE STRATEGY	v
--	---

SECTION 1: THE NATIONAL FARMED ANIMAL HEALTH AND WELFARE STRATEGY

EXECUTIVE SUMMARY	1
1. Background.....	4
2. Purpose	5
3. Scope	5
4. Framing the National Farmed Animal Health and Welfare Strategy (NFAHWS).....	6
Societally Oriented Strategic Outcomes	8
Improved Market Access	8
Protecting Public Health	8
Improving Farmed Animal Care and Welfare	8
Protecting Ecosystem Health	9
Governance	10
Infrastructure/System	11
Characteristics of the Future Farmed Animal Health System.....	12
5. Achieving the National Farmed Animal Health and Welfare Strategy	13
Priority Measurable Outcomes for Governance	13
Suggested Actions for Governance	13
Priority Measurable Outcomes for Infrastructure.....	14
Suggested Actions for Infrastructure	14
6. The Future National Farmed Animal Health and Welfare Strategy	16

SECTION 2: GUIDING REFERENCES

Guiding Reference 1. Collaborative Governance	G1
Guiding Reference 2. Options for Future Governance	G5
Guiding Reference 3. Components:	
Anticipation and Agri-Intelligence	G8
Surveillance	G10
Risk Analysis.....	G12
Research and Innovation	G14

Future Leader Development	G16
Renewal and Foresight.....	G18
Disease Management.....	G19
Laboratory Diagnostic Network	G22
Identification and Traceability	G24
Zoning and Biosecurity.....	G26
Policy Formulation	G28
Regulated Biologics and Pharmaceutical Products.....	G29
Education and Training	G31
Data Management.....	G33
Communication, Outreach, and Awareness.....	G35
Financial Risk Management.....	G36
Performance Measurement	G38
Recovery Aspect of Disease Management	G40
 Guiding Reference 4. Ecosystem Health.....	 G42
 Guiding Reference 5. Market Access.....	 G44
 Guiding Reference 6. Public Health	 G46
 Guiding Reference 7. Farmed Animal Care and Welfare	 G48

SECTION 3: APPENDICES

Appendix 1. The Process for Developing the NFAHWS	A1
Appendix 2. Development of the Components by Expert Contributors	A2

MEMBERS OF THE JOINT WORKING GROUP

Name	Role	Affiliation
David Alves	Team Member	Ontario Ministry of Agriculture, Food and Rural Affairs
Nora Abercrombie	Project Management Support	Alberta Agriculture and Food
Bill Ballantyne	Team Member	Canadian Meat Council
Helene Bergeron	Team Member	Ministère de l'agriculture, des Pêcheries, et de l'Alimentation du Québec
Réjean Bouchard	Team Member	Dairy Farmers of Canada
Ron Clarke	Strategy researcher/contributor	Alberta Agriculture and Food
Ed Empringham	Team Member	Canadian Animal Health Coalition
Amanda Gross	Administrative Support	Manitoba Agriculture, Food, and Rural Initiatives
Steve Leech	Team Member	Chicken Farmers of Canada
Wayne Lees	Chairperson	Manitoba, Agriculture, Food and Rural Initiatives
George Luterback	Team Member	Canadian Food Inspection Agency
Jennifer MacTavish	Team Member	Canadian Sheep Federation
Rob McNabb	Team Member	Canadian Cattlemen's Association
Gerald Ollis	Team Member	Alberta Agriculture and Food
Morgan Radford	Team Member	Canadian Pork Council
Archie Stewart	Team Member	Canadian Food Inspection Agency
Hugh Whitney	Team Member	Newfoundland Department of Natural Resources
Norm Willis	Strategy Development Lead	Canadian Animal Health Coalition

EXPERT CONTRIBUTORS TO THE NATIONAL FARMED ANIMAL HEALTH AND WELFARE STRATEGY

It is with sincere appreciation that we acknowledge the thoughtful input, based on knowledge and experience, offered by the many talented people who contributed to the development of this National Farmed Animal Health and Welfare Strategy.

Our special thanks go to:

- Eric Aubin
- Ralph Christian
- Jim Clark
- Bob Clarke
- Ron Clarke
- Mary Dean
- Louis Desautels
- Gordon Dittberner
- Mike Dungate
- John Graham
- Will Hueston
- Paul Kitching
- Mark Klassen
- Steve Leech
- Jennifer MacTavish
- Grant Maxie
- Cindy McCreath
- Herb McLane
- Bruce McNab
- Rob McNabb
- Rick McDonald
- Randy Morley
- Fonda Munroe
- National Farm Animal Care Council (coordinated by Jackie Wepruk)
- Klaus Nielsen
- Ole Nielsen
- Bert Pereboom
- Christine Power
- Morgan Radford
- Ian Richardson
- Barry Stemshorn
- Jean Szkotnicki
- Matt Taylor
- Susan Wilkinson
- Susan Wilson

SECTION 1:

THE NATIONAL FARMED ANIMAL HEALTH AND WELFARE STRATEGY



EXECUTIVE SUMMARY

Currently and in the foreseeable future the farmed animal industry will face many and profound changes and challenges. The animal health status of farmed animals, and the credibility of the farmed animal health system, are the most significant, influencing factors. Changing social values, the increasing challenges of zoonotic diseases, and environmental change, also intensify the pressure on the farmed animal sector.

The current farmed animal health system is not responding adequately to these challenges.

For the first time, a National Farmed Animal Health and Welfare Strategy (NFAHWS) has been designed to project a vision for the future, and to provide guidance and future pathways towards this vision.

The vision is:

“Canada values and supports the health, care, and welfare of the farmed animal population and its contribution to the well-being of people, the environment, and the Canadian economy”.

What is required is a farmed animal health system which is collaborative, innovative, responsive, sustainable, agile, and effective.

The NFAHWS has been developed in a collaborative fashion by the Joint Working Group with participants from the Council of Chief Veterinary Officers, the Canadian Food Inspection Agency, the farmed animal industry, and the Canadian Animal Health Coalition.



In the development of the Strategy, eight Strategic Outcomes were identified as necessary to realize the vision.

- 1. Improve capacity to avoid threats and anticipate opportunities**
“providing anticipation and forewarning of adverse events leading to avoidance and prevention”.
- 2. Improve capacity to respond to threats and create opportunities**
“building on preparation for a rapid and effective response”.
- 3. Improve public confidence in Canada’s farmed animal health system**
“accomplished through communication messages which demonstrate that animal health,

public health, and ecosystem health are in balance”.

4. Improve industry viability

“by minimizing financial risk and expediting recovery to a normal business state after an adverse event”.

5. Improve market access

“through improved farmed animal health status and the credibility of the farmed animal health system”.

6. Improve capacity to protect public health

“by the farmed animal sector being an integral part of the “one-health” system”.

7. Improve farmed animal care and welfare

“by sharing responsibility for farmed animal care and welfare practices that have a basis in science and reflect societal values”.

8. Improve capacity to protect ecosystem health

“achieving an environmentally sustainable system for raising farmed animals”.

The eight Strategic Outcomes are dependent on 18 components or subject areas within the NFAHWS. Experts in these 18 areas contributed their thinking to fully develop these components.

It was also determined that there are two critical elements that are absolutely crucial to the success of the NFAHWS,

- Governance
- Infrastructure/systems

Governance

Governance is the core element that must be resolved for the NFAHWS to succeed. It is the basis of the farmed animal health system, and defines how farmed animal health will be achieved in Canada. Future governance must be collaboration amongst all the major stakeholders in farmed animal health in Canada, namely the farmed animal industry, the federal government, and the provincial/territorial governments. In fact the theme for the NFAHWS can be stated as “Working Together through Collaborative Governance”.

Governance represents the way all stakeholders work together. The spirit of the relationship is what is important, and it should be based on trust and respect. The elements of governance are defined as,

- authorities
- accountabilities
- roles and responsibilities

- decision making
- dispute resolution.

This can be accomplished by establishing a “National Farmed Animal Health Council” with a mandate for policy formulation.

To function properly, this Council must be supported by an independent, jointly funded secretariat which would facilitate and organize the information flow and the operation of the Council.

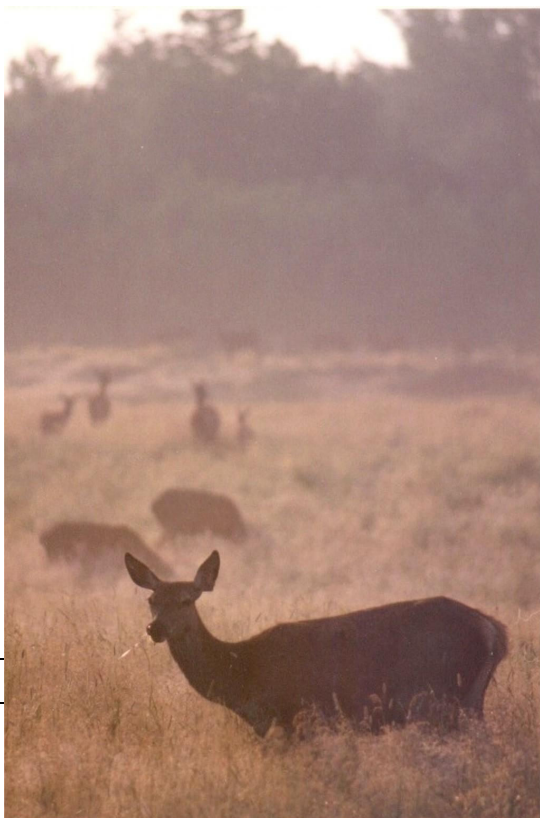
In order to bring farmed animal health to the required level of prominence, options for alternative decision making organizational structures, have been offered.

Infrastructure/systems

Infrastructure, the second critical element, enables and facilitates an effective farmed animal health system. Infrastructure has 18 components or subject areas that must be addressed to achieve a superior farmed animal health status. As stated above, ultimately these 18 components will lead to the achievement of the Strategic Outcomes.

Of these components disease management is a priority and must be approached as a shared responsibility amongst all farmed animal health stakeholders. It can only be successful with the contribution of the supporting elements of:

- Agri-intelligence
- Surveillance
- Risk analysis
- Laboratory diagnostics
- Identification and traceability
- Zoning and biosecurity.



The most cost effective approaches to disease control, however, are avoidance, forewarning, and prevention of disease. These demand an increased emphasis and investment in capability.

The farmed animal sector also has significant and important obligations to society. These are revealed through its linkages to public health and ecosystem health, in which zoonotic disease and environmental change are increasingly evident. The farmed animal sector’s performance in the animal health/public health/ecosystem health triad, will strongly influence public perception of the farmed animal sector and the maintenance of public confidence.

All farmed animal stakeholders must share in the responsibility of maintaining, enhancing, and ensuring farmed animal care and welfare practices that have a basis in science and reflect societal ethics.

Innovation is a key to creating a unique Canadian advantage. This can be unleashed by supporting research in a more focused way, and by creating a free thinking “Expert Advisory Group”.

Status quo within the farmed animal health system is no longer a viable option. Canada urgently needs a re-energized farmed animal health system. Nationally there is the capability to achieve this through the National Farmed Animal Health and Welfare Strategy, and there is a growing momentum of collective will to do so. It will take working together, decisions, commitments, and actions by all farmed animal health stakeholders to reach the vision and maintain Canada’s global reputation as a world leader in farmed animal health.

1. BACKGROUND

Over the last half century, Canada has earned and enjoyed an enviable reputation for the animal health status of its farmed animal sector. In the current era however, massive changes on many fronts (changes in the environment, globalization in trade, rising energy costs, erratic economics, and new diseases) challenge the maintenance of this reputation.

Canada is a trading nation, but it is vulnerable to capricious and unfair trading practices. Disease status is increasingly being used as a barrier to trade. Despite international efforts to establish science-based standards for trade, these pressures have severely challenged and damaged the economic viability of Canada's farmed animal industry.

Additionally, social values and expectations relative to the farmed animal sector, are changing. Demands for heightened standards in food safety and improved animal welfare are becoming increasingly intense.



A worldwide urgency to address the increasing challenge of zoonotic diseases is leading to global public reactions and even paranoia. The pursuit of the “One Health” concept is gaining prominence and farmed animal health must be perceived as an integral part of public health. As well environmental changes are looming threats on the horizon.

The current farmed animal health system is not responding adequately to these challenges. Resourcing to support the farmed animal health system is inadequate, erratic, and does not rest on a coherent platform which rewards high productivity and a return to business as usual as its goal. The farmed animal health system across the country is disjointed and uncoordinated.

The status quo can no longer be accepted as a viable option.

Canada has reached a stage where significant change in the farmed animal health system is imperative to prevent the decline of the farmed animal sector. This is necessary not only to serve the farmed animal industry, but also to serve Canadian society in general.

The time for innovation and renewal is now, and the urgency is acute.

The positive aspects are that Canada has tremendous assets and capability. Further, all major stakeholders in farmed animal health recognize and accept the need for change. There is a positive momentum for change, and a willingness to consider new ways of collaboration and new ways of focusing energies for the benefit of the farmed animal sector and of all Canadians.

Canada has an opportunity to excel in the area of farmed animal health. By focusing the innovation and organization inherent within the farmed animal stakeholders, it can be a global

leader in farmed animal health. It must seek to bring together and capitalize on all of its assets, and achieve new ways of working together.

The NFAHWS has been designed to project a vision for the future, and to provide guidance and future pathways towards this vision. The Strategy has been developed in a collaborative manner by a Joint Working Group consisting of participants from the Council of Chief Veterinary Officers (CCVO), the Canadian Food Inspection Agency (CFIA), the farmed animal industry, and the Canadian Animal Health Coalition (CAHC). This collaboration models what may become the future imperative for working together.

The National Farmed Animal Health and Welfare Strategy (NFAHWS) is the road map to achieve the vision for a superior farmed animal health status in Canada. The Strategy focuses on the future and illuminates the ways to get there.

While the Strategy does not seek to provide solutions to all concerns, it does offer direction for the specific areas considered to be of most significance to the future success of farmed animal health in Canada.

2. PURPOSE

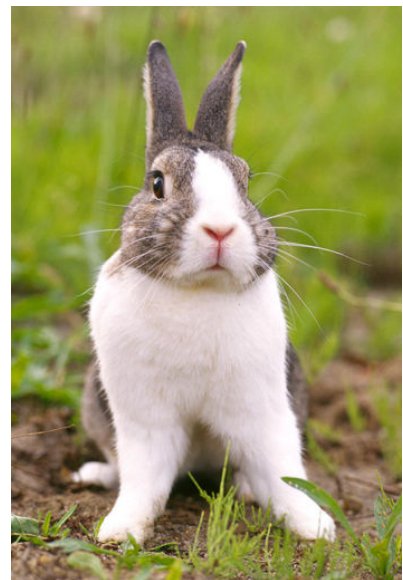
The purpose is to create and maintain a National Farmed Animal Health and Welfare Strategy that will guide and support industry, government, and other organizations in policy development and programming.

3. SCOPE

The scope of the NFAHWS is to embrace perspectives of animal health, human health, ecosystem health, and economic health while achieving the defined purpose. It is complimentary to food safety initiatives.

By definition, an animal means a mammal, bird, or bee, and farmed animals are defined as terrestrial animals, raised in farming conditions for food production, products, or services. This definition would also include non-traditional livestock such as rabbits, llamas, alpacas, bison, cervids, specialty birds, mink, poultry raised for commercial and non-commercial purposes, ducks, geese, game birds, bees, and small holdings of animals.

The scope of the NFAHWS does not include aquaculture, fish, marine mammals, nor wildlife unless there is an interaction with domestic livestock, but it is recognised that these other sectors should be linked.



4. FRAMING THE NATIONAL FARMED ANIMAL HEALTH AND WELFARE STRATEGY (NFAHWS)

A diagram of the framework for the NFAHWS is found in *Figure 1*.

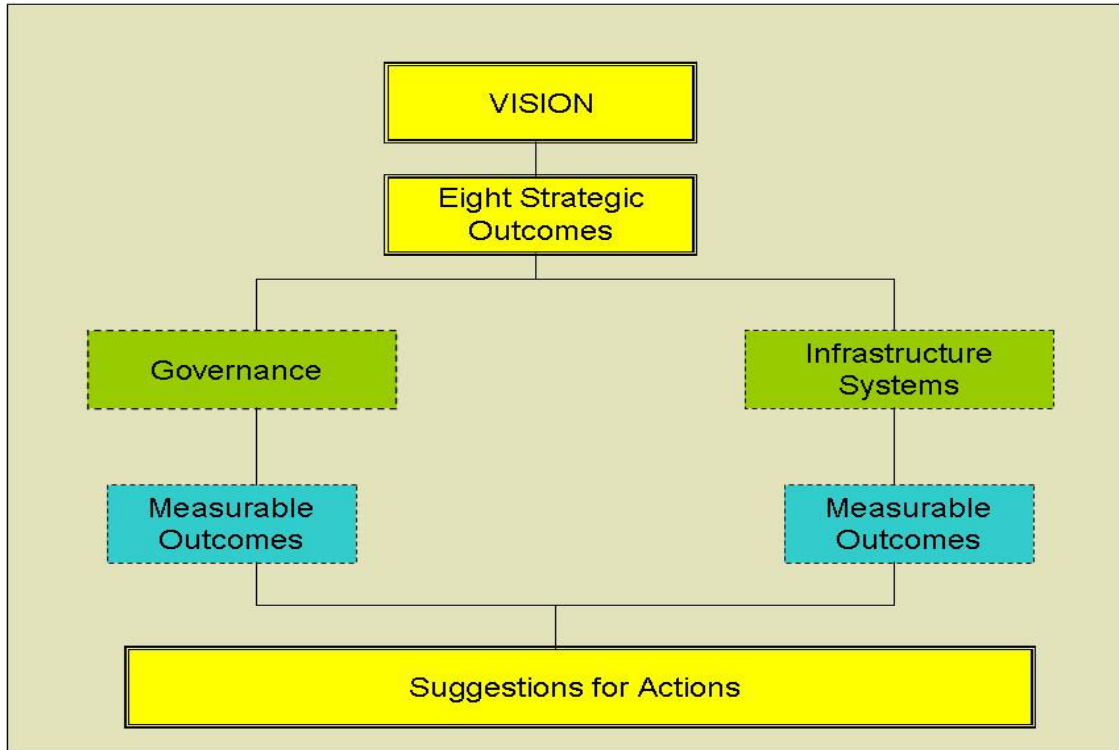


Figure 1. Framing the Farmed Animal Health Strategy

The vision for the future National Farmed Animal Health and Welfare Strategy is

“Canada values and supports the health, care, and welfare of the farmed animal population and its contribution to the well-being of people, the environment, and the Canadian economy.”

For Canada to excel in farmed animal health requires an enhanced farmed animal health system. Canada is judged on the basis of its farmed animal health status, and on the credibility of its farmed animal health system. The NFAHWS will guide the policy development, and programming which will lead to a superior farmed animal health status. This will only be possible if an effective farmed animal health system is there to enable it.

To achieve the vision eight Strategic Outcomes were considered essential (see Appendix 1). These Strategic outcomes are:

1. Improve capacity to avoid threats and anticipate opportunities

“providing anticipation and forewarning of adverse events leading to avoidance and prevention”.

2. Improve capacity to respond to threats and create opportunities

“building on preparation for a rapid and effective response”.

3. Improve public confidence in Canada’s farmed animal health system

“accomplished through communication messages which demonstrate that animal health, public health, and ecosystem health are in balance”.



4. Improve industry viability

“by minimizing financial risk and expediting recovery to a normal business state”.

5. Improve market access

“through improved farmed animal health status and the credibility of the farmed animal health system”.

6. Improve capacity to protect

public health

“by the farmed animal sector being an integral part of the ‘one-health’ system”.

7. Improve farmed animal care and welfare

“by sharing responsibility for farmed animal care and welfare practices that have a basis in science and reflect societal values”.

8. Improve capacity to protect ecosystem health

“achieving an environmentally sustainable system for raising farmed animals”.

The Strategic Outcomes are divided into those that improve the farmed animal health system and the farmed animal health status, and those that are societally oriented. The Strategic Outcomes that improve the farmed animal health system and status are:

- Improve capacity to avoid threats and anticipate opportunities
- Improve capacity to respond to threats and create opportunities
- Improve public confidence in Canada’s farmed animal health system

- Improve industry viability

The Strategic Outcomes that are societally oriented are:

- Improve market access
- Improve capacity to protect public health
- Improve farmed animal care and welfare
- Improve capacity to protect ecosystem health

SOCIETALLY ORIENTED STRATEGIC OUTCOMES

Improved Market Access

Strategic Outcome 5, market access, must be emphasized through a dedicated group, responsible for this function. Market access will be sustained and increased by enhancing the national farmed animal health status, by increasing the credibility of the farmed animal health system, and by recognizing the importance of the relationship between animal health and food safety for the consumer. The principles of this topic with projected Measurable Outcomes and suggestions for actions are presented in *Guiding Reference 5*

Protecting Public Health

Globally zoonotic diseases are occurring more frequently and are taking longer to be resolved.. Many countries are emphasizing and accelerating their response. Canada however, is not keeping pace and therefore must change. Strategic Outcome 6, protecting public health can be realized when the farmed animal sector forms an integral part of the public health decision making infrastructure in Canada. The achievement of a seamless, integrated “one-health” governance system would proactively deal with threats to the public and to the farmed animal sector in a mutually beneficial manner. Principles, Measurable Outcomes, and suggestions for action are presented in *Guiding Reference 6*.

Improving Farmed Animal Care and Welfare

Strategic Outcome 7, farmed animal care and welfare, will be accomplished when all farmed animal stakeholders share in the responsibility of maintaining, enhancing, and ensuring farmed animal care and welfare practices that have a basis in science and reflect societal values. Once again, Principles, Measurable Outcomes, and suggestions for action are presented in *Guiding Reference 7*.



Protecting Ecosystem Health

Strategic Outcome 3, ecosystem health, will be realized when the farmed livestock industry has implemented voluntary programs to move to an environmentally sustainable system for raising farmed animals.

Many environmental resources upon which farmed animal industries are reliant, are currently either under serious threat or are associated with significant environmental challenges. To remain sustainable, the farmed animal industry must address and mitigate these issues through proactive, innovative approaches. As a minimum, these approaches must address manure management and the nitrogen cycle, water consumption and availability, and energy consumption. A summary of this subject with projected Measurable Outcomes and suggestions for actions to achieve them, is presented in *Guiding Reference 4*

The focus of the Strategy, safeguarding animal health, rests on two critical elements:

- Governance
- Infrastructure/systems.

GOVERNANCE:

Governance is one of the two critical elements of the framework. It is the basis of the farmed animal health system, and defines how farmed animal health will be achieved in Canada.

Currently, the system of governance for farmed animal health in Canada is inadequately coordinated to realize the full potential of future opportunities, or to avoid or address future challenges.

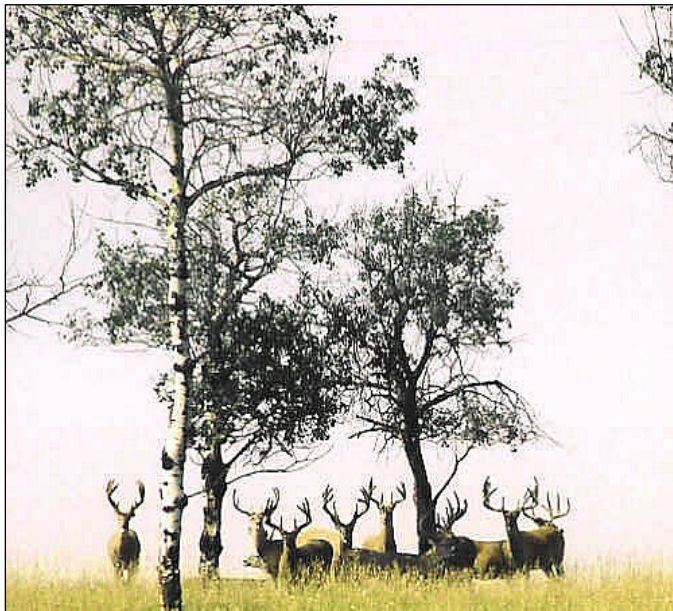
Governance is the core element that must be resolved for the NFAHWS to succeed.

Future governance must bring together all aspects of farmed animal health. The essential feature must be collaboration amongst all the major stakeholders in farmed animal health in Canada, namely the farmed animal industry, the federal government, provincial/territorial governments, the veterinary community and other service providers.

The future farmed animal health system would operate under the theme “Working Together through Collaborative Governance.”

The essence of the future governance would be built on a platform of a “National Farmed Animal Health Council” (NFAHC). Its members should represent the leadership of the farmed animal industry, the federal government, and the provincial/territorial governments.

The mandate of the National Farmed Animal Health Council would be policy development.



For the Council to be effective, there must be an independent, supportive secretariat to organize and facilitate the functioning of the Council, and to manage the flow of information.

For sustainability of governance functioning into the future, there must be an active commitment to future leader development in all the major stakeholders.

As well, consideration should be given to alternative organizational structures that would bring farmed animal health to a state of prominence which would sustain and promote the viability of the farmed

animal industry, and ultimately serve the best interests of all Canadians.

Collaborative governance is explored in greater detail in a section at the end of the report, entitled *Guiding Reference 1*.

Options for alternative decision making organizational structures are presented in *Guiding Reference 2*, but in every alternative, the concept of a National Farmed Animal Health Council is retained as a fundamental “base action item.”

INFRASTRUCTURE/SYSTEM:

Farmed animal health infrastructure in the future NFAHWS enables and facilitates a nimble, effective and responsive farmed animal health system. To be highly effective, the system must provide:

- timely intelligence, surveillance, and forewarning of adverse events;
- risk analysis to permit the management of risks;
- rapid and effective response to emergencies;
- unencumbered collaborative decision making
- predetermined resource decisions allowing rapid access to resources
- minimal negative impact of adverse events on the farmed animal industry with a subsequent expedient recovery;
- an effective, coordinated and responsive federal and provincial regulatory regime;
- a strategy to adapt to and meet changing circumstances;
- innovation;
- system sustainability through future leader development
- a system which perpetually renews itself.



The infrastructure of the NFAHWS has 18 components. Each of these components was defined and described for the future by expert contributors (see Appendix 2).

These components are:

- | | |
|--|--|
| <ul style="list-style-type: none"> • Anticipation and agri-intelligence • Research and innovation • Future leader development • Disease management • Identification and traceability • Policy formulation • Education and training • Communication, outreach, awareness • Performance measurement • Surveillance | <ul style="list-style-type: none"> • Risk analysis • Renewal and foresight • Laboratory diagnostic network • Zoning and biosecurity • Recovery • Data management • Financial risk management • Regulated Biologics and Pharmaceutical products |
|--|--|

Summaries of each of these components with projected Measurable Outcomes and suggestions for actions to achieve them are presented in *Guiding Reference 3*.

Characteristics of the future farmed animal health system

The Strategic Outcomes and the critical elements of Governance and Infrastructure all constitute the future NFAHWS. The Strategy will enable and enhance the credibility of the farmed animal health system in Canada.

The relationship of all the elements and components of the Strategy to the desired characteristics of an enhanced farmed animal health system is shown in Figure 2. This displays the central role of governance as well as the flow from inputs to outcomes, and the desired characteristics of the future farmed animal health system.

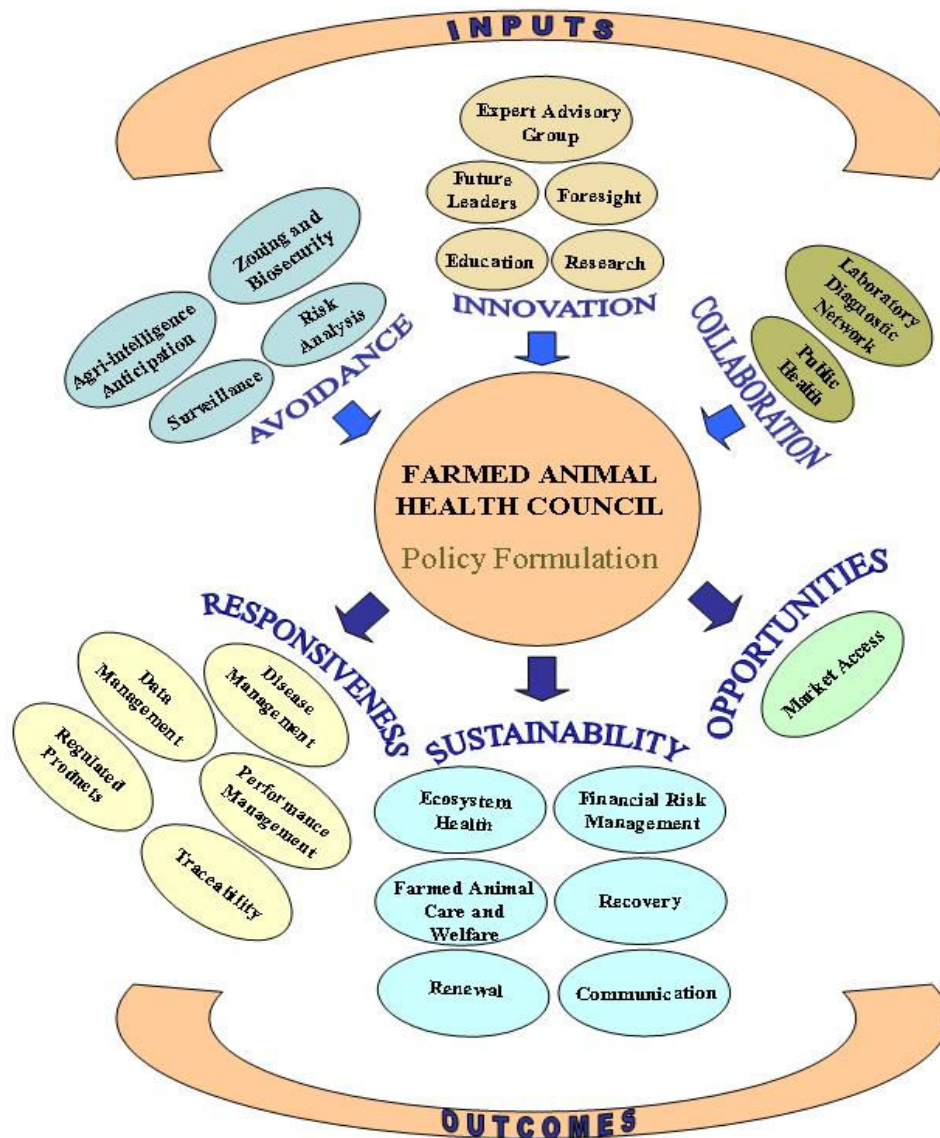


Figure 2. Characteristics of the future farmed animal health system.

5. ACHIEVING THE NATIONAL FARMED ANIMAL HEALTH AND WELFARE STRATEGY

To bring the future NFAHWS into reality, a number of priority Measurable Outcomes are proposed with suggestions for possible actions to reach these Measurable Outcomes.

Governance

Priority Measurable Outcomes:

- the collaborative governance model for policy development and decision making has been established;
- roles, responsibilities, and accountabilities have been established for participants in the collaborative governance model;
- roles, responsibilities, and accountabilities for all significant diseases of farmed animals, have been established amongst the federal government, the provincial/territorial governments, and the farmed animal industry;
- an “Expert Advisory Group” has been established;
- an effective financial risk management model has been created;
- stakeholders in farmed animal health can demonstrate an improved farmed animal health status;
- policy development includes and addresses the environment, wildlife, and public health.

The draft Action Plan will be built from the suggestions for action.

Suggested Actions:

- appoint a Steering Committee for the formation of the National Farmed Animal Health Council;
- form the National Farmed Animal Health Council;
- establish an independent secretariat to organize and facilitate the functioning of the Council, and to manage the flow of information;
- develop, negotiate, and conclude an agreement amongst the farmed animal sector, the federal government, and the provincial/territorial



governments, for the shared responsibility, management, and funding of all significant diseases of the farmed animal sector.

Infrastructure/Systems

Priority Measurable Outcomes:

- an integrated, national laboratory diagnostic network is in place with defined capabilities and funding to ensure ongoing sustainability;
- a national, integrated surveillance system is established and functional;
- integrated, national information sharing agreements are established and functional;
- national biosecurity standards have been implemented and fully operational;
- an integrated, national traceability system is established and fully operational;
- a collaborative process involving farmed animal health stakeholders, decides on the prioritization of research;
- multi-dimensional teams and networks (including both academia and industry) are established nationally and internationally for the identification, analysis, and evaluation of hazards and threats to animal health;
- future leadership development is an integral component in the plans of all farmed animal health stakeholders;
- licensing and veterinary medical education requirements are reconciled ensuring that veterinary expertise is available to the farmed animal sector;
- a farmed animal health services delivery model is capable of meeting the NFAHWS needs;
- stakeholders in farmed animal health demonstrate an improved farmed animal health system.

Suggested Actions:

- create an agri-intelligence network (process and training) to leverage the value of agri-intelligence through appropriate analysis, discussion, and sharing amongst all farmed animal health stakeholders;
- renew focus and support for the availability and sustainability of an integrated laboratory diagnostic network as the fundamental backbone of the farmed animal health system

(enhanced Canadian Animal Health Laboratory Network);

- build on the Canadian Animal Health Laboratory Network to establish an agreement for the collaborative integration of a national surveillance system (Canadian Animal Health Surveillance Network);
- define and allocate responsibility for the appropriate level of investment in financial risk management;
- accelerate support of the collaborative development of a national biosecurity system;
- demonstrate leadership to develop regulation policy, and academic programming to ensure the availability of farmed animal health services, specialists, and allied disciplines;
- renew the focus and support for a collaborative, national, all-hazards approach (Incident Command System) for emergency planning and response;
- evaluate all options for addressing industry viability following adverse farmed animal health and welfare events;
- complete the functional operation of the West Hawk Lake model for zoning and traceability with adequate funding and staffing, and apply the lessons learned there to other zoning initiatives;



- building upon the capacity of the Surveillance and Epidemiology Advisory Committee of the CCVO, to create a collaborative, integrated risk analysis network (ad hoc teams, working groups, permanent committees) to meet the demands of farmed animal health and market access;
- raise the animal identification and traceability systems to an agreed

standard for all farmed animal species;

- establish a program to support future leader development;
- renew focus and support for farmed animal health extension services to producers;
- initiate a collaborative process for research prioritization with a renewed focus on farmed animal health and welfare;
- fund, finalize, and approve the updated NFACC Codes of Practice process.

6. THE FUTURE NATIONAL FARMED ANIMAL HEALTH AND WELFARE STRATEGY

For the first time, a farmed animal health strategy has been designed for Canada. It was developed in a collaborative fashion involving all the major stakeholders in farmed animal health.

The NFAHWS represents a composite plan and future direction for the desired farmed animal health system in Canada.

The most important element of all in the NFAHWS is collaborative governance. This is absolutely essential. It can be accomplished through the establishment of a “National Farmed Animal Health Council”.

If this Council is to function properly, it must be supported by an independent, jointly funded, “honest broker” secretariat.

In addition, options for alternative decision making organizational structures for animal health are offered.

To achieve a superior farmed animal health status, disease management must be a primary concern. It must be approached as a jointly shared responsibility amongst the federal government, the provincial/territorial governments, and the farmed animal industry, for all significant diseases of farmed animals. Avoidance and prevention of disease must be the dominant emphasis.

The farmed animal sector must also consider its important obligations to society through its significant linkages to public health and ecosystem health. The animal health, public health, and ecosystem health triad must be recognized and must be in balance. This will strongly influence the public perception of the farmed animal sector and the maintenance of public confidence.

Capitalizing on innovation is the key that will lead to a unique Canadian advantage for the farmed animal industry and for all Canadians.

The NFAHWS is the pathway to a highly credible and productive farmed animal health system and to the superior farmed animal health status that is essential to realize the vision for farmed animal health in Canada.



SECTION 2:

GUIDING REFERENCES



GUIDING REFERENCE 1 COLLABORATIVE GOVERNANCE

“The governance component of the NFAHWS is a collaborative, informed, effective, and nimble system leading to decisions which are appropriate, timely and accepted.”

It is essential that the governance system,

- enable the sustainability of the farmed animal sector,
- maintain public confidence in the entire farmed animal system.

Principles:

- Governance represents the use of power to the best advantage of the stakeholders, including the Government of Canada, the provincial governments, the farmed animal sector, and all Canadians.
- The elements of governance are defined as,
 - authorities
 - accountabilities
 - roles and responsibilities
 - decision making
 - dispute resolution
- Future governance uses a collaborative approach amongst the farmed animal industry, the federal government, and provincial governments yielding planning, guidance, and the implementation of the NFAHWS.
- Governance represents the way all stakeholders work together. The spirit of the relationship is what is important, and it should be based on trust and respect.
- A continuum of options for such a working relationship is presented in *Figure 3*

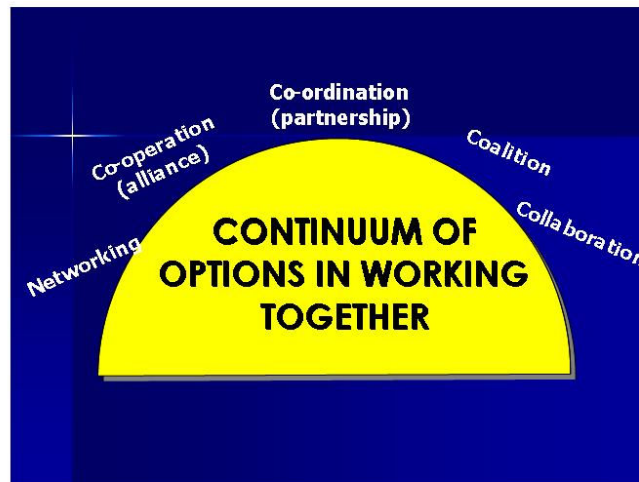


Figure 3: Continuum of Options in Working Together

The elements of the option selected for future governance can be described as follows,

- accomplishing a shared vision
 - built on an interdependent system to address issues and opportunities
 - a National Farmed Animal Health Council forms a central body
 - positions are endorsed as decisions by legislative authority
 - roles are defined
 - leadership is high, trust level is high, productivity is high
 - ideas and approaches are equally shared
 - there is highly developed communication.
- Future governance is built on a core of a National Farmed Animal Health Council (NFAHC). The participants in this Council represent leadership from the farmed animal industry, the federal government and provincial governments. Depending on the specific issue, this may be supplemented with representation from the Canadian Veterinary Medical Association (CVMA), the Public Health Agency of Canada (PHAC), and the Association of Deans of Veterinary Colleges.

The participants are selected based on the specific issue, and on achieving balance. All participants are at a level with authority to make decisions.

- The NFAHC is charged with debating issues within the scope of the NFAHWS, and arriving at a consensus for the best possible approach in a collaborative, non-combative process.
- A preliminary step in the process is for the NFAHC to be well informed. This can be provided with at least two mechanisms.
 - Issues (international, national, regional) are immediately captured when they are detected through
 - agri-intelligence

- anticipation
- surveillance
- grass roots level of the farmed animal system (e.g. producers, practicing veterinarians, and diagnostic laboratories).

This would enable decisions and actions which could avoid and prevent adverse events.

- An annual fully inclusive consultation/discussion conference can be held with participation by all farmed animal industry sectors, the federal government, provincial governments, CVMA, PHAC, animal care and welfare, and other interested parties.

This would be organized, facilitated, and summarized by an independent secretariat.

Information on specific issues would be prepared and distributed in advance to all participants.

There would be no foregone conclusions but rather facilitated consultations and discussions of the previously determined specific issues.

All discussions would be summarized, distributed, and submitted to the NFAHC by the secretariat.

- The best possible approach to specific issues, achieved by the NFAHC, would be presented for decision to those organizations with authority for implementation.
- The NFAHC would be convened when required by need or on a regular basis if the number of issues demanded it.
- The NFAHC could be co-chaired by the farmed animal industry and government.
- Participation on the NFAHC would be considered a top priority, and would be amenable to activation on an urgent basis if required.
- If the NFAHC reached an impasse and was unable to develop a position, the dispute would be referred to a higher level that involved the farmed animal industry, the federal government, and the provincial governments for dispute resolution.
- The primary area for consideration first should be “disease management” for
 - foreign animal diseases
 - new or emerging diseases
 - production limiting diseases
 - significant zoonotic diseases

- trade limiting diseases.

Measurable Outcomes (2015):

- Responsibilities, within the scope of the NFAHWS, are defined and accepted amongst the federal government, provincial governments, and the farmed animal industry.
- Responsibility for all diseases of concern in the farmed animal sector (production limiting, new, emerging, foreign), has been established on a varying shared responsibility basis.
- The concept of a NFAHC has been accepted and is established.
- Based on the agreed distribution of responsibilities, the authority to implement all required action has been verified.
- It is accepted that accountability is associated with authority.
- To address responsibility for the funding of action, a definition distinguishing public good from private good has been established and is accepted for guidance on funding as it relates to the management of disease in the farmed animal sector.

Recommendations for Action (2009-2015):

- Upon acceptance of the NFAHWS, proceed with the establishment of the National Farmed Animal Health Council.
- Establish an independent secretariat function to organize and facilitate the functioning of the Council.
- Establish a joint workshop involving leadership of the farmed animal industry, the federal government, and the provincial governments, to agree on the sharing of responsibility for all diseases of concern in the farmed animal sector.

GUIDING REFERENCE 2 OPTIONS FOR FUTURE GOVERNANCE

In the selection of the preferred option, there are desired outcomes to be achieved, such as,

- Improved collaboration
- Improved policy development
- Improved information sharing
- Improved clarity on the role of participants
- Enrichment of national animal health policy products
- Improved clarity of the linkage to national animal health operations.

Option 1:

Establish a separate branch within the Canadian Food Inspection Agency (CFIA)

- This Branch, which would be dedicated to animal health policy development in Canada, would operate under a separate Vice President who would report directly to the President.
- The Branch would accept the output of the NFAHC as essential collaborative farmed animal health policy development.
- The Branch would execute the maturation of animal health policy development.
- The Vice President would be selected on the basis of experience and knowledge of animal health needs, vulnerabilities, and opportunities, both nationally and internationally. As well this person must possess a passion for improving farmed animal health in Canada.

Option 2:

Establish a separate branch within Agriculture and Agri-Food Canada (AAFC)

- This Branch, which would be dedicated to farmed animal health policy development in Canada, would operate under an Assistant Deputy Minister who would report directly to the Deputy Minister.
- This option emulates the Food Safety model which separates policy from program delivery. Policy is the responsibility of Health Canada while program delivery is operated by CFIA.
- This Branch would incorporate the output of the NFAHC as essential, collaborative farmed animal health policy development.
- The Branch would execute maturation of farmed animal health policy development.

- Policy implementation for farmed animal disease management would be delivered by CFIA, while policy implementation for market access would be delivered by AAFC.
- The selection criteria for the Assistant Deputy Minister would be as outlined in Option 2.

Option 3

Create an Animal Health Agency of Canada

- This Agency would be an independent agency for all animal health policy development in Canada, and would report directly to the federal Minister of Agriculture and Agri-Food.
- The Agency would be led by the Chief Veterinary Officer of Canada.
- This model is a direct parallel to the Public Health Agency of Canada, and would promote enhanced joint action on policy development for zoonotic disease.
- The Agency would incorporate the NFAHC as essential collaborative animal health policy development.
- Policy implementation for animal disease management would be delivered by CFIA, while policy implementation for market access would be delivered by AAFC.

Option 4:

Develop a combined phased evolution of animal health policy development in Canada.

- Initiate and operate the NFAHC as described above within the first year.
- Select the most appropriate option for the continued evolution of animal health policy development and decision making.
- Initiate the development of the selected option within the third year and be fully operational within five years, or within the five to ten year period.
- This option responds to the immediate needs of the farmed animal sector, and allows for the continued maturation of the animal health policy decision making process.

GUIDING REFERENCE 3

COMPONENTS



ANTICIPATION AND AGRI-INTELLIGENCE COMPONENT

“Agri-intelligence of global events, conditions, and issues, and an anticipation function which serves to identify, evaluate and analyze these present forces as well as their emerging implications, greatly contribute to avoidance of adverse events and to achieving Canada’s future leadership goals.”

Principles:

- The anticipation and agri-intelligence functions must be future oriented.
- There must be established and accepted methods or principles to prioritize various threats or hazards so that resources can be allocated to them.
- Agri-intelligence requires formal training.
- Anticipation and agri-intelligence are multi-dimensional and integrated. This means there must be an integration of many different fields. This must also be global in nature and must rely on multi-national networks and collaboration.
- Agri-intelligence must be tied into other parts of the farmed animal system without being controlled or interfered with by these other parts, for example, program development, policy development and operational components.

Measurable Outcomes (2015):

- A two-pronged approach to analysis of issues and events is well established. The first prong is a traditional intelligence cycle with analyses of threats which have already been evaluated and which present a clear threat. The second prong is a warning (anticipation) approach which identifies emerging issues or events such as diseases, and significantly contributes to avoiding or minimizing the damage to animal health in Canada.
- Well established principles for prioritization of disease control activities which incorporate the products of anticipation and agri-intelligence are in place.
- Individuals are identified and trained in the methods of anticipation, including agri-intelligence.
- Multi-dimensional teams and networks are established nationally and internationally for the identification, analysis and evaluation of hazards and threats to animal health.
- These teams and networks are not isolated. They have a mechanism linking them into policy and program development and operational implementation.

Recommendations for Action (2009-2015):

- Resources should be dedicated to the development of this anticipation function with the establishment of necessary networks and training.
- Principles for prioritisation of emerging threats must be developed. The types of inputs to this prioritisation process include resources, availability of mitigating options, social/cultural influences, etc.
- Different sectors must improve communication and develop fora for exchange of information and joint analysis.
- Anticipation and agri-intelligence must be integrated into planning and program activities.

SURVEILLANCE COMPONENT

“Surveillance within the future NFAHWS is achieved through a fully integrated system which provides and interprets data to facilitate risk analysis and decision analysis to serve national, provincial, and regional needs of the farmed animal sector.”

Principles:

- Animal health surveillance may be defined as the on-going systematic collection, collation, analysis, and interpretation of animal health data, with the dissemination of the resultant information for decision making.
- Surveillance provides baseline information to allow differentiation of abnormal from normal states, or variation from the status quo.
- Actions based on information from surveillance can reduce the frequency and severity of the negative impacts of animal diseases or the threat of disease because the frequency, distribution, and determinants of disease, and the populations at risk are better understood.
- Surveillance allows the early detection of disease and the identification of emerging events related to endemic diseases, or changes in the status quo.



- The adoption of sound scientific principles within surveillance contribute to the validity and credibility of the analysis and resolution of complex issues.
- Animal and premises identification and animal movement knowledge are critical to effective surveillance.
- The surveillance system must consider and protect personal and proprietary information.
- Surveillance supports international trade and the competitiveness of animal based agriculture. It provides documented evidence that supports trading partners and international animal health agencies recognizing Canada's capacity to detect important diseases in animal

populations and the transboundary incursions of trade-limiting diseases.

- The information from surveillance enhances public confidence in the management of animal health issues.
- There should be a national surveillance system which integrates all potential sources of surveillance data for analysis and use by all decision makers within the farmed animal health system.
- Surveillance provides data for the prioritization of investment in research and risk management.
- The allocation of surveillance resources should be prioritized for the greatest return on investment according to the risk (probability, consequences, and uncertainty) that diseases and hazards present to society.
- The surveillance system must retain the capacity to rapidly scale-up, scale-down, or re-focus as new challenges or changes in risk importance demand.
- The plan for future surveillance should be reviewed annually by the stakeholders in the farmed animal health system.

Measurable Outcomes (2015):

- A national, integrated surveillance system is established and functional.
- Data from the surveillance system is incorporated into risk analysis and decision analysis.
- Farmed animal health stakeholders annually review the surveillance work plan and establish priorities for resource allocation based on the greatest return for the farmed animal industry.

Recommendations for Action (2009-2015):

- Establish an agreement for the collaborative integration of a national surveillance system.
- Develop a collaborative process to annually review the future surveillance plan and prioritize resource allocation.

RISK ANALYSIS COMPONENT

“Animal health risk analysis, focusing on probability and consequences, is routinely, fully, and transparently integrated into farmed animal health decision analysis, with the input of economists being involved in consequence assessments.”

Principles

- The definitions, concepts, and procedures used for risk analysis in farmed animal health should align with those endorsed by the World Organization for Animal Health (OIE) and the Codex alimentarius.
- Risk is a combination of the probability of an undesirable outcome and the magnitude of the negative consequences or impact of the outcome as well as the uncertainty of the risk probability or consequences.
- Risk analysis includes risk assessment, risk mitigation, and risk communication.
- There is no such thing as zero risk, but risks can be controlled by reducing either the probability or the impact of the risk or both.
- Risk assessment involves the systematic identification of the hazard, the probability of the negative outcome, the negative consequence, and the uncertainty.
- Risk mitigation involves the systematic identification and weighing of options to reduce the risk to an acceptable level.
- Risk communication involves multi-directional exchange of information and discussion of all aspects of risk analysis and its perception, with the risk generator, the risk recipient, and the risk beneficiary, to reach a state of agreement.
- Risk analysis, whether quantitative or qualitative, will continue to improve in quality and robustness.
- Risk assessments, to be practical, will continue to be specific for one scenario or one set of scenarios rather than the complete set of scenarios.
- International involvement in risk analysis will continue to grow as will the exchange of risk assessments in trade negotiations.
- “Worst case scenarios”, which are routinely used in some areas, will be abandoned in favour of more credible and useful assessments based on best estimates.

- Risk communication will probably forever continue to be based on trust rather than on an understanding of risk.
- Risk assessment uses scientific methods and information to support decision analysis, but it does not make decisions.

Measurable Outcomes (2015):

- The principles and language of risk analysis are applied on a routine basis in decision-making.
- Large policy decisions by industry and regulators have the principles of risk analysis properly applied and documented in a transparent manner.
- Animal health surveillance systems feed objective, semi-quantitative and quantitative data into the probability and impact components of risk assessments.
- Industry and regulators have designed protocols and integrated systems that mitigate risk to the health of farmed animals in Canada on a routine ongoing basis.
- A sufficient number of competent risk analysts are available nationally and are adequately funded to provide the needed risk analyses for evidence based decision making to support Canadian farmed animal health and international market access.

Recommendations for Action (2009-2015):

- Apply what is already known in risk analysis to reduce the probability and mitigate the impact of current significant risks to farmed animal health.
- Apply the core concepts of risk analysis in every decision that might impact farmed animal health.
- Design, implement, monitor, and refine integrated farmed animal systems of production and marketing that minimize the probability and impact of risk to the health of farmed animals and related public health.
- Ensure that there are a sufficient number of competent risk analysts available to meet the demands of farmed animal health and market access.

RESEARCH AND INNOVATION COMPONENT

“Innovation in thinking and research into new knowledge and technology are key elements in creating opportunities within the NFAHWS for an unique Canadian advantage.”

Principles:

- Research is essential in assuring knowledge and technology to support and execute the NFAHWS.
- Most research activities will likely centre around technologies such as nanotechnology and its application to animal health.
- New technologies must be rapid and timely, economically achievable and exert little or no harm on the environment.
- Main areas of research deserving special attention include,
 - disease diagnosis e.g. through on farm diagnostic technology, or injecting nanoparticles for pathogen detection or therapeutic outcomes.
 - animal health policy research,
 - nanoparticles used to insert genes directly into cells for desirable characteristics such as disease resistance,
 - bioinformatics and new methodology for biological measurements to develop evidence based animal health policies,
 - nanoparticles as molecular vaccines inserted directly into cells of the immune system,
 - ecosystem health including wildlife diseases transmissible to humans and domestic animals and vice versa.
- Decisions on the prioritization of research as well as the degree and source of funding support, should be made cooperatively on the advice of all major stakeholders in farmed animal health, namely,
 - Farmed animal industry
 - Federal government
 - Provincial and territorial governments
 - Academia

An “Expert Advisory Group”, composed of the best thinkers in farmed animal health, would create an opportunity for innovative thinking. The Group’s sole mandate would be to seek ways of improving farmed animal health to Canada’s advantage.

Measurable Outcomes (2015):

- Veterinary academia in conjunction with federal and provincial agencies, and in consultation with industry, have established academic and research programs in animal health policy analysis.
- A collaborative process involving farmed animal health stakeholders, decides on the prioritization of research and the approval/support of research projects.
- An innovative “Expert Advisory Group” has been established and is operative.

Recommendations for Action (2009-2015):

- Initiate academic and research programs in animal health policy analysis.
- Develop and implement an “Expert Advisory Group”.
- Initiate a collaborative process for research prioritization.

FUTURE LEADER DEVELOPMENT COMPONENT

“The sustainability of the future NFAHWS depends on the on-going development and availability of leaders that embrace the future, and that can adapt to and manage the dilemmas of the future farmed animal industry.”

Principles:

- The challenges and opportunities facing farmed animal health are increasingly complex and defy the simple solutions of the past.
- Farmed animal health is seen as one facet of the overall health of the ecosystem and as such is integrally linked to wildlife, human health, and environmental quality.
- Future leadership development will rest not on greater specialization but rather on instilling a set of skills to more effectively contribute to a shared or collaborative leadership model, and to be able to lead leaders (metaleadership).
- Future leaders should have a thorough understanding of the needs, complexities, vulnerabilities, and opportunities of the farmed animal industry, as well as processing a personal commitment to improving farmed animal health in Canada.
- Future leaders need to know themselves well in terms of their strengths and weaknesses, and be able to contribute in a team environment. They must be able to work within organizations and across organizations.
- Future leaders must have the skills to listen in order to engage potentially affected stakeholders, and to gain the trust and credibility of those they serve
- Future leaders must have a keen sense of situation awareness, being able to spot situations that can serve as “windows of opportunity” to facilitate change and move ahead key public policy making.
- Future leaders must be able to create teams, build partnerships, foster collaboration, and enhance cooperation.
- Future leaders must be able to find “win-win” approaches to managing increasingly complex dilemmas so that all parties can take pride and ownership in the decisions and commit to their implementation.
- Future leaders must help those in positions of power to make appropriate and sound decisions, and to understand the ramifications of their decisions.

- To develop future leadership, skill building must be fostered in several key areas;
 - Communications – listening, sharing, empathizing.
 - Informatics – collecting, collating, and analyzing data.
 - Diversity and intercultural competencies – celebrating differences and working in multi-cultural settings.
 - Professionalism – ethics, integrity, focusing on the mission and goals rather than on one’s self.
 - Systems thinking – understanding the interrelationships of inputs, processes, and outputs.
 - Planning – strategic, tactical, operational
 - Team building – recruitment, facilitation, negotiation, celebration.

Measurable Outcomes (2015):

- A cadre of potential future leaders has been selected and is in a program of leadership development.
- Future leadership is an integral component in the planning by all farmed animal health stakeholders, and is reflected in the plans.
- The development of some future leaders has been completed – they are identified and incorporated into the infrastructure of the farmed animal health system.

Recommendations for Action (2009-2015):

- Select suitable candidates for leadership development.
- Enrol some candidates in international leadership development programs which already exist.
- For suitable candidates implement leadership development exchange assignments amongst farmed animal industry sectors, federal government, and provincial/territorial governments.
- Assign planned resource allocation to leadership development as a priority.

RENEWAL AND FORESIGHT COMPONENT

“To maintain its vibrancy and relevance, the NFAHWS will be subject to periodic evaluation of its progress against established goals, and will undertake renewal in response to changing needs. Foresight technology and the innovative thinking of the Expert Advisory Group will be integral parts of the renewal process by providing a long-term, forward oriented perspective.”

Principles:

- Because of the massive changes facing the farmed animal industry, it is essential that the NFAHWS remain adaptable and responsive to changing circumstances.
- The NFAHWS will only remain relevant if it evolves dynamically, in parallel with constant environmental change.
- For the farmed animal industry to be successful and globally competitive, the NFAHWS must be constantly looking to the future and anticipating threats, challenges, and opportunities.
- Foresight technology cannot predict the future, and does not select a most probable future.
- Foresight thinking is, by definition, not linear. Foresight develops a series of possible and plausible futures from a broad range of perspectives.
- By considering a range of possible futures and their consequences, potential responses to each can be determined. Thus the farmed animal sector will be in a better position to respond to whatever future does come to pass.

Measurable Outcomes (2015):

- The NFAHWS has been subjected to annual evaluations of its progress through performance measurement, and a full scale renewal process involving all farmed animal stakeholders at four years of its five year cycle.
- At three years of its cycle, a foresight study has been conducted to establish a long term perspective on the NFAHWS, as input for the full renewal process.

Recommendations for Action (2009-2015):

- Annually evaluate the progress of the NFAHWS against the pre-established goals.
- In 2010, conduct a foresight study with the farmed animal sector as a model study within the CRTI initiative, “Development and Application of Foresight and Future Visioning to Support Capability Based Planning for Animal Health Emergency Management in Canada.”

- Develop a plan for a NFAHWS renewal process in 2012.

DISEASE MANAGEMENT COMPONENT

“Disease management in the future NFAHWS will emphasize disaster forewarning and prevention through global agri-intelligence and anticipation. It will enhance response and recovery through cooperation nationally and internationally, reduce disease transmission, mitigate trade impacts and psychosocial impacts on agricultural communities. “

Principles:

- International anticipation and agri-intelligence activities are critical for forewarning of potential threats or risks present in other countries.
- The priority of import risk management is hazard identification in the country of origin rather than mitigation activities once the product is in Canada.
- Inspection of imported products must be improved. Imports must be tracked after release.
- A mechanism must be developed to prioritize active surveillance programs for specific diseases and species of farmed animals or wildlife where appropriate. The surveillance system must be statistically valid and ongoing.
- The federal government, provincial/territorial governments and the farmed animal industry must share responsibility, according to a pre-determined agreement, for risk management of foreign, reportable, production limiting, and emerging diseases.
- Animal identification for all farmed animal species is a necessity. Traceability with real time movement reporting for all farmed animals, animal products, and by-products from the farm to the consumer is critical and must be in place. Without this, effective disease control is not possible.
- Preparation is a dominant principle for effective management of newly emerging disease conditions.
- An agreement which determines eligibility for compensation, funding responsibility, and financial assistance must be established and accepted amongst the federal government, provincial/territorial governments, and the farmed animal industry, in advance of all future disasters.

Over the past 10 years, there have been on average one natural disaster per day or 348 recorded events per year, globally.

*-Centre for Research on the
Emerging Diseases*

Time is the most precious commodity in disease response.

- Staff numbers must be sufficient to meet day-to-day operational activities as well as allowing for significant training activities in exercises and other outbreak management activities. Plan for and adequately staff for emergencies.
- Adequate resources (people, equipment, and finances) must be identified and be available for a quick and effective response to disease detection or an outbreak.
- A decision making system must be in place which enables effective and expedient decision for actions.
- Biosecurity management for disease control must be developed and adopted by the farmed animal industry at the farm level for all farmed animal species.
- Vaccination programs using marker vaccines (allowing differentiation of vaccinated from infected animals) when available, must be allowed when required to prevent disease transmission.
- Pre-determined zoning must be developed and available for rapid implementation to limit disease transmission, to protect valuable farmed animal resources, and to assure continued trade.
- When there is a suspicion of disease, “stop movement” orders are an essential tool for disease control. However, international negotiation with trading partners must establish in advance that trade disruption must not continue if the suspicion of disease is not confirmed.

Negotiate reciprocal agreements with international trading partners on the relationship between disease suspicion and trade embargos.

- Simplified, multifunctional, pen side diagnostic kits are essential for rapid disease response and immediate action. The diagnosis will be confirmed or rejected by comprehensive testing in a reference laboratory with final, official declaration to follow.
- The integrated management of data and information is also an essential element for disease prevention and control.
- Ongoing communication is imperative to maintain effective disease control management (for example, by a National Incident Management System) and public acceptance of the response action (for example, by Message Maps). This communication must be believable, honest, and effective.
- Accredited inter-disciplinary emergency management training for serious animal and public health emergencies should be created. Simulation exercises with independent auditors will provide unbiased evaluation for improvement. Training is essential to preparation.

- A performance measurement system should evaluate the accuracy of risk identification, the appropriateness of training programs, and the effectiveness of response activities.
- Agricultural crises create psychosocial impacts on producers, their families and agricultural communities both during and after an event. These impacts must be addressed through crisis counselling, medical/mental health treatment or other interventions.
- In all preparation activities, plan for unanticipated events and an unpredictable future.

Adaptability is the key to survival.

Measurable Outcomes (2015):

- An agri-intelligence function is operating and producing ongoing information for decisions.
- An integrated surveillance system with ongoing management and analysis of the data is operative nationally with information available to all farmed animal health stakeholders.
- A biosecurity system is in place for the major farmed animal species.
- An animal identification and traceability system for farmed animals and their products has been established for at least four major farmed animal species.
- International agreements with major trading partners, on the relationship between disease suspicion and trade access, have been negotiated and are in effect.
- An agreement is in effect for the management and funding of all significant diseases of farmed animals. The agreement has been developed and signed by the farmed animal sector, the federal government, and the provincial/territorial governments.

Recommendations for Action (2009-2015):

- Develop, negotiate, and conclude an agreement amongst the farmed animal sector, the federal government, and the provincial/territorial governments for the shared responsibility, management, and funding of all significant diseases of the farmed animal sector.
- Raise the animal identification and traceability systems to an agreed standard for at least four major farmed animal species.
- Establish biosecurity systems cooperatively between the farmed animal industry and governments for the major farmed animal species.

Metaphorically, we must view the world of health through a global “kaleidoscope” in which the chambers constantly change to produce new images or conditions that often reveal radically new reflections of global health.

- Lonnie King 2008

LABORATORY DIAGNOSTIC NETWORK COMPONENT

“In the future NFAHWS, the laboratory diagnostic network will be an integrated partnership of federal, university, provincial, and private laboratories providing coordinated diagnostic and surveillance testing to an ISO 17025 standard. The network will provide services for foreign animal disease, serious farmed animal disease, and zoonotic disease surveillance as part of an early warning system in farmed livestock and wildlife. In addition the network will provide domestic export testing. ”

Principles:

- Funding and governance of the laboratory diagnostic network must be shared amongst the federal government, provincial/territorial governments, and the farmed animal industry according to a predetermined plan.
- Quality assurance should be established to an ISO 17025 standard in all participating laboratories.
- Testing performance must be verified, and all reagents and methodologies must be standardized.
- Although the use of pen-side diagnostic tests must be pursued, all reactions must be confirmed or refuted in reference laboratories to eliminate false positives and false negatives.
- Network laboratories should employ multiplex diagnostics to test for endemic and foreign animal diseases with similar signs. Microbiological isolation and other diagnostic capabilities must be available to detect unknown diseases.
- Designated reference laboratories must confirm all foreign, reportable, and notifiable diseases, as well as provide standardized reagents and quality assurance, training and advice.
- Ongoing funding that is adequate to provide a national, standardized, diagnostic testing capability must be established.
- Laboratories must be resourced and maintained to meet international standards of biocontainment to their appropriate predetermined level.
- All farmed animal health stakeholders must have access to surveillance and testing data, in one common format, for use in analysis and decision-making.
- National and international animal health laboratory networks must harmonize standards and collaborate in order to increase confidence and trust, and to facilitate rapid movement of live animals and their products.

Measurable Outcomes (2015):

- An integrated national laboratory diagnostic network is in place with defined capabilities and funding to ensure ongoing sustainability.
- Information from surveillance testing is available to all farmed animal stakeholders in one common format.
- Early detection of disease, allowing rapid and effective response, has been demonstrated.
- All laboratories in the network are maintained to their designated levels of biocontainment.

Recommendations for Action (2009-2015):

- Build on the Canadian Animal Health Surveillance Network (CAHSN) initiative by establishing the required funding for its completion and ongoing operation, according to a collaborative shared plan.
- Evaluate and document the capability and capacity of all laboratories participating in the network, including their ongoing maintenance of biocontainment level, and compare this to the requirements of a major disease outbreak.
- Verify the capability of the network to provide the range and volume of diagnostic testing for export markets, in a timely fashion.

IDENTIFICATION AND TRACEABILITY COMPONENT

“An essential component of the future NFAHWS is a credible, integrated, national traceability system which can identify all farmed animals individually or in flocks, can identify all premises where farmed animals are kept, and can reliably track animal movement, to enhance emergency management, market access, and public confidence.”

Principles:

- Individual identification is the principle tool for achieving traceability.
- Early disease detection and response will maximize the effectiveness of the emergency response and minimize the social, economic, and environmental costs associated with the outbreak.
- Rapid tracing of potentially infected animals, herds, or contaminated products is an essential step in the rapid control of a disease outbreak.
- Complete traceability involves tracing back and tracing forward.
- The traceability system should be built upon national standards to ensure credibility, integrity, and efficiency.
- Traceability must respect and protect the privacy of personal and proprietary information, but provide for the efficient collection of data and required sharing of information.
- Traceability will be a requirement of future trade.
- Traceability provides assurance to support public confidence during an emergency event.
- Domestic and international consumers are increasingly demanding full product traceability for all animal products.



Measurable Outcomes (2015):

- A verifiable identification system is operative for cattle, bison, sheep, swine, and poultry.
- Premises identification for all five farmed animal species is established.
- Agreements are established which balance access to and sharing of information while protecting personal and proprietary information.
- An integrated national traceability system is established and fully operational.

Recommendations for Action (2009-2015):

- Endorsement should be given to the National Agriculture and Food Traceability System as well as support for the implementation of the Strategic Management Plan as developed by the Federal-Provincial-Territorial Traceability Task Team.

ZONING AND BIOSECURITY COMPONENT

“Zoning and biosecurity, as essential elements in disease control, will be established in advance of disease outbreaks, and will serve to protect significant portions of the farmed animal population from the negative impacts of disease occurrence and the interruption of normal trade activity. “

Principles:

- Zoning and compartmentalization are procedures for separating subpopulations of animals of different health status, for the purposes of disease control and international trade.
- The OIE defines a zone as, “... a clearly defined part of a country containing an animal *subpopulation* with a distinct health status with respect to a specific *disease* for which required surveillance, control and biosecurity measures have been applied for the purpose of *international trade*. “ (OIE Terrestrial Animal Health Code, 2007)
- The OIE defines a compartment as, “... one or more *establishments* under a common biosecurity management system containing an animal *subpopulation* with a distinct health status with respect to a specific *disease* or specific *diseases* for which required surveillance, control and biosecurity measures have been applied for the purpose of *international trade*. “ (OIE Terrestrial Animal Health Code, 2007)
- Zoning is an essential element in disease management and will mitigate the impact of a disease outbreak by both protecting the trade options of geographic areas of the country, and preventing the transmission of disease.
- Compartmentalization allows the functional separation of domestic livestock and wildlife, of different health statuses, via a biosecurity management system.
- A model for the establishment of zones in advance of a disease outbreak is being successfully developed at West Hawk Lake in Manitoba.
- The size of the biosecurity management area can be variable, but it must be one common biosecurity management system.
- The development of biosecurity plans represents cooperation between the farmed animal industry sectors and governments.

Measurable Outcomes (2015):

- Multiple zones in different regions in Canada have been established with negotiated acceptance by international trading partners, based on the proven validity of the separation mechanism, in advance of disease outbreaks.

- Biosecurity systems have been implemented in all major farmed animal industry sectors.

Recommendations for Action (2009-2015):

- Complete the functional operation of the West Hawk Lake model for zoning with adequate funding and staffing
- Provide federal government leadership in the cooperative development of a national biosecurity system with adequate funding.
- Initiate the development of zones in other regions of the country, based on the knowledge and experience gained with the West Hawk Lake model.

POLICY FORMULATION COMPONENT

“Policy formulation within the future NFAHWS is based on scientific knowledge and risk analysis, and is achieved through essential collaboration amongst government departments and agencies and industry.”

Principles:

- Animal health improvement and disease prevention strategies are important to safe and efficient food production, the prevention of zoonoses, and environmental sustainability.
- Environmental scanning to anticipate risks and emerging diseases, identify new science and technology, and capture innovative approaches is essential to prevention, the most effective approach to disease control. The necessary tools and expertise must be available.
- Response to important disease occurrences and animal welfare issues must be rapid and effective.
- Prevention and emergency response planning must be collaborative involving federal, provincial, territorial governments along with industry, academia, and society representation.
- Communication of the risks to stakeholders is critical to obtaining understanding and support for action.
- Trade is protected and improved through improved animal health.

Measurable Outcomes (2015):

- Farmed animal health policies are developed through a collaborative process.
- An environmental scanning process is operational.
- Prevention and response plans are in place and are tested regularly.
- Communication with stakeholders takes place and is effective in obtaining understanding of key issues.
- Prevention is emphasized in farmed animal health policies.

Recommendations for Action (2009-2015):

- Develop a collaborative process for policy formulation.

- Establish an environmental scanning process to provide input into policy formulation.
- Establish a process for improved communication with stakeholders.

REGULATED BIOLOGICS AND PHARMACEUTICAL PRODUCTS COMPONENT

“The Canadian veterinary pharmaceutical regulatory programs provide producers and veterinarians with timely access to veterinary drugs and biologics which ensure the competitiveness of food animal producers and veterinary access to safer, more targeted medicine.”

Principles:

- Canadian veterinary pharmaceutical regulatory programs must be at the leading edge of science and be resourced adequately in order to meet the needs of agriculture, animal owners, food safety, animal welfare, and the economy.
- Canadian regulatory programs lag behind other developed countries, are considered unpredictable, and are competitive barriers to producers and the animal health industry in the global marketplace.
- Importation of non-approved products for “own-use” and active Pharmaceutical Ingredients (APIs) to assemble non-approved drugs, negatively impact the availability of licensed products.
- Performance based regulation that capitalizes on collaboration and cooperation with other countries (e.g. USA, EU, and Australia) would promote the competitiveness of the Canadian veterinary pharmaceutical industry, and encourage its continued investment in innovation in Canada.
- Reviewer technical capacity must be strengthened by practical experience and continuing education to ensure the review process is current.

Measurable Outcomes (2015):

- Backlogs in the review process of the Veterinary Drugs Directorate (VDD) of Health Canada, and of the Veterinary Biologics Section (VBS) of the Canadian Food Inspection Agency, have been eliminated.
- The Canadian Animal Health Product Regulatory Advisory Committee which has been established is operating effectively.
- Review processes collaborate and coordinate with the regulatory processes of other major developed countries.

Recommendations for Action (2009-2015):

- Eliminate submission backlogs in VDD and VBS.
- Develop a separate review stream for generics
- Develop and implement a process for the phased review of submission components.
- Industry and regulators should jointly develop and facilitate a continuing education program for reviewers.

EDUCATION AND TRAINING COMPONENT

“Globalization, as well as many other forces, is driving education and training to meet the needs of public practice. Public practice recognizes and addresses the interconnectedness of animal health, public health and ecosystem health. Education provides the farmed animal health system with sufficient veterinarians, paraprofessionals, and baccalaureates who are cognizant of and responsive to this interconnectedness. Continuing education and training also provides access to new skills to address and maintain required levels of competence in emerging disciplines.”

Principles:

- An essential strategic goal is to maintain a network of viable rural veterinary practices with the collective skills to meet the needs of the farmed animal industries for cost-effective animal health services which engage the important linkages to public, and ecosystem health services.
- Specifically trained animal health policy analysts will need mechanisms for assessing societal needs with respect to public veterinary services.
- Public practice services could be contracted to private practices. This would provide the economic incentive to maintain a network of financially and functionally viable rural practices.
- Animal health education must respond to these changing policies by altering curricula to provide a broad-skilled team to meet the needs of a rural community veterinary practice. This team includes:
 - technical assistants
 - animal health technologists
 - veterinarians with a designated licensure in food animal practice or with specialist qualifications;
 - baccalaureates in animal science, food science, or animal health;
 - scientists – veterinary, medical, biological.
- Canada has the essential infrastructure to educate animal health professionals but must expand its capacity and the range of its expertise in some areas.
- The farmed animal industry must have access to private veterinary practices that provide a range of public and private practice services essential in achieving the NFAHWS vision.
- The foundation for veterinary medicine and veterinary education is comparative medicine.
- Veterinary curricula must prepare students for dealing with the impacts which globalization will exert on veterinary medicine, animal health, production and management.

- Veterinary curricula must provide students with the opportunity to focus on one of a variety of public or conventional clinical fields of veterinary medicine that are important to society.
- Globalization has made the study and application of animal health policy, of crucial importance, warranting the establishment of academic programs to foster education and research in the animal health policy.

Measurable Outcomes (2015):

- Veterinary academia and professional associations have committed to adopting policies which allow students to focus on training in public or farmed animal fields of practice. This is demonstrated by suitably modified curricula with subsequent licensing of graduates.
- The concept of rural community veterinary practice for public and private veterinary services is implemented with the provision of public veterinary services being contracted to private practices as “public goods” by government.
- The use of animal health technologists and animal health baccalaureates is expanded in private practices, government agencies, and industry for the enhanced delivery of farmed animal health services.
- The subject area of animal health policy is established as an academic program.
- Canada has established an annual scientific meeting of scientists and experts working in animal, public, and ecosystem health. The purpose is to share results of research and disease investigations in a timely fashion, cultivate links amongst scientists working in related fields, and facilitate consultation between farmed animal policy makers and research and education agencies.

Recommendations for Action (2009-2015):

- Canadian Veterinary Medical Association with academia should take the lead in monitoring and planning the development of human resource needs.
- Enrolment in veterinary colleges and in animal health technologist programs should be expanded.
- The subject area of “animal health policy” should be supported for development as an academic program.
- Leadership in the Canadian Food Inspection Agency and the Public Health Agency of Canada should jointly assume responsibility for establishing an annual scientific meeting to be held at the Canadian Science Centre for Human and Animal Health in Winnipeg, Manitoba.

DATA MANAGEMENT COMPONENT

“Data management within the future NFAHWS will securely share and aggregate basic data while restricting detailed data to authorized users only. It will yield a credible source of trusted information essential for the competitiveness of the farmed animal industry, as well as allowing analysis and early detection of adverse events. In addition, a quality assured epidemiological data collection and recording system improves the effectiveness and timeliness of disease control and outbreak management.”

Principles:

- The effective use of data for multiple purposes (e.g. disease identification, productivity, trade enhancement, trends) will be essential for the viability of the farmed animal health system in Canada.
- Specific data requirements for these purposes must be determined by the needs of stakeholders, organizations, and their mandate within animal health.
- Data can be collected via distributed architecture systems which involve each organization collecting and storing data behind its own firewall. Each data owning organization would make an agreed upon subset of the data available to the data management network for national farmed animal access and use.
- The sources of data must be identified and gaps in the data collection must be identified and published.
- Data definitions and standards will need to be agreed upon and managed to support analysis or combined data.
- The data must be stored digitally and the sources must be linked electronically to facilitate quick response in emergency situations.
- It must be determined how to aggregate the data, and where it could be replicated and stored, and under what conditions would permission be granted to access the data.
- Real-time disease investigations and retrospective studies require high quality, accurate, and precise data collected in a timely manner.
- Defined epidemiological requirements for disease outbreak control can be consistently available for analysis through a quality assured data collection and record keeping system.

Measurable Outcomes (2015):

- A group or body is designated to govern the collection, management, and use of data.

- A pilot project of defined scope has been conducted to test the feasibility and benefits of an aggregated data management system.
- A quality assured data collection and record keeping system is in place to provide accurate, consistent, and timely epidemiological data for analysis.

Recommendations for Action (2009-2015):

- Engage a knowledgeable and experienced private company to plan and execute an unbiased pilot project to test the feasibility and benefits of an aggregated data management system.
- Implement a standardized epidemiological data collection system to support and expedite disease outbreak management.
- Identify the body to govern the data management system.

COMMUNICATION, OUTREACH, AND AWARENESS COMPONENT

“Communication messages will reassure farmed animal producers and the Canadian public that Canada now has a National Farmed Animal Health and Welfare Strategy, built on collaboration amongst the farmed animal industry, the governments of Canada and other significant stakeholders. This strategy will strive to achieve improved welfare of farmed animals, success and continuity of the farming community, environmental sustainability, a coherent link with the public health sector, and a safe supply of high quality food and services to Canadians.”

Principles:

- Individual farmed animal sectors already have communication strategies in place.
- Communication relative to the NFAHWS should emphasize the cooperation that has been achieved, i.e. working together.
- Key messages about the NFAHWS must be developed.
- Key messages concerning the NFAHWS should be fresh and new. Conflicts with existing messages must be avoided.
- Communications are fundamental to the success of the NFAHWS. Messages must be clear, consistent and timely and must reach different target audiences. A periodic meeting of people working in the area of farmed animal communications should be facilitated to consider means of disseminating key messages through existing communication activities.
- With a Canadian public which is almost totally removed from the farmed animal sector, it is essential that the NFAHWS be positioned as sensitive to the values and needs of Canadians in general.

Measurable Outcomes (2015):

- Communication messages on the NFAHWS have been broadly disseminated in Canada.
- Meetings of people working in farmed animal communications have been held to coordinate messages.
- Surveys have indicated an increase in the Canadian public’s appreciation and support for the farmed animal sector.

Recommendations for Action (2009–2015):

- Engage communication specialists to develop key messages for public communication of Canada’s NFAHWS.

- Arrange and facilitate a meeting of people working in farmed animal communications to develop innovative options for aligned communications strategies.
- Conduct public opinion surveys to gauge the public's support for the farmed animal sector.

FINANCIAL RISK MANAGEMENT COMPONENT

“Financial risk management in the future NFAHWS, will provide the necessary investment in the animal health system to reduce and minimize the financial risk to the farmed animal industry and to the public. This will expedite recovery in the event of a major or a series of significant farmed animal health incidents. ”

Principles:

- The key to limiting financial repercussions to both the farmed animal industry and to governments is prevention. Investment here is crucial.
- Financial risk management must be distinguished from the Business Risk Management element of the Growing Forward suite of programs.
- Current methods to address financial loss due to a disease outbreak are inadequate. These methods include:
 - compensation through the Health of Animals Act (CFIA)
 - Business Risk Management suite of programs (AAFC)
 - industry insurance programs.
- Financial loss can be produced by a range of diseases such as:
 - foreign animal diseases
 - production limiting diseases
 - new or emerging diseases
- Globalization has an impact on the way in which financial losses are accrued. Losses may be direct and due to disease in Canada; or they may be indirect and due to disease outbreaks in other parts of the world.
- Financial losses may not be restricted to the farmed animal sector.
- The financial loss associated with disease can be profound. For example:
 - foot and mouth disease – a 2002 study estimated \$13.7-\$44.8 billion
 - bovine spongiform encephalopathy – from 2002-05 the cost was estimated at \$4.22 billion
 - avian influenza – the cost in 2004 was estimated at \$380.8 million
 - porcine circovirus associated diseases – in 2005 and 2006 the cost was estimated at \$57-\$122 million per year

- Financial risk management must address both the financial losses incurred as a result of a major farmed animal disease outbreak, as well as the losses resulting from closed export markets or the collapse of the Canadian market.
- Investment by both the farmed animal industry and the public to reduce or minimize the risk in advance of a major farmed animal health disaster, must be seen as the first line of defence against such a major disease incursion and the subsequent financial burden to the industry and the public treasuries.

Measurable Outcomes (2015):

- Investments to promote avoidance or prevention of significant farmed animal diseases have been substantially increased.
- The appropriate level of investment for financial risk management has been defined by the federal/provincial/territorial governments and the farmed animal industry.

Recommendations for Action (2009-2015):

- Define and allocate responsibility for the appropriate level of investment in financial risk management.

PERFORMANCE MEASUREMENT COMPONENT

“A performance measurement system for the NFAHWS must have pre-approved, result-based standards for each of the eight strategic objectives.

Principles:

- Performance measurement must be linked to a result-based outcome, for example, harmonization of standards throughout all provinces and major trading partners (especially the USA as a priority) to allow full movement of farmed animals and animal products which have an equal level of risk.
- Performance measurement data must be available to all farmed animal health stakeholders to support effective decision making and to provide the imperative for continuous improvement.
- The performance measurement system must be open to external audit.
- Performance measurement must allow for rapid re-evaluation of and changes to standards in order to respond to evolving scientific information and social values. An agreed upon level of uncertainty is essential.

Measurable Outcomes (2015):

- The NFAHWS is under a governance structure which uses performance measurement to evaluate the progress of the NFAHWS against planned achievements.
- Public acceptance and international recognition are key success indicators. International recognition of standards may be measured by an outcome-based indicator such as increased trade access.
- Anticipation, prevention, and preparedness are measured in the performance measurement system by evaluating and assessing disease monitoring activities, industry preparedness, communication strategies, international intelligence monitoring, and the sharing of information within the partnership.
- Simulation exercises are routinely implemented to provide internal assessments of the system's capacity and readiness, and to demonstrate the system's credibility to trading partners. A team of auditors, not responsible for implementing disease control, is employed during simulations and outbreak situations to review and report on each activity.

Recommendations for Action (2009-2015):

- Engage a private professional organization to design a performance measurement system for the NFAHWS, which develops performance measures for each of the strategic outcomes and their component areas with three and five year targets.
- A full review of the status of the current disease control and response plans in industry and governments must be available as a baseline.
- Conduct baseline surveys to measure the views of the public and stakeholders on the current system, and then conduct ongoing surveys to measure the change in program acceptance by both the public and stakeholders.

THE RECOVERY ASPECT OF THE DISEASE MANAGEMENT COMPONENT

“The Recovery element of future disease management programs will be a shared responsibility amongst the federal/provincial/territorial governments and the farmed animal industry. The term ‘recovery’ for a producer or an industry means a return to a business-as-usual basis in a timely manner.”

Principles:

- Prevention is the starting point to reduce the need for response and recovery.
- Recovery, as well as the other aspects of farmed animal disease management, is a shared responsibility between governments and the farmed animal industry, based on an agreement which recognizes both public and private good involvement.
- Indemnification programs must be clarified to recognize the differences between various livestock sectors in terms of operational and recovery needs, particularly in such issues as the ability to restock and resume normal operations.
- The costs incurred with cleaning and disinfection after depopulation must also be taken into consideration in the recovery program.
- A disease outbreak involves not only producers, but also the associated trades, services and industries that depend on agriculture both directly and indirectly.
- Recovery also involves the costs associated with support programs such as counselling for physical and mental health, legal assistance, and financial counselling.
- The goal of recovery is to restore normal operation to the affected sectors.

Measurable Outcomes (2015):

- A common understanding has been achieved by the farmed animal industry and the federal/provincial/territorial governments of the ultimate objective for recovery.
- An agreement is in place amongst the federal/provincial/territorial governments and the farmed animal industry, defining the appropriate sharing of responsibility and costs for recovery after depopulation resulting from disease surveillance or disease occurrence.
- Indemnification programs have been designed and developed which comprehensively address recovery needs and costs, and the separate requirements of specific farmed animal sectors.

- The indemnification programs have been implemented and have resulted in a smooth return to operation.
- Market access has been re-established, following a disease outbreak, in a shorter period of time than previously.

Recommendations for Action (2009-2015):

- Develop a common understanding of the true costs of a disease outbreak.
- Develop an agreement amongst governments and the farmed animal industry, based on a determination of public and private good, as to an accepted sharing of responsibility and costs for recovery.
- Evaluate all insurance possibilities to supplement industry responsibilities.
- Develop a strategy that considers a new disease becoming endemic.

GUIDING REFERENCE 4 - IMPROVE CAPACITY TO PROTECT ECOSYSTEM HEALTH

“The farmed livestock industry has implemented verifiable voluntary programs to move to an environmentally sustainable system for raising farmed animals.”

Principles:

- There are recognized linkages between ecosystem health, public health and animal health. This means that consideration must be given to the impacts of livestock industry activities with respect to ecosystem health.
- Many resources upon which animal industries are reliant, are currently either under serious threat, or they are associated with significant environmental challenges. Examples include the following:
 - Adequate water supply is a looming threat to the farmed animal industry, most notably on the prairies where it is forecast to be a crisis on the horizon as cyclic drought combines with rapidly increasing human activities and climate change.
 - Fresh water quality is threatened by manure contamination with its associated bacteria, and fertilizer over usage leading to eutrophication.
 - The farmed animal sector throughout the full value chain, must adapt to sharply increased and likely on-going energy costs due to global oil and gas economics, and the regulation of carbon emissions.
 - The increase in world population and the concomitant increase in meat consumption require an increase in the number of livestock. This will mean an increase in the volume of nitrogen-rich manure. The resulting disruption of the global nitrogen cycle could prove to be as serious a threat as climate change.

Livestock production in Canada must address and mitigate the impacts of these issues through proactive, innovative approaches. They must do this to remain sustainable and to continue as a world leader in animal health and production.

- Voluntary self-management measures to address the impacts on the environment of raising farmed animals would be the optimal approach and could be assisted by Environmental Performance Agreements with measurable targets and third party audits. This avoids the need for regulations.

Measurable Outcomes (2015):

- The environmental footprint due to animal industry is calculated and performance is measured at the national, regional, and farm levels for,
 - manure management
 - water consumption
 - energy consumption

These measures are transparent and verifiable.

Recommendations for Action (2009-2015):

- Phase in an environmental certification process starting with volunteer leaders, moving to large operations, and eventually to all farms.

This should involve establishing initial but modest base standards for selected parameters e.g. green-house gas emissions, water consumption, nutrient releases.

- This could be followed by incremental advances toward world leading standards on all significant issues.

GUIDING REFERENCE 5 - MARKET ACCESS

“In the future NFAHWS, market access will be emphasized through a dedicated group responsible for this function. The group will be adequately staffed and resourced to perform this function. Market access will be sustained and increased by enhancing the national farmed animal health status and by recognizing the importance of the relationship between animal health and food safety for the consumer. ”

Principles:

- Canada is a trading nation.
- The importance of animal health must be recognized and acknowledged in its own right.
- The farmed animal industry must be engaged in the review, development, and implementation of the OIE disease codes.
- Canada’s animal health status is a primary element in trade negotiation, as is the credibility of the farmed animal health system.
- All major stakeholders must collaborate to develop plans for market access. Implementation must be adequately resourced.
- Performance measurements within the farmed animal health system must be available to trade negotiators.
- Risk analysis is a key support element for market access.
- “Trade” diseases such as enzootic bovine leucosis, Johne’s disease, and zoonotic food safety disease, should be included when considering lists of significant farmed animal diseases in relation to market access.
- Animal health status must be seen as a dynamic contributor to economic well-being rather than the product of an inevitable series of regulations and compliances. A high animal health status is something to strive for and achieve rather than a submission to a regime.

Measurable Outcomes (2015):

- A dedicated farmed animal health group for trade and market access has been established.
- Resourcing (qualified staff, funding, and support tools) has been allocated to enable trade negotiation.

- A collaboration between governments and the farmed animal industry has focused and re-energized the Canadian farmed animal health system.

Recommendations for Action (2009-2015):

- Structure the farmed animal health program to a state of prominence and recognition.
- In a collaborative manner between federal/provincial/territorial governments and the farmed animal industry determine the priorities for market access and allocate the funding necessary for effective trade negotiation.

GUIDING REFERENCE 6 - IMPROVE CAPACITY TO PROTECT PUBLIC HEALTH

“The farmed animal sector forms an integral part of the public health decision making infrastructure in Canada. The achievement of a seamless, integrated ‘one health’ governance system proactively deals with threats to the public and to the farmed animal sector in a mutually beneficial manner.”

Principles:

- Regulators and Canadians in general, must understand the critical role that the farmed animal health system plays in the health determinants and outcomes for human health, environmental health, and animal health collectively.
- The farmed animal sector must be recognized as an essential element in the public health infrastructure in Canada.
- One of the most significant threats to the farmed animal sector will be as a result of the public health and environmental health issues which are, in fact, or are perceived to be, linked to the farmed animal sector.
- As a full partner in the ‘one-health’ approach, the farmed animal sector must provide the relevant intelligence arising from agri-intelligence, surveillance, risk analysis and foresight to the integrated public health decision-making structures in Canada. This will establish the farmed animal sector as a full partner in the ‘one-health’ context.
- The OIE, WHO, and FAO have adopted the “one health” concept.

Measurable Outcomes (2015):

- The “one-health” concept is making significant inroads at the national and provincial levels.
- Integrated governance links are developed and operational for planning, programs, and surveillance between public health and farmed animal health.
- The full range of public health impacts (including psychosocial factors and mental health) are included in regulatory decision making and risk frameworks in order to arrive at balanced outcomes for the farmed animal sector and society in general.
- The relationship of the farmed animal sector to the “determinants and outcomes for health” of Canadians has been promoted leading to a fuller understanding of the implications.

Recommendations for Action (2009-2015):

- One health
 - Develop a five year strategic plan to operationalize the “one-health” concept at the national and provincial levels.
 - Integrate the “one-health” concept into university training programs for DVM, MD, paraprofessionals, agricultural and environmental specialists, and other public health professionals in Canada.
- Integrated governance
 - Partner animal health and human health expertise in public health at many levels. For example, have the Chief Veterinary Officer included as a member of the Public Health Network Council.
 - Develop a linked surveillance and risk assessment system for zoonotic disease in Canada.
- Public Health impacts
 - Evaluate and implement more inclusive risk analysis frameworks.
 - Establish joint risk assessment groups that incorporate a broader range of disciplines (e.g. ecology of infectious disease).
- Determinants of health
 - Effectively communicate the reality that the farmed animal sector is an extremely important contributor to society and that it promotes public health and environmental health and sustainability.

GUIDING REFERENCE 7 - IMPROVE FARMED ANIMAL CARE AND WELFARE

“All farmed animal stakeholders share in the responsibility of maintaining, enhancing, and ensuring farmed animal care and welfare practices that have a basis in science and reflect societal ethics.”

Principles:

- While it is always important to strive for continuous improvement, it should be appreciated that the recognition, maintenance, and assurance of existing farmed animal care and welfare practices is appropriate.
- Farmed animal care and welfare must be a seamless system which
 - identifies specific roles and responsibilities
 - addresses current gaps,
 - identifies future needs in farmed animal care and welfare,
 - uses benchmarks to measure improvements and to ensure an effective system is in place.
- The farmed animal care and welfare system is cost effective in that it provides measurable benefits to farmed animals (i.e. acceptable welfare) and also to farmed animal industries (i.e. productivity and profitability, and access to markets).
- Canada is recognized as a leader in farmed animal care and welfare both by the Canadian public and internationally.

Measurable Outcomes (2015):

- All Codes of Practice for the care and handling of farmed animals are updated and some new Codes are developed.
- Codes of Practice serve as the foundation for Canada’s farmed animal care and welfare infrastructure in that assessment programs are based on the Codes, and provincial and federal regulations reference the Codes as guidelines or requirements and industry best practices.
- The federal and provincial governments have a stipulated and clear delineation of responsibilities between them relative to farmed animal care and welfare.
- The National Farm Animal Care Council (NFACC) is recognized as the national reference body for farmed animal care and welfare.

- An animal care assessment model is implemented.
- A forum for ongoing discussion, collaboration, and process building amongst stakeholders is in place.
- The roles and responsibilities of all stakeholders in farmed animal care and welfare are identified.
- Regulations on farmed animal welfare are developed and enforced in a consistent manner with outcomes based measures, ensuring that Canadian standards for farmed animal welfare are upheld.
- Benchmarking is used as a preferred tool for measuring where we are, based on where we've been.
- An identifiable process is in place to identify animal welfare research priorities and to ensure that funding is linked to this process.

Recommendations for Action (2009-2015):

- The NFACC Code of Practice Process needs to be finalized and approved with a funding strategy for the ongoing development of Codes.
- NFACC should develop a long term strategy for its own sustainability.
- Canada's federal and provincial governments should have formal discussions to develop a strategy for farmed animal welfare, including communications, roles, and responsibilities between jurisdictions.
- A forum to deliberate and determine the role of each stakeholder in farmed animal care and welfare should be initiated.

SECTION 3:

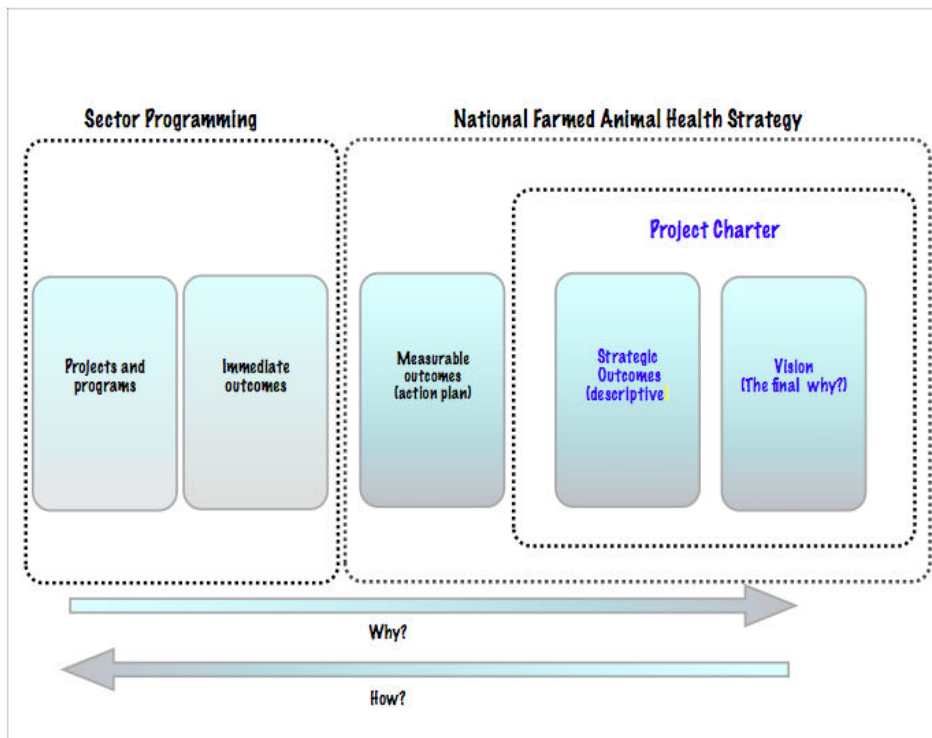
APPENDICES



APPENDIX 1 – THE PROCESS FOR DEVELOPING THE NFAHWS

The Strategy was developed by a Joint Working Group consisting of participants from the Council of Chief Veterinary Officers (CCVOs), the Canadian Food Inspection Agency (CFIA), the farmed animal industry, and the Canadian Animal Health Coalition (CAHC).

A facilitated Values Management process was used to conduct the study. The process is illustrated below.



APPENDIX 2 – DEVELOPMENT OF THE COMPONENTS BY EXPERT CONTRIBUTORS

The components or subject areas which are included in the NFAHWS were developed by expert contributors. There were a total of 34 expert contributors who explored and defined the components five to ten years in the future. The thinking for each component was summarized in a consistent template. The template described the component from four perspectives,

- Projected definition of the component in 2015
- Principles of the future component
- Measurable Outcomes by 2015
- Suggestions for Action to achieve these outcomes (2009-2015)

There were a total of 95 Measurable Outcomes and 75 Suggestions for Action offered. Priority Measurable Outcomes for Governance and Infrastructure, the two critical elements are presented in *Section 1*.