Alberta

Freedom To Create. Spirit To Achieve.

"Framing the Issues"
A Canadian Perspective

Zoonoses Symposium

Washington, D.C. Sept 23-24, 2010

John Berezowski

Alberta Agriculture and Rural Development

Government of Alberta

Alberta

- 49th to 60th Parallel
- 255,287 sq miles
- 3.3 million people
- Capitol: Edmonton

Outline

- Exposure-Pathogens
- Complexity
- Drivers
- Jurisdiction
- Challenges
- Alberta examples

Exposure-Pathogen-Disease

- **Foodborne**
  - Salmonella, Shigella, Campy, E.coli, Clostridias, Listeria, Toxo, Yersinia, Trichinella
- **Environment**
  - Salmonella, Shigella, Campy, Giardia, Anthrax, lepto, toxoplasma
- **Other**
  - Influenzas, Anthrax, Brucella, Echinococcus, Q fever, Rabies, Ascaris, Psittacosis, Histoplasmosa, TB, MSRA

We've Had Our Outbreak's

- **Foodborne**
  - Listeria in rte meats 2008
- **Environment**
  - Walkerton E coli O157:H7 2000
- **Other**
  - Pandemic H1N1 2009

Burden of Disease

- **Foodborne**
  - Est: 11 million cases in Canada per year http://www.inspection.gc.ca/english/fssa/concen/cause/perfrine.shtml
  - BSE
- **Environment**
  - Maybe large but : → **?**
- **Other**
  - Small: → **?**

Burden of Disease

- **Foodborne**
  - Est: 11 http://w ause/ perfrine
- **Environm**
  - Maybe large but : → **?**
- **Other**
  - Small: → **?**

Source Attribution is Critical

Decision making

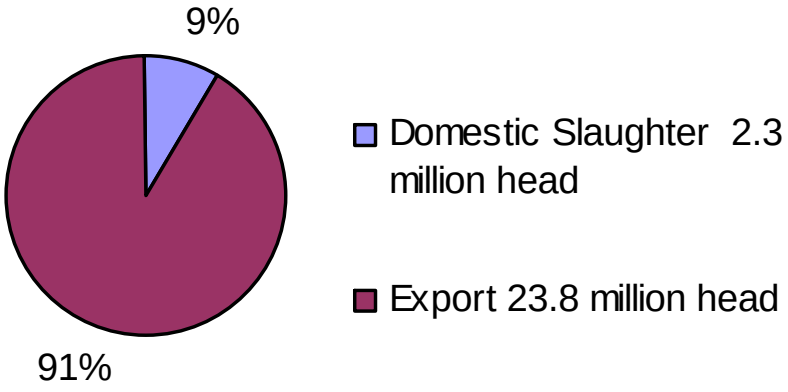
Prioritizing resources

Livestock Production

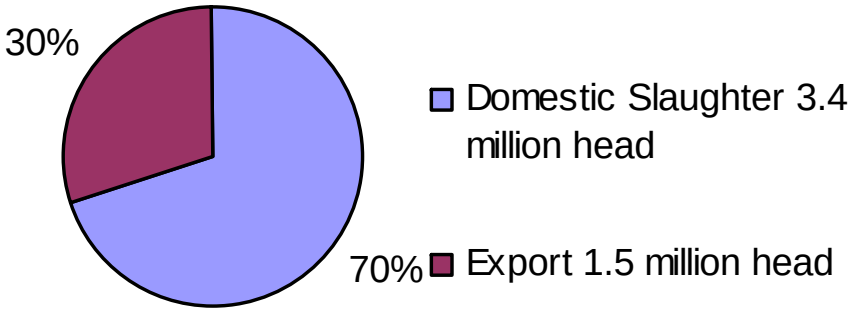
Domestic slaughter
Versus
Export
2008 data

From the Canadian meat council: http://www.cmc-cvc.com/english/industry_statistic_e.asp#Anchor15

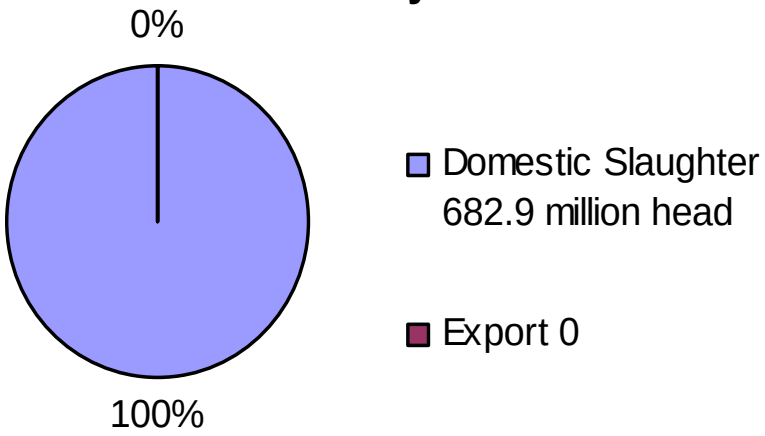
Pigs



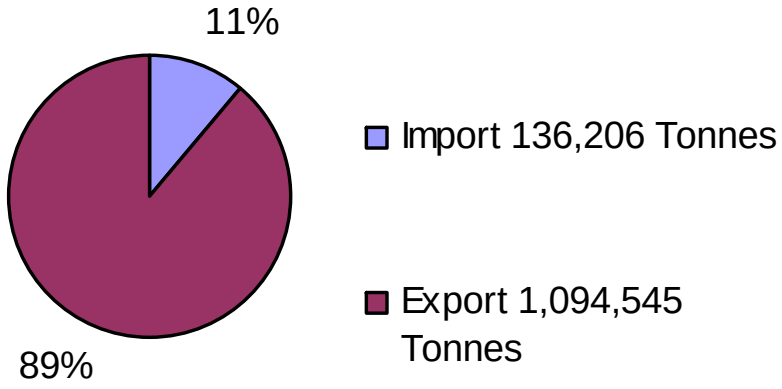
Cattle



Poultry



Pork

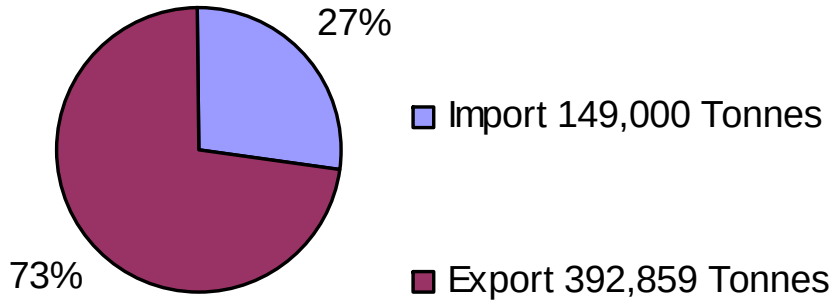


Meat Production

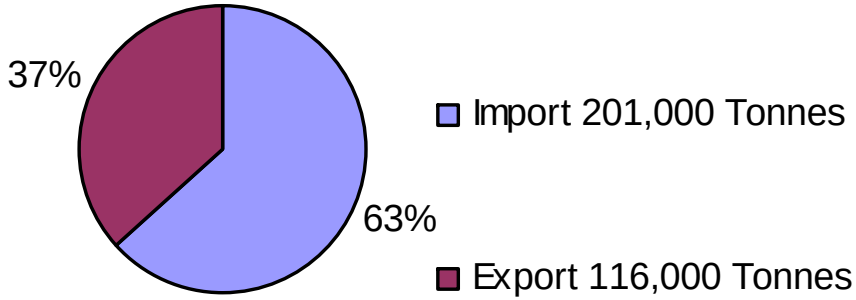
Import
Versus
Export
2008 data

From the Canadian meat council: http://www.cmc-cvc.com/english/industry_statistic_e.asp#Anchor15

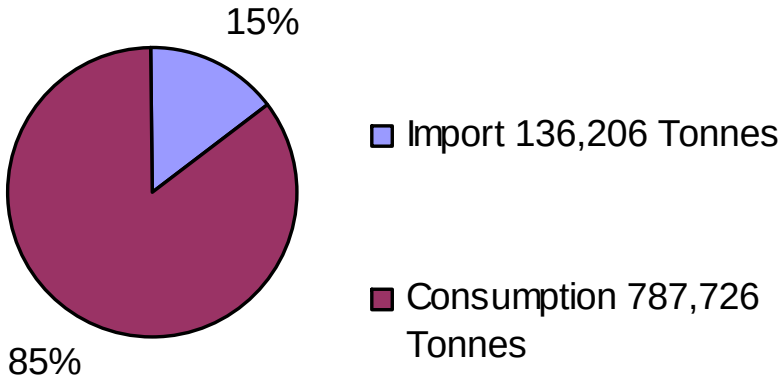
Beef



Poultry



Pork

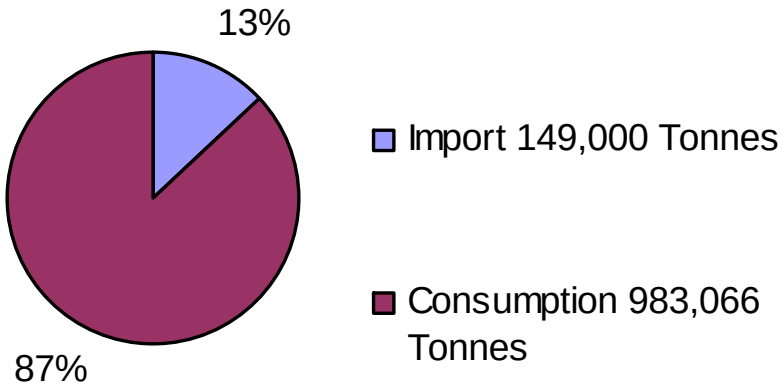


Meat Consumption

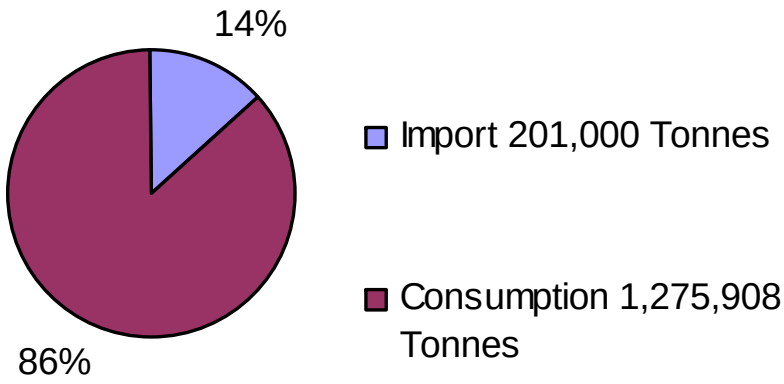
Import
Versus
Consumption
2008 data

From the Canadian meat council: http://www.cmc-cvc.com/english/industry_statistic_e.asp#Anchor15

Beef

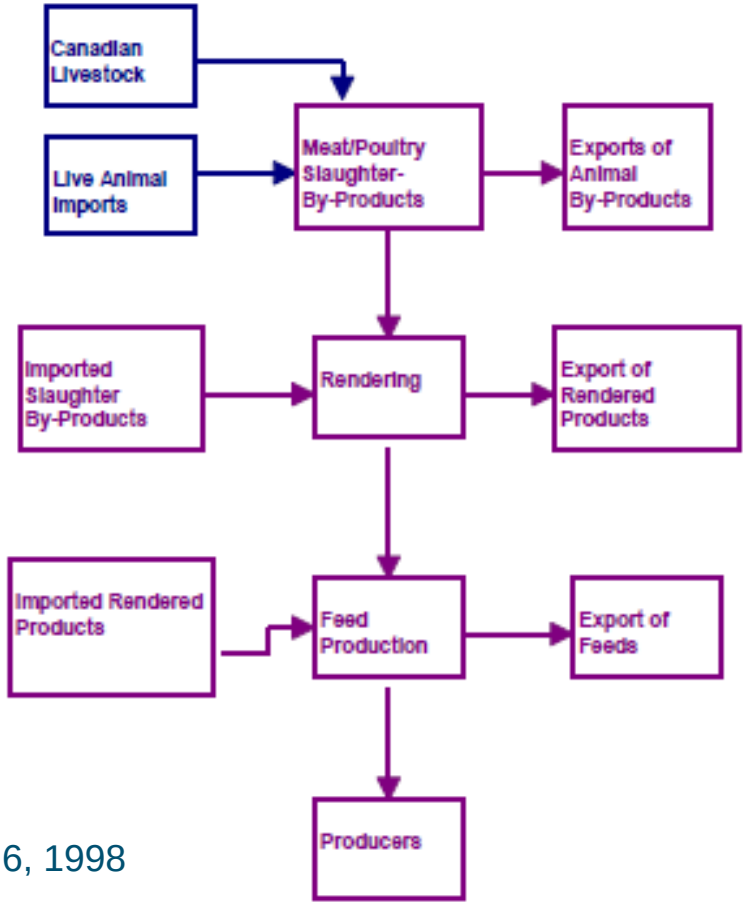


Poultry



Food Production is Very Complex

- Some industries are export dependant
- Some are focused on domestic markets
- Imports are not trivial
- Supply chains are very complex

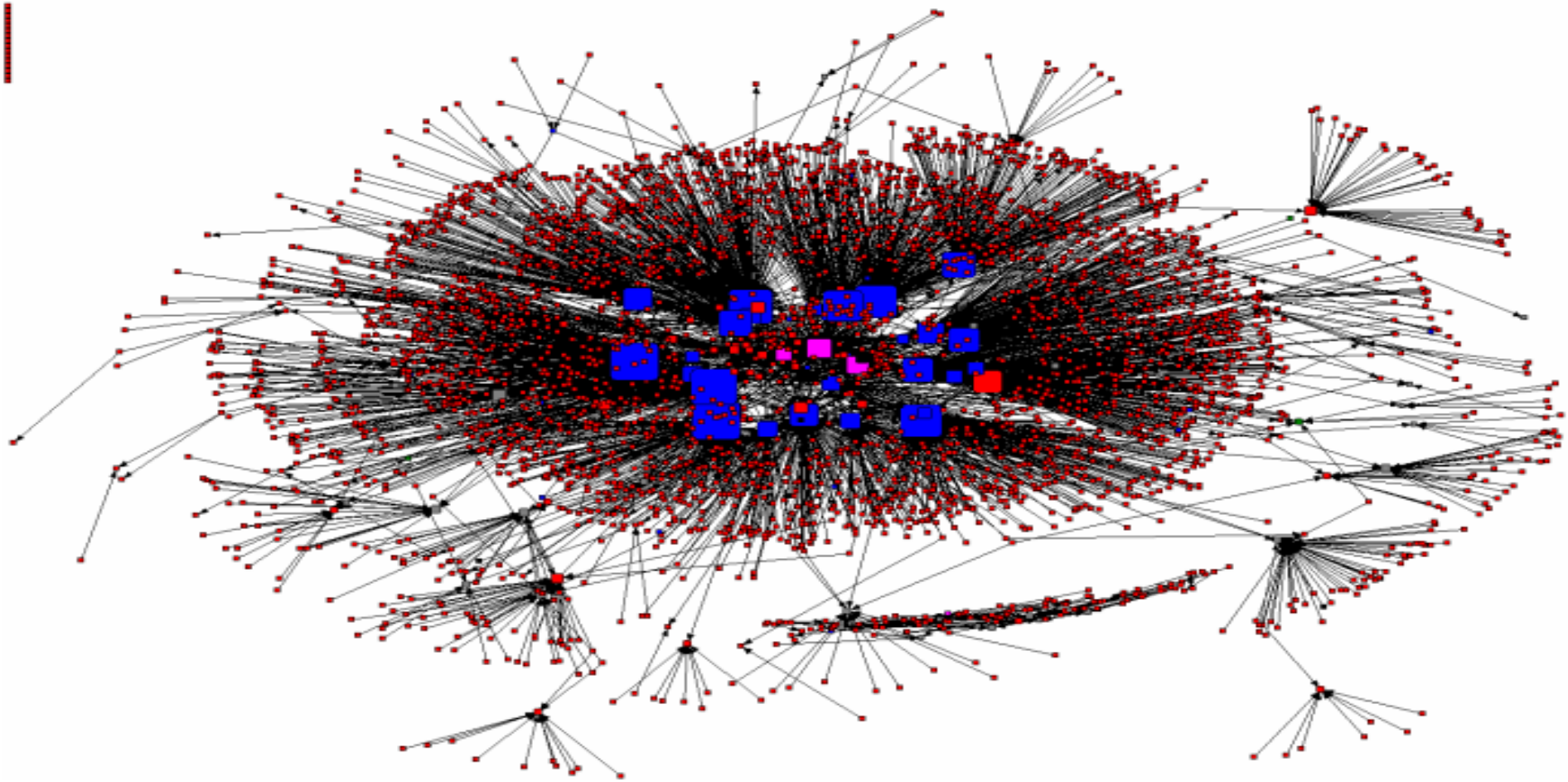


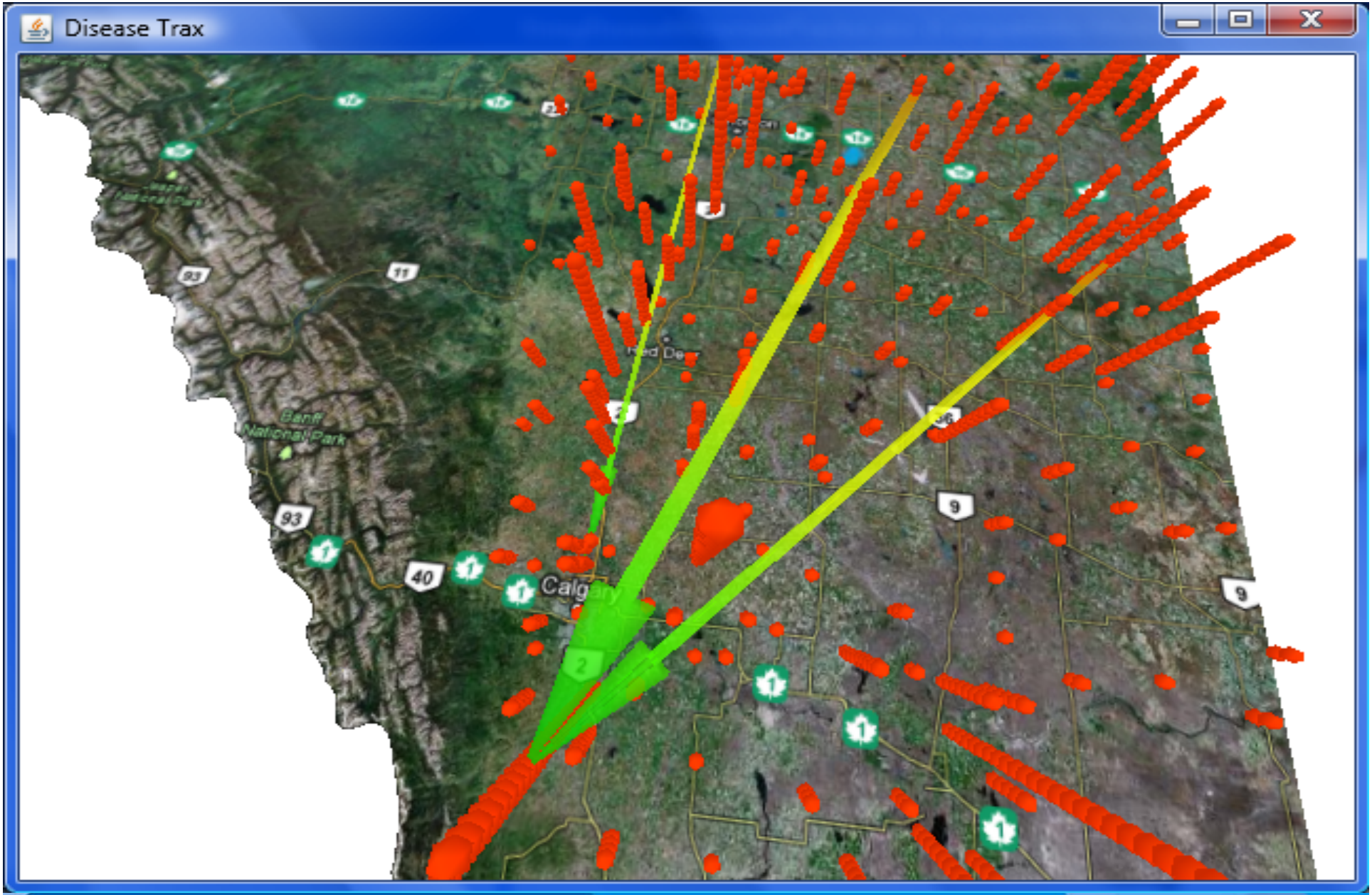
Passive Animal Disease Surveillance in Canada
A Benchmark, Proceedings of a CAHNet Workshop held December 6, 1998
Ottawa, Ontario Prepared by:Christine Power, DVM, MSc

Alberta Cattle Movements 2007

- 644,962 shipments per year
- 7,424,196 cattle shipped per year
- 1,767 shipments per day
- 20,314 cattle shipped per day

July: 5,452 premises, 29,678 shipments, 374,455 cattle





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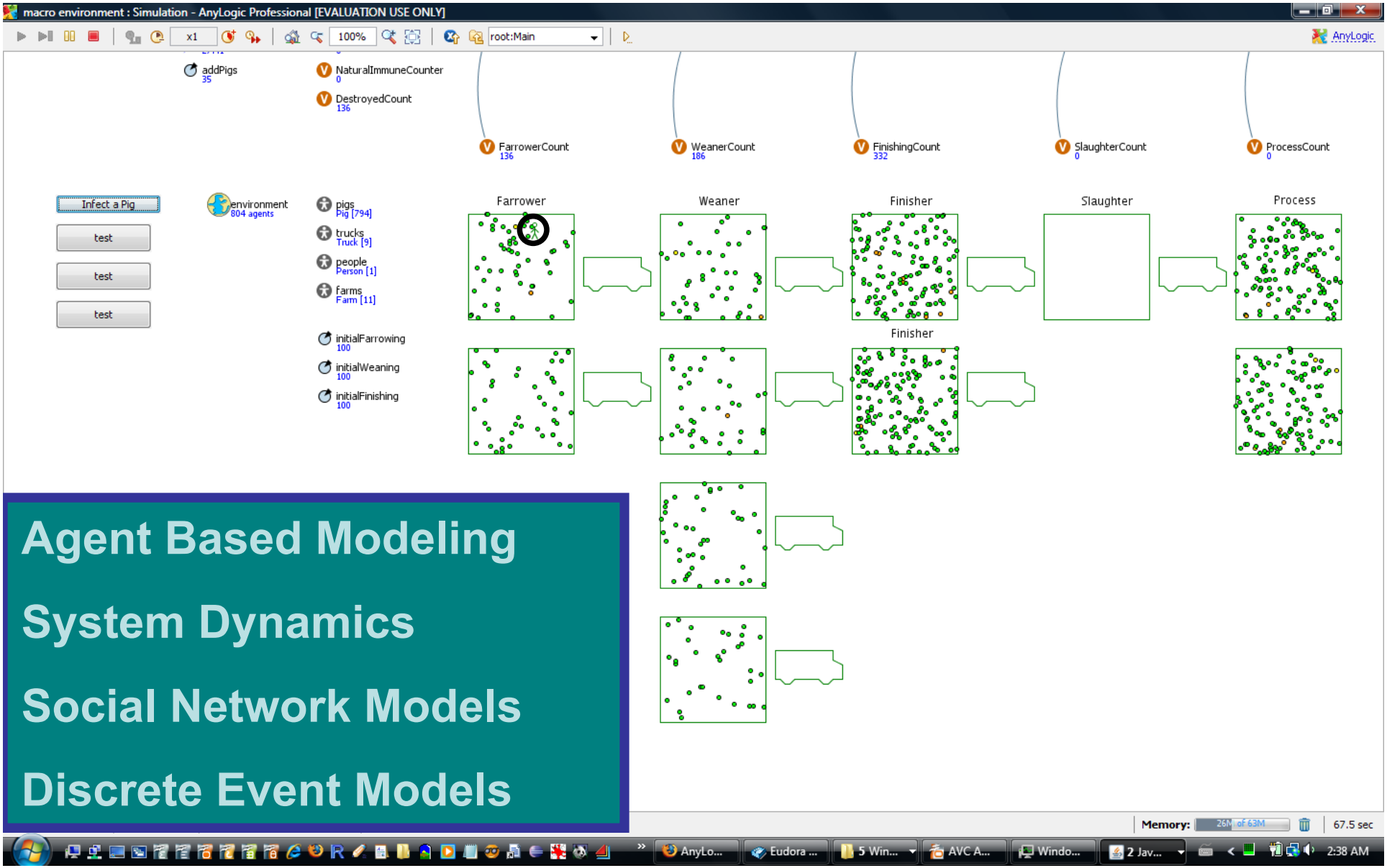
Supply chain modeling



Drivers

- **Reduce burden of disease in people**
  - Produce safe food
- **Security of the food supply**
  - Food borne pathogens disrupt supply of safe food
- **Economic viability of the industry**
  - Access to markets
  - Pathogen risk reduction to meet trading partners standard
  - Consumer confidence

Drivers

- **Reduce burden of disease in people**
  - Produce safe food
- **Security**
  - Food b
- **Economi**
  - Access
  - Pathogen risk reduction to meet trading partners standard
  - Consumer confidence

Source Attribution is Critical

Decision making

Prioritizing resources

Surveillance

- **Measure the burden of disease and how it changes**
  - Focus pathogen reduction activities
  - Valid attribute identification
  - Document the risk or health (trade)
  - Complete supply chain and human illness

- **Early pathogen introduction ID**
  - Mitigate the harm
    - Human illness
    - Loss to industry (markets animals)

AVSN:
Alberta Veterinary Surveillance Network

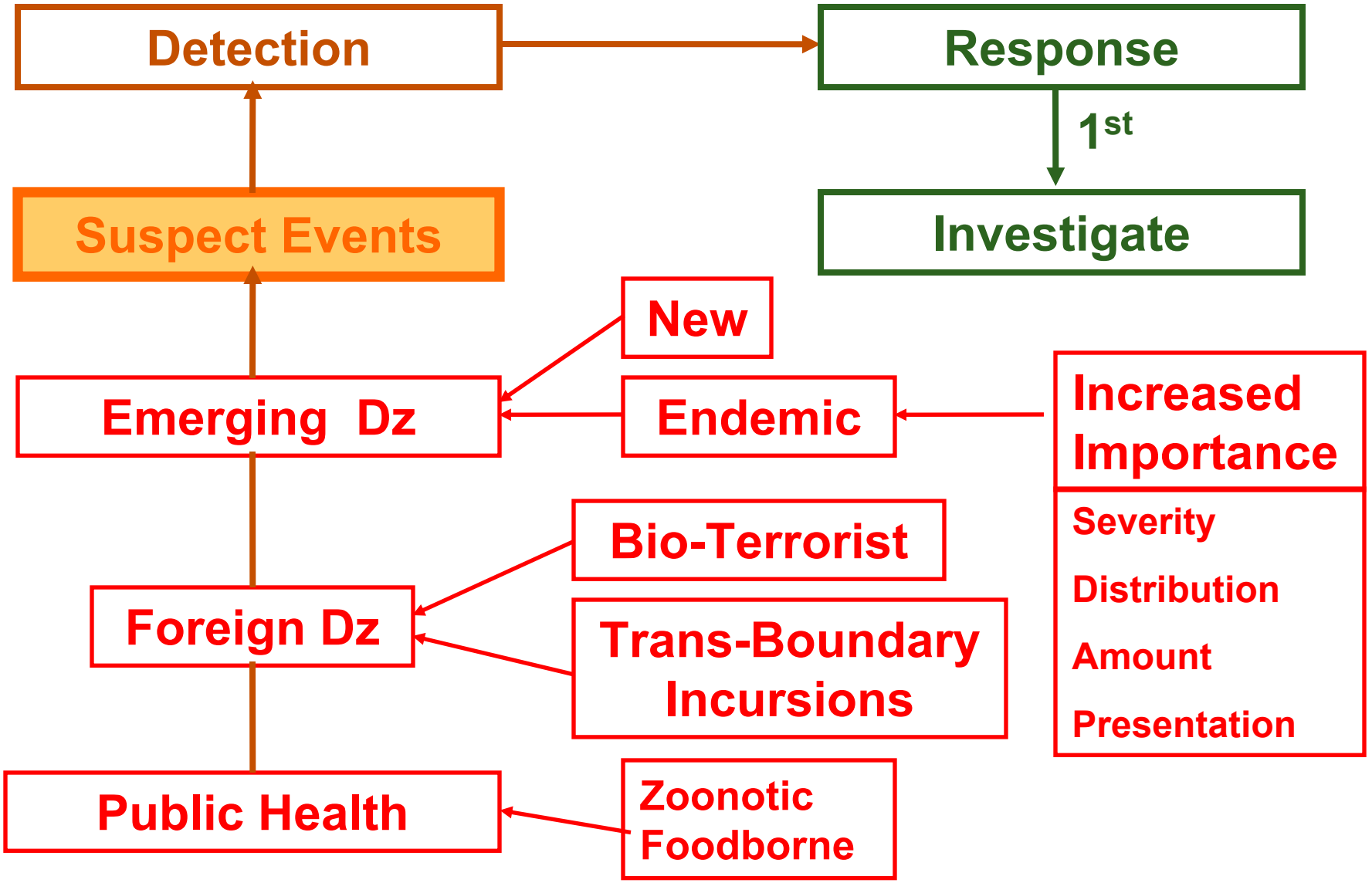
Infrastructure* for:

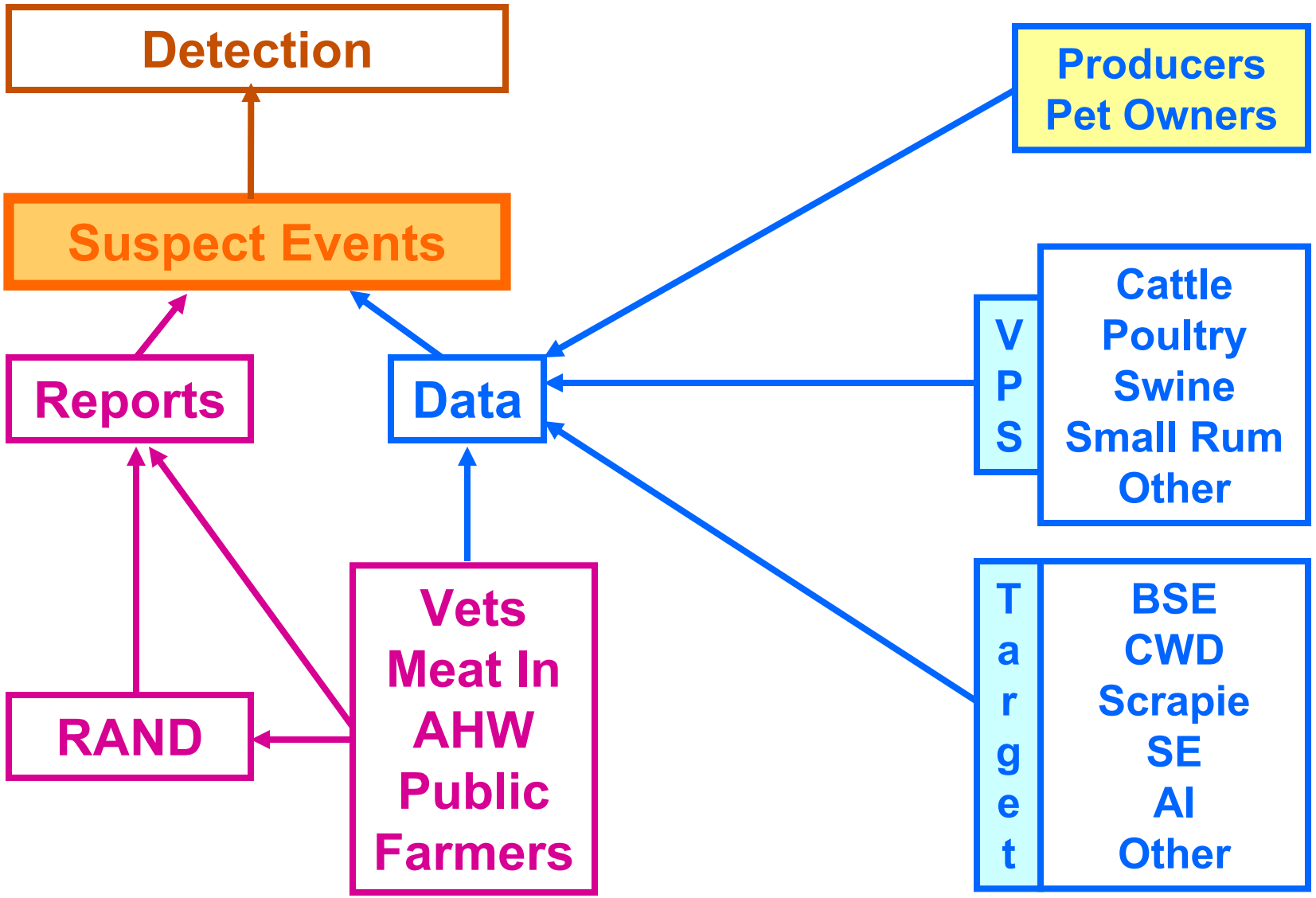
- Systematic continuous observation of AB livestock and poultry, and collection and analysis of data from many varied sources for:
- Rapid detection (or identification) and timely, appropriate response to important livestock, poultry, food safety and public health events

And

- Production and communication of valid information and knowledge about the health and disease status of AB livestock and poultry and safety of their products

***People, Processes and Technology**


Detection
Response
1st
Investigate
Suspect Events
New
Emerging Dz
Endemic
Increased Importance
Severity
Distribution
Amount
Presentation
Bio-Terrorist
Foreign Dz
Trans-Boundary Incursions
Public Health
Zoonotic Foodborne


Detection
Suspect Events
Reports
Data
RAND
Vets
Meat In
AHW
Public
Farmers
Producers
Pet Owners
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P
S
Cattle
Poultry
Swine
Small Rum
Other
T
a
r
g
e
t
BSE
CWD
Scrapie
SE
AI
Other

Federal

- **The Public Health Agency of Canada** conducts outbreak surveillance and epidemiology and provides advice to protect people's health.

- **Health Canada** develops food safety standards and policies to help minimize the risk of foodborne illnesses.

- **The Canadian Food Inspection Agency** carries out inspection of the food industry to ensure that it meets its food safety responsibilities.

- http://www.phac-aspc.gc.ca/fs-sa/index-eng.php

Provincial

- **Animal Health**
  - Provincial scope varies across Canada
  - Provincially: by Ag Ministries
  - Federal: by the CFIA

- **Food safety/meat inspection**
  - Provincial scope varies across Canada
  - Provincial plants: Ag and Health ministries and CFIA
  - Federal plants: CFIA

- **Public Health**
  - Provincial scope varies cross Canada

FPT Initiatives

- National Animal Health and Welfare Strategy
- National Strategy for Safe Food
  - Agri-Subcommittee on Food Safety
  - Pathogen Reduction in Meat and Poultry Working Group

- Canadian Animal Health Surveillance Network
- Canadian Network for Public Health Intelligence

- Alberta livestock and meat strategy

Challenges:

- **Knowledge creation and communication**
  - Rapid outbreak identification
  - Burden of disease: priority setting
  - Disease attribution
  - Supply chain/distribution system
- **Policy development**
  - Evidence based
  - Communicate complex ideas to decision makers
  - Participatory: all stakeholders
  - Jurisdiction

Challenges:

- **Response**
  - Participatory: all stakeholders
  - Regulatory/governance
- **Recovery**
  - Participatory: all stakeholders
  - Compensation
- Cross domain collaboration at all levels
- **Governance**
  - Who decides who will make the decisions

Thank You