

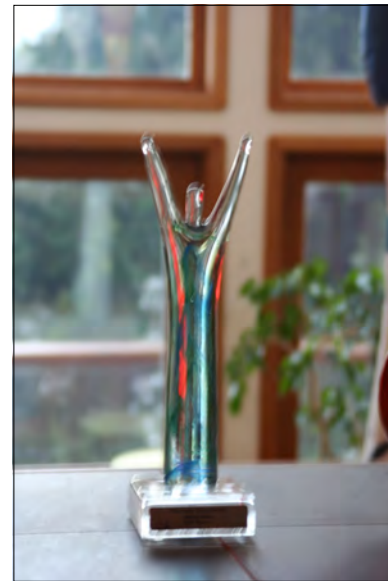
TIED TO THE TRACKS...  
how we got here, and why things are  
(finally!)  
about to change

Wendy Holm, P.Ag.

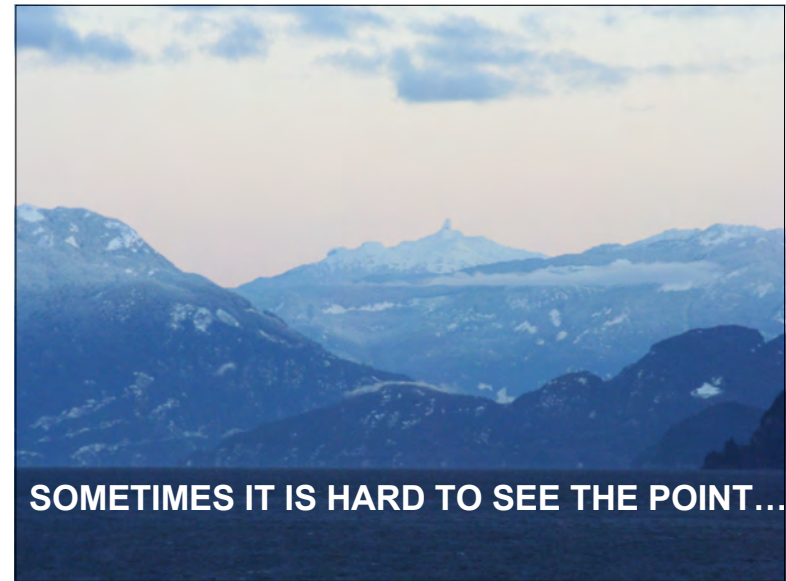
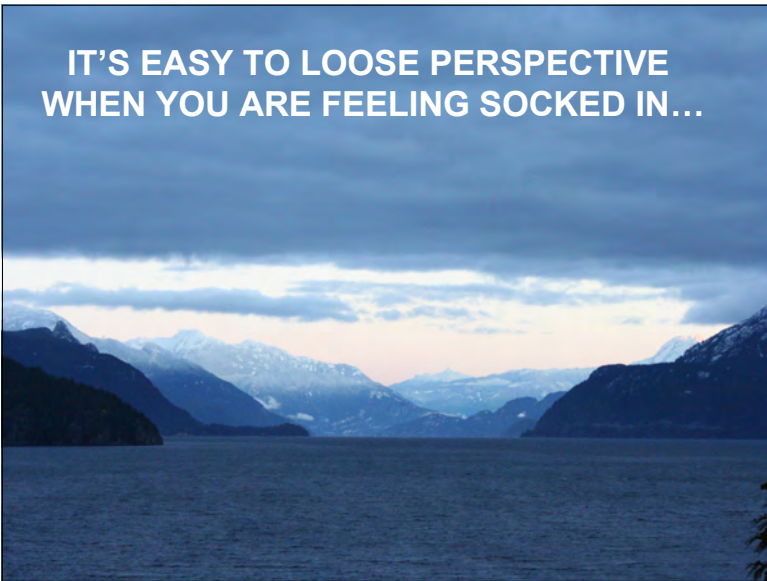
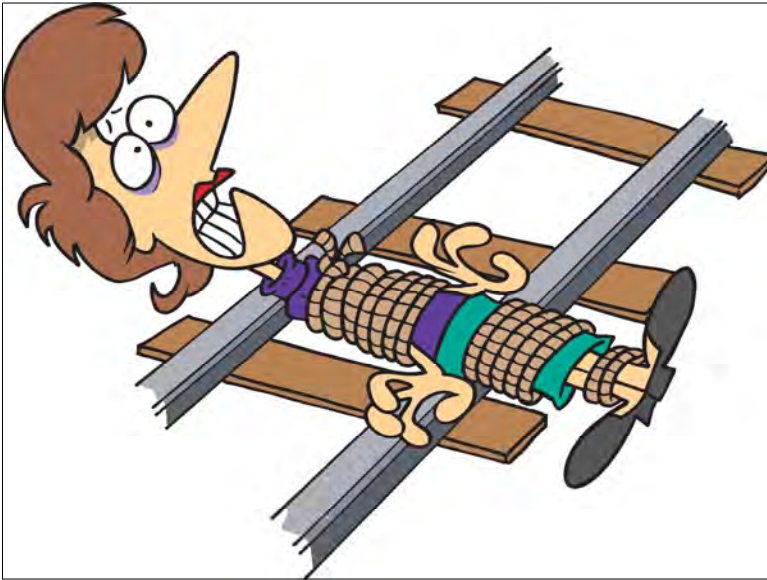
2010 Western Canada Grazing Conference  
Vermillion, Alberta - December 2, 2010



Rosemary  
Davis Award  
  
Farm Credit  
Canada



PASSION...



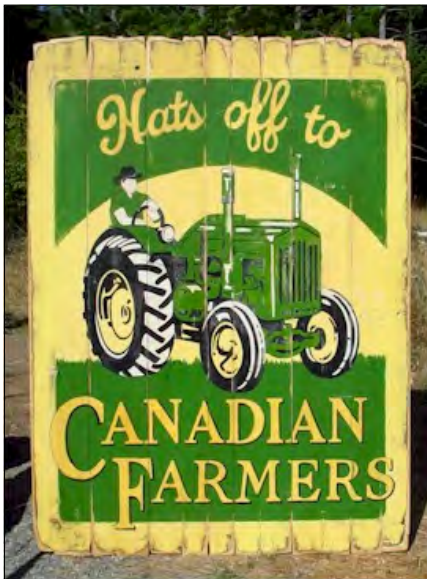


**THE POINT IS:  
FARMERS FEED COMMUNITIES...**



**Farmers + cooperation built the west...  
credit unions  
wheat pools  
co-ops  
CCF**

(Co-operative Commonwealth Federation)



**The 20th Century**

BC Apple Marketing Board

Canadian Wheat Board

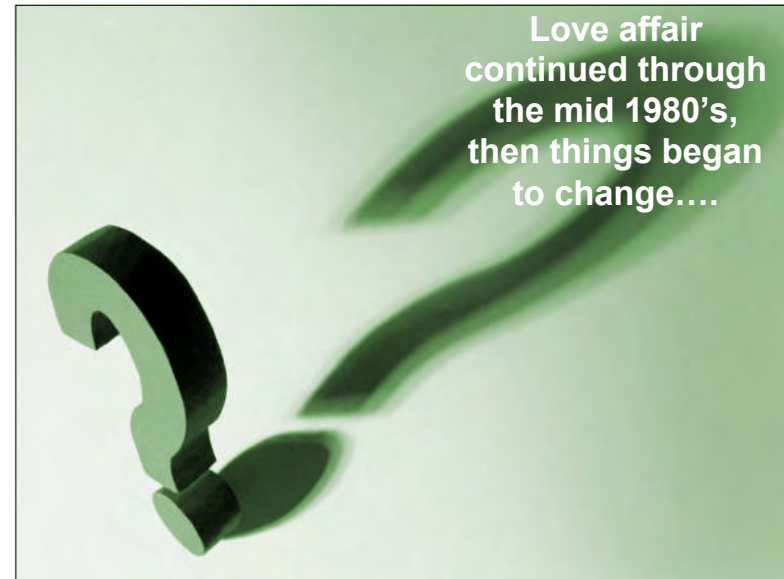
Supply Management

*milk, chicken, turkey,  
eggs, hatching eggs,*

**RESPECT**

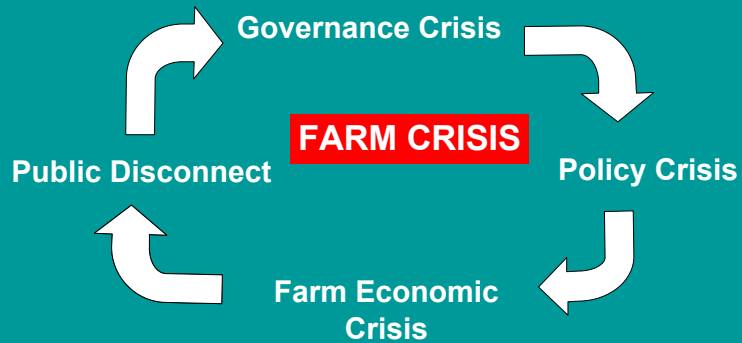
for

**FARMING**



**Love affair  
continued through  
the mid 1980's,  
then things began  
to change....**

Starting in the mid-1980's....



- ➔ ✓ **POLICY CRISIS**
- ✓ **Economic Crisis**
- ✓ **Public Engagement**

## POLICY CRISIS

- ✓ loss of regulatory & policy sovereignty  
GATT ➔ WTO ➔ FTA ➔ NAFTA
- ✓ increase market concentration pre/post farm gate  
e.g. beef, hogs, grain, dairy
- ✓ weakening of Canada's Competition Act
- ✓ erosion of local infrastructure
- ✓ drop in farm policy support
- ✓ loss of domestic market share
- ✓ escalating feed and fertilizer prices
  - ✓ ethanol
  - ✓ soon only two major fertilizer suppliers
- ✓ plummeting farm support vs trading partners

## CONCENTRATION IN MEAT PACKING

1870: Gustavus Swift

stockyards  
slaughter  
processing  
distribution and sales

1890: 89% of cattle slaughtered in Chicago?  
Armour, Swift, Hammond, Morris

1900: Armour # 8, Swift # 13 US Industry firms

1904: Armour and Swift = 50% of US market

1906: Armour and Swift = 100% of dressed beef mkt

1917: Armour and Swift = 93% of US market

## CONCENTRATION IN MEAT PACKING

1887 Interstate Commerce Act  
 1890 Sherman Anti-Trust Act  
 1891 Meat Inspection Act

### Trust Busting:

✓ US Steel and Standard Oil;

“concentration in meat packing too difficult to measure...”

## CONCENTRATION IN MEAT PACKING

### Technology changes that drove expansion:

1920's: cellulose casings+skinless hot dogs

1930-40's: refrigerated rail and truck

1950's: vacuum packing

1960's: boxed beef

## CONCENTRATION IN MEAT PACKING

### 1980's: CONGLOMERATION

Armour → Greyhound

Wilson → LTV (+ sporting goods, pharmaceuticals)

### 1990's: 3 majors rule US beef + pork markets

**CONAGRA** (Armour, Swift, Monfort)

**IOWA BEEF PACKERS**

**CARGILL** (Excel)

2000: more concentrated than any time in 20th century

## Four-Firm Concentrations: Beef Packing

Year	Steer Heifer	Cow Bull	Cattle	Boxed Fed Beef
1980	35.7	9.7	28.4	52.9
1985	50.2	17.2	39	61.5
1987	67.1	20	54.2	79.5
1990	71.6	20.4	58.6	79.3
1993	79.8	24	66	82.7
1994	80.9	26.3	67.8	85.7
1995	79.3	23.5	67.3	84.3

Measures the market share of the top 4 firms in the industry.

Source: U.S. Department of Agriculture, Packers and Stockyards  
 Statistical Report: 1995 Reporting Year, GIPSA 97-1,  
 September 1997, Tables 27, 28, and 29.

## Herfindahl-Hirshman Index: Beef Packing

Year	Steer Heifer	Cow Bull	Cattle	Boxed Fed Beef
1980	561	89	361	1,220
1985	999	160	617	1,527
1987	1,435	206	946	1,981
1990	1,661	223	1,118	1,988
1993	2,052	276	1,393	2,236
1994	2,096	320	1,460	2,340
1995	1,982	293	1,437	2,208

Below 1,000 = not concentrated  
 1000 - 1,800 = moderately concentrated  
 Over 1,800 = highly concentrated

Source: U.S. Department of Agriculture, Packers and Stockyards  
 Statistical Report: 1995 Reporting Year, GIPSA 97-1,  
 September 1997, Tables 27, 28, and 29.

## CONCENTRATION IN MEAT PACKING

1999: 2 Senate Bills

- ✓ temporary halt to all mergers in
  - grain
  - livestock
  - seed
  - fertilizer
  - food processing
- ✓ prevent packers from owning cattle

US Ag Secretary Dan Glickman (1999):

*"We should all be concerned when the trend to larger and fewer agricultural operations threatens to drive small operators out of business... Can't allow system of agricultural Darwinism to prevail with survival of fittest becoming survival of largest..."*

## CONCENTRATION IN MEAT PACKING

May 2009: US Senate Hearing into Five Rivers Ranch

JBS - Jose Batista Sobrinho (Brazil)

2009 Buys : Swift for \$1.5 billion  
 US Premium Beef  
 Smithfield Foods \$1.3 billion  
 2009 Bid: Tasman Group (Australia) \$149 million

- Now World's Largest Packer
- Reduced US major firms from 5 to 3
- Five Rivers Ranch (Tx, Co, Id, Ka, Ok)
  - Joint Venture Smithfield and Continental Grain
  - 815,000 hd capacity
  - slaughter 2 million hd yr at 1300 lbs
  - Prompted US Senate Hearing May 2009

*"Deal will basically make us tenant farmers on our own land with take it or leave it bids... The ability to vertically integrate by allowing more consolidation among packers and (allowing them to have) large feedlots like Five Rivers is economic waterboarding..."*

*Randy Stevenson, Wheatland, Wyoming*

## POLICY CRISIS

- ✓ **BEEF**
  - ✓ mid 80's - imports of boxed beef displace Canadian beef
  - ✓ packer concentration + ownership feeder cattle
  - ✓ BSE - Ottawa's failure to act;
  - ✓ Higher costs (SRM etc)
- ✓ **GRAIN**
  - ✓ CWB = premiums \$35-40/tonne due to price+transport
  - ✓ big grain companies, US farmers and "ginger group" driving attack
  - ✓ electoral interference, muzzling, board interference
  - ✓ unprecedented government attack on good farm policy
- ✓ **HOGS**
  - ✓ Right wing think tank solution
  - ✓ Disaster for farmers and communities

## POLICY CRISIS

- ✓ **MILK**
  - ✓ Small cooperatives merge
  - ✓ Parmalat and Saputo take over
  - ✓ Butter-oil sugar blends replace milk in ice cream
  - ✓ Milk protein concentrates replace milk in cheese
  - ✓ Legal challenge of CFIA's cheese regulations won but being appealed
- ✓ **SUPPLY MANAGEMENT**
  - ✓ Consistent undermining at WTO
  - ✓ Internal Agreement on Trade (technical standards)

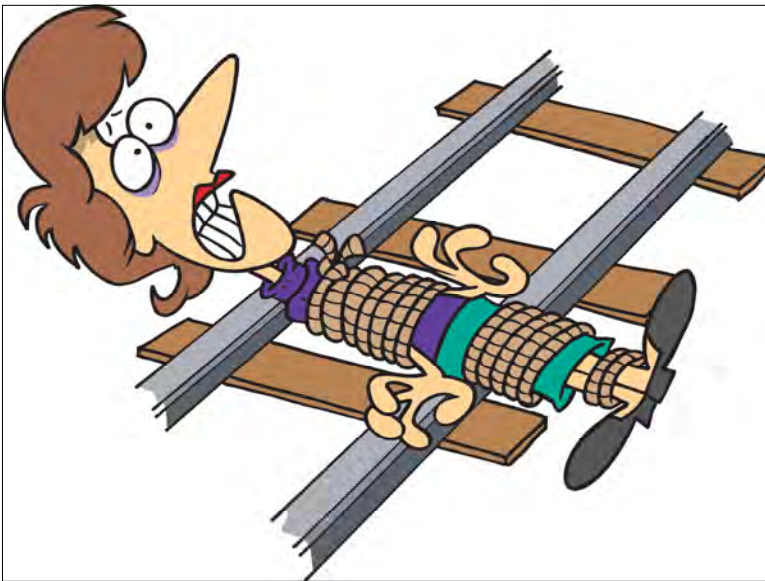
Gov't: "Get competitive or get out..."  
(as though this is about competition!)

Farm more and more land to pay the bills

Getting less for it than 30 years ago

Who can afford to take over the farm?

What does this mean for Canada's farmers?



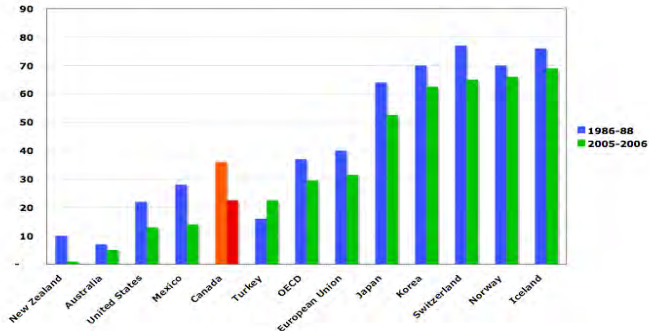
## MEASURING UP...

Where Canada Stands  
in support for farmers



**Canadian farmers are losing ground...**

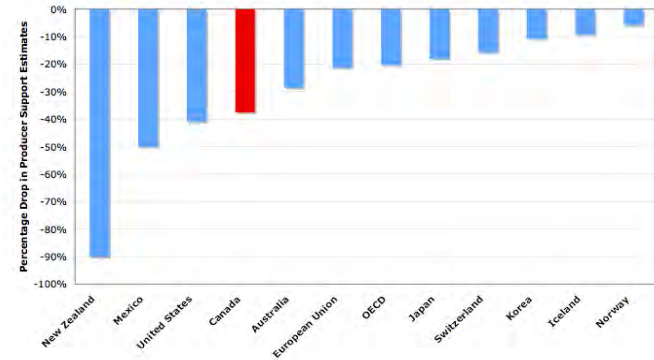
**Percentage Producer Support Estimates, OECD Countries, 1986-88, 2005-06**



**36% DROP IN FARM SUPPORT AS % FARM INC PAST 20 YRS**

**Presently:** CANADA = 23% of farm-gate returns  
 OECD = 30%  
 EU = 32%

**Decline in Support to Farmers, OECD Countries, 1986-88, 2005-06**

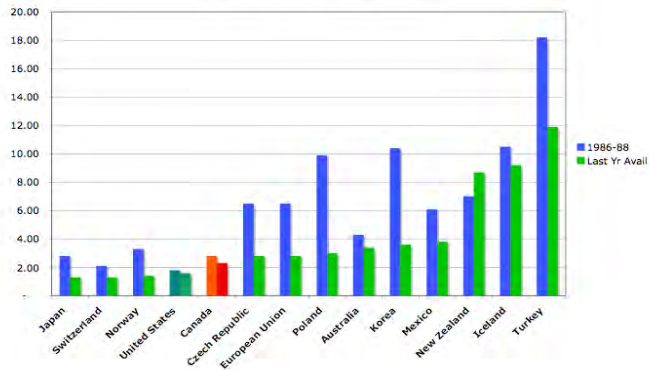


**38% CUT IN SUPPORT TO CDN FARMERS PAST 20 YRS**

**as compared with: OECD: 20% cuts  
 EU: 21% cuts**

**CANADIAN FARMERS CONTRIBUTION TO GDP REMAINS STEADY...**

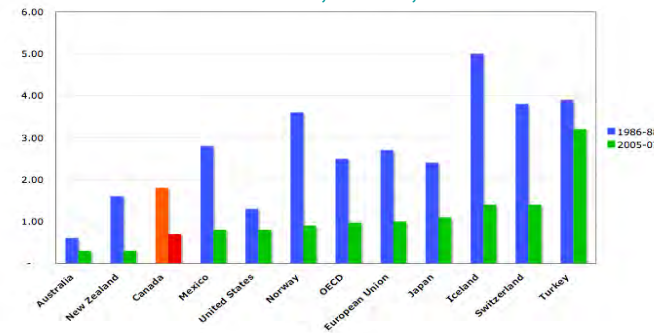
**Agriculture as a percent of GDP**



**compared with a 57% drop for the EU...**

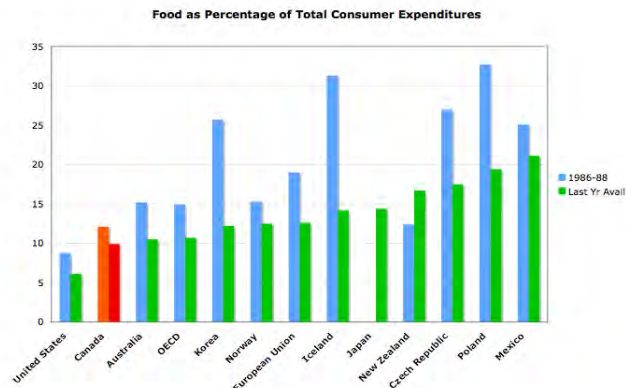
**CANADA'S FARM SUPPORT AS % GDP AMONG LOWEST IN OECD....**

**Total Support Estimates as a Percentage of GDP, OECD Countries, 1986-88, 2005-07**



**Canada's support to farmers in 2004-6 (.8%) was lower than all OECD nations other than Australia, NZ and Mexico. Support averages 39% higher as a % of GDP in OECD countries, 43% higher in EU.**

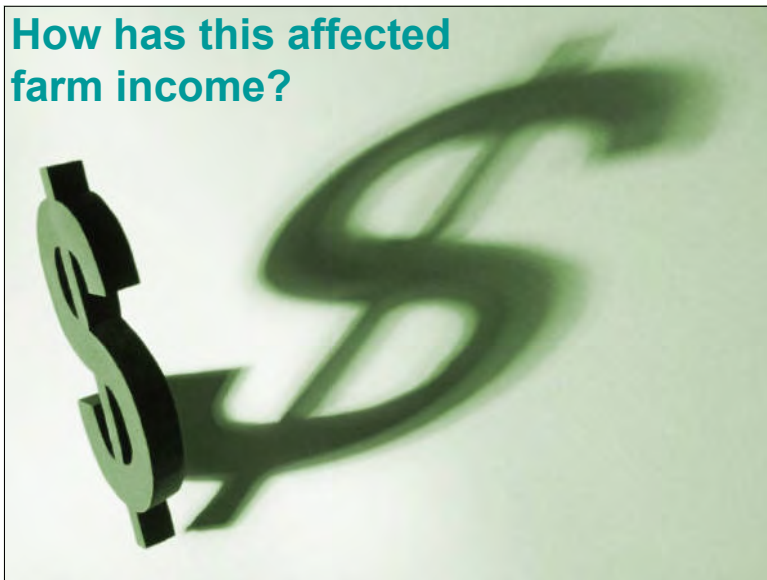
TODAY, Canadians enjoy amongst the lowest food costs in world



Canadians continue to enjoy the second lowest food costs (9.9% of total consumer expenditures) of all OECD member nations.



How has this affected farm income?



✓ Policy Crisis



✓ ECONOMIC CRISIS

✓ Public Engagement

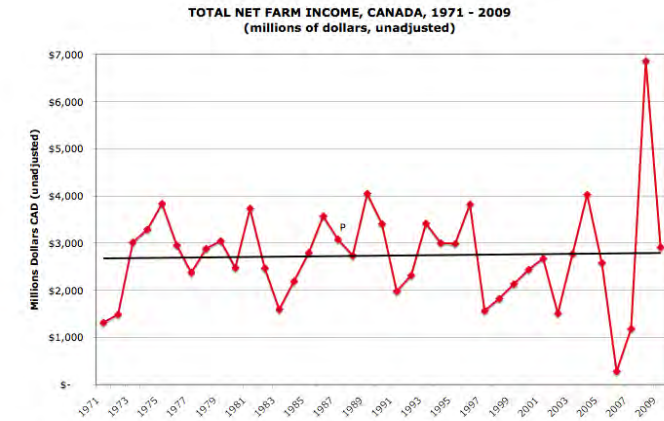
# ECONOMIC CRISIS

↑ *operating costs, debt*

↓ *net farm income*

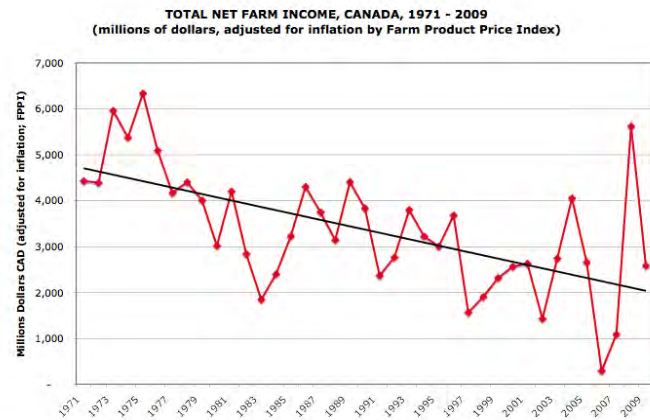
↑ *age of Canadian farmers*

## TOTAL NET FARM INCOME, UNADJUSTED, 1971-2009



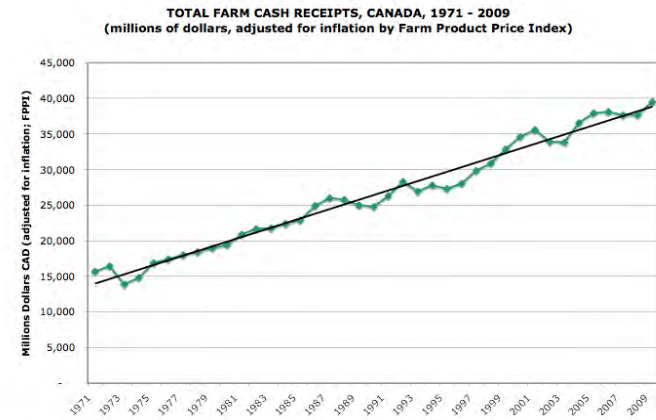
Source: Statistics Canada  
Table 002-0009: Income of farm operators from farming operations, annual.

## TOTAL NET FARM INCOME, CONSTANT DOLLARS, 1971-2009



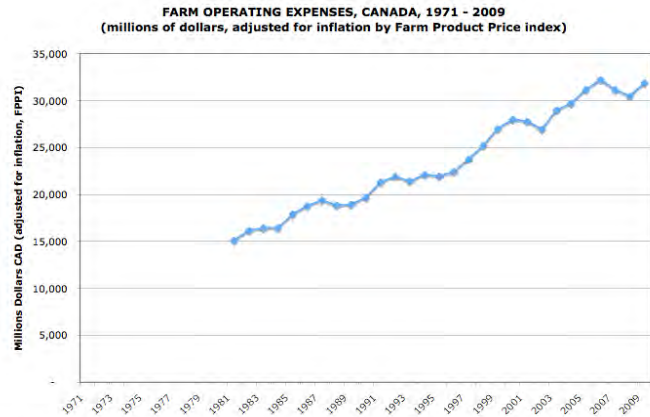
Wendy Holm, The Holm Team, 2009

## TOTAL FARM CASH RECEIPTS, CONSTANT DOLLARS, 1971-2009



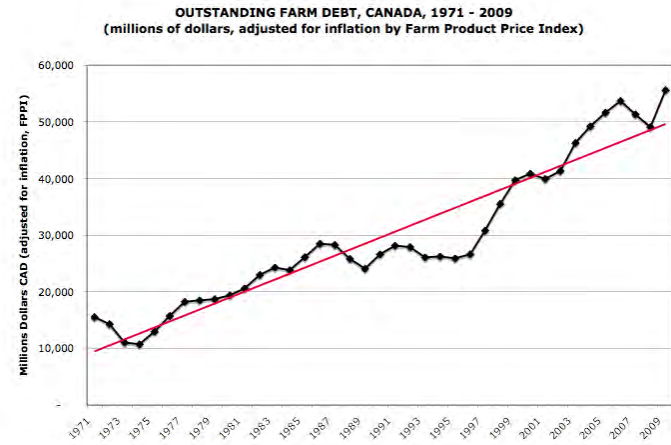
Source: Statistics Canada  
Table 002-0009: Income of farm operators from farming operations, annual;  
Table 002-0022 Farm product price index (FPP1) annual

## TOTAL OPERATING EXPENSES, CONSTANT DOLLARS, 1971-2009



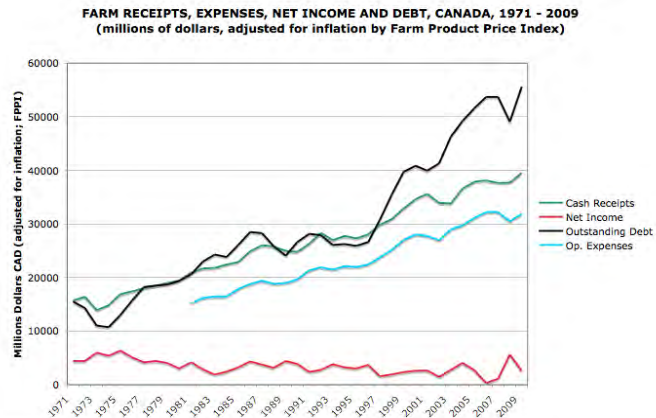
Source: Statistics Canada  
Table 002-0005: Farm operating expenses and depreciation charges, annual.  
Table 002-0022: Farm product price index (FPP1)

## OUTSTANDING FARM DEBT, CONSTANT DOLLARS, 1971-2009

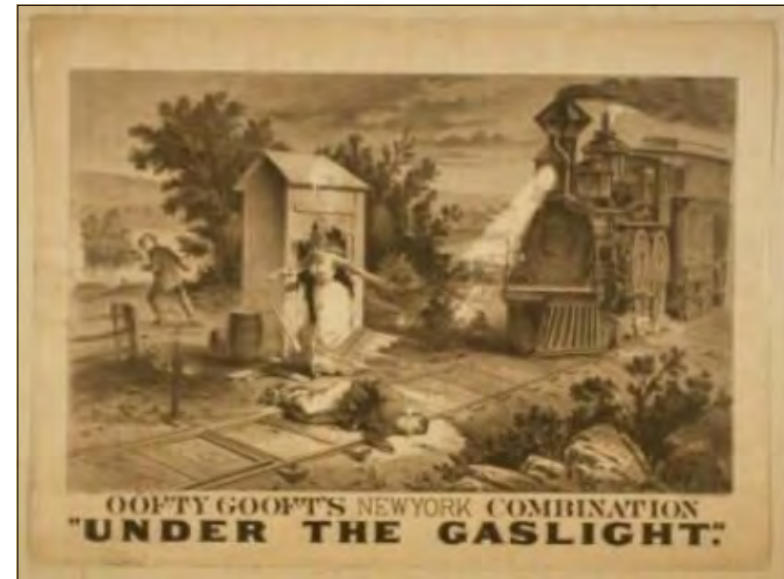


Wendy Holm, The Holm Team, 2009

## JAWS OF THE CROCODILE...

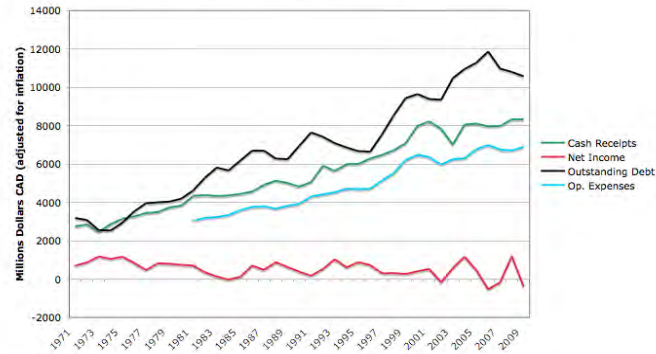


Source: Statistics Canada  
Table 002-0009: Income of farm operators from farming operations, annual;  
Table 002-0008: Farm debt outstanding, annual;  
Table 002-0022: Farm product price index (FPP1) annual

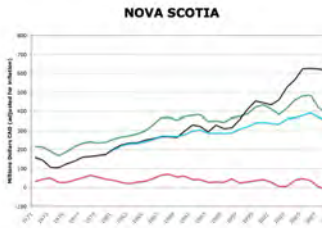
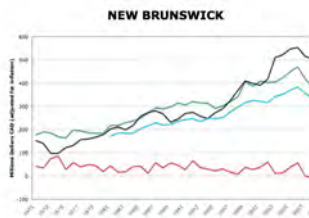
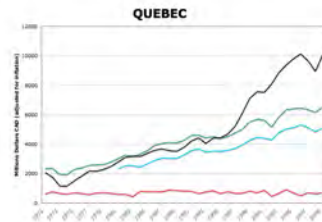
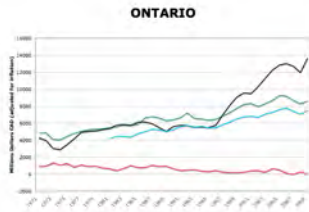
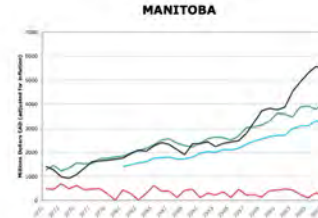
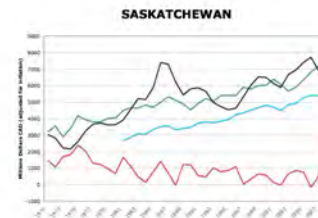
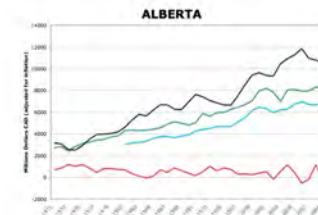
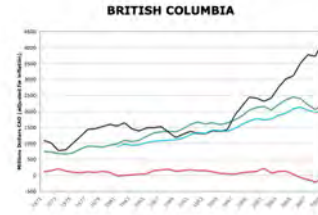


## THE ALBERTA CROCODILE...

**ALBERTA**  
**FARM RECEIPTS, EXPENSES, NET INCOME AND DEBT, 1971 - 2009**  
 (millions of dollars, adjusted for inflation by FPP1)

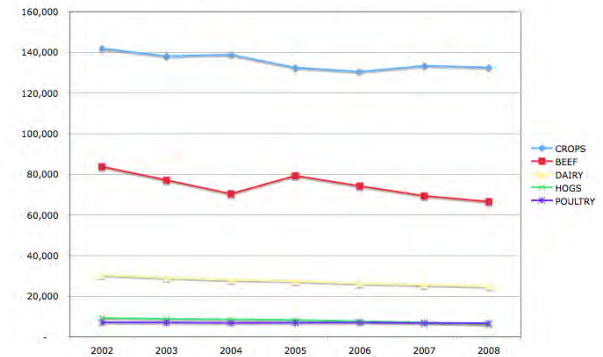


Source: Statistics Canada  
 Table 002-0009: Income of farm operators from farming operations, annual;  
 Table 002-0008: Farm debt outstanding, annual;  
 Table 002-0022: Farm product price index (FPP1) annual

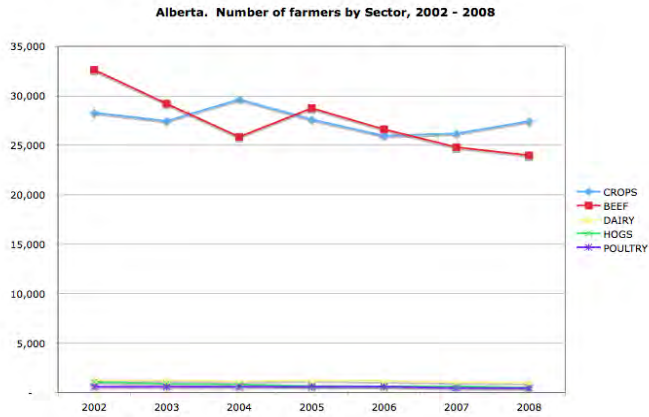


## Comparison of number of farmers by farm sector CANADA

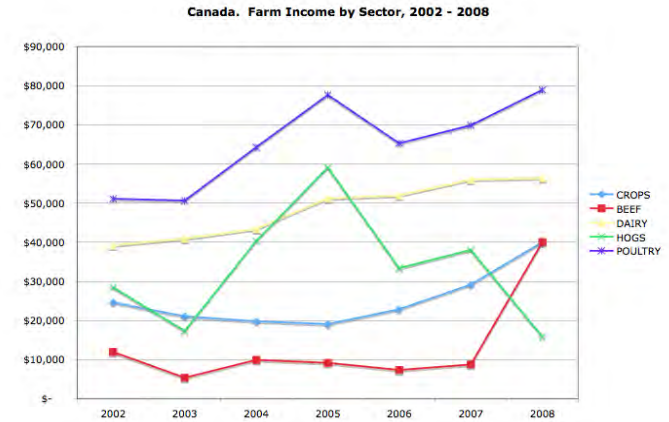
Canada. Number of farmers by Sector, 2002 - 2008



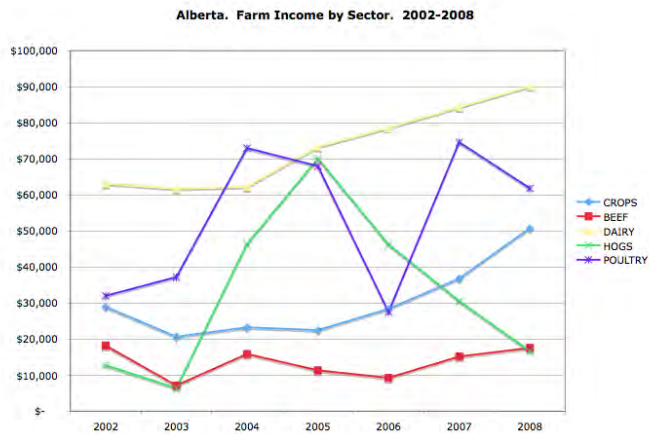
### Comparison of number of farmers by farm sector ALBERTA



### Comparison of net farm income by sector CANADA

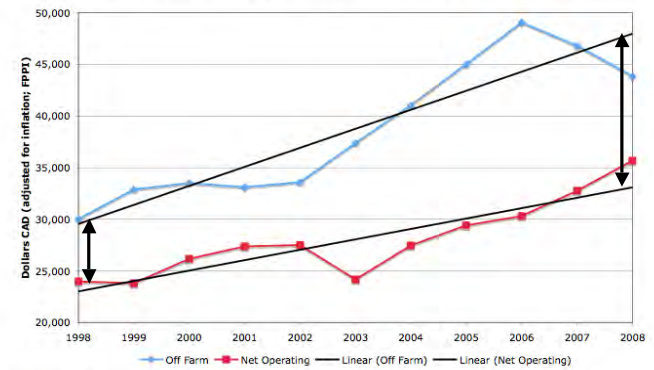


### Comparison of net farm income by sector ALBERTA



### OFF FARM WORK IS PAYING THE BILLS...

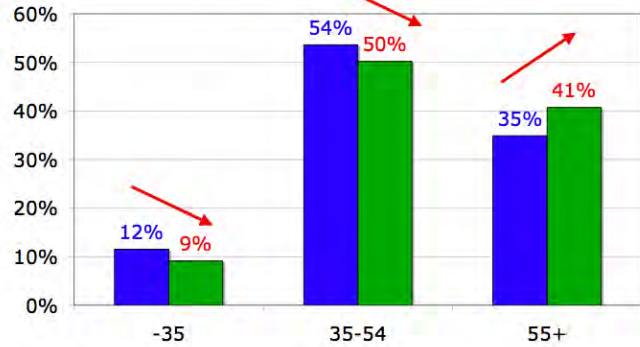
AVERAGE OFF-FARM AND NET FARM OPERATING INCOME, PER FARM, CANADA, 1998 - 2008  
( Dollars, adjusted for inflation by Farm Product Price Index)



Source: Statistics Canada  
Table 002-0034: Total and average off-farm income and total and average net operating income of farm operators, incorporated and unincorporated sectors, annual  
Table 002-0022: Farm product price index (FPI) annual

Where will our future farmers come from?

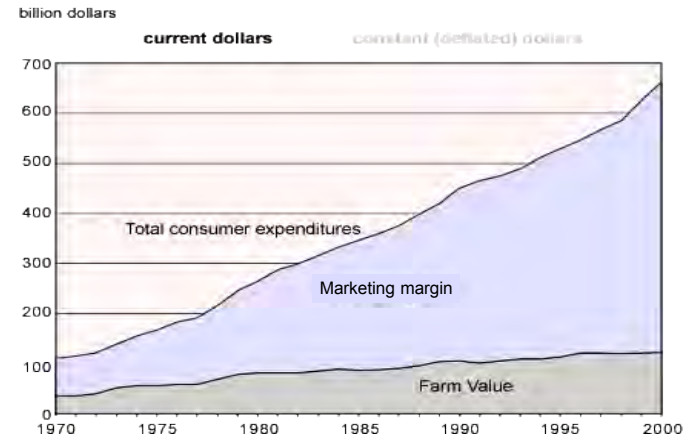
**AGE OF FARM OPERATORS, CANADA, 2001 AND 2006**



Source: Statistics Canada  
1986 - 2006 Censuses of Agriculture

## PUBLIC DISCONNECT

Trends in Food Spending, Marketing Bill, and Farm Value, 1970-2000



Courtesy Brent Warner, P.Ag.



Globalization pressures in mid-1980's....



## FARM DEBT

**1970:** for every dollar in their pocket at the end of the day, farmers carried \$3.40 in debt.

**1980's:** the debt to income ratio rose to \$7.42

**1990's:** farmers owed \$10.47 for every dollar earned.

**2000-2010:** debt rose to a staggering \$23.25 a sevenfold increase over 1970 levels.

## PRESSURE ON FARMLAND



- ✓ FARMLAND SPECULATION
- ✓ LACK POLICY SUPPORT FOR AGRICULTURE



## GLOBAL FARMLAND GRAB

World Bank Fall 2010 Report:

45 million ha large-scale holdings changed hands 2009  
1998-2008 average= 4 million ha/yr  
TEN FOLD INCREASE

\$100 billion global capital funds targeted for farmland  
120 funds, majors include

- **Optima Fund**
- Australia's **MacQuarie Agricultural Fund** (7 million acres now, headed for Brazil),
- **Pharos Financial Group** (Moscow, investing in Asia and Africa),
- **Monaxxion** (China, 99,000 acre goal), and the
- **Hancock Agricultural Investment Group.**

## Who is buying?

### Spain, Switzerland, China, Egypt and Iran

over million acres prime California farmland

next: US Midwest  
Texas  
Mississippi  
Idaho  
Dakotas

### Gulf States, China, Japan, S Korea, W Europe

Hundreds of millions of hectares of farmland  
Sub-Saharan Africa  
Central & Latin America  
Eastern Europe

## NEW TARGET? Canada and Australia:

good infrastructure, good government,  
good farmland and low land prices

Ha of comparable land, January 2010:

Canadian Prairies= \$1,725 USD

England = \$17,000

Australia = \$3,450

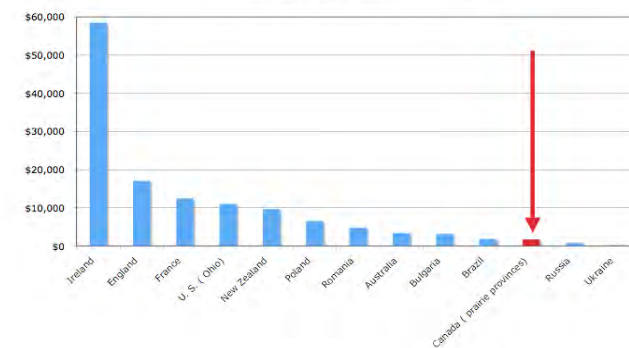
Globe and Mail, Aug 19, 2009  
"Cheap Canadian Farmland lures foreign buyers"

## FARMLAND PRICE PER HECTARE, \$ U. S. 2009

Ireland	\$58,500
England	\$17,100
France	\$12,500
U. S. ( Ohio)	\$11,000
New Zealand	\$9,643
Poland	\$6,600
Romania	\$4,855
Australia	\$3,450
Bulgaria	\$3,120
Brazil	\$1,850
Canada (prairies)	\$1,725
Russia	\$800
Ukraine	\$250

Source: Globe and Mail, Aug 19, 2009. Cheap Canadian Farmland lures foreign buyers

International Farmland Values, 2009, USD  
(Source: Globe and Mail)



## CANADIAN FUNDS:

### Assiniboia Capital

100,000 ac Saskatchewan farmland, holdings tripled in 2 years

### Agcapita Partners

60,000 ac & \$100 million under management

### Walton International

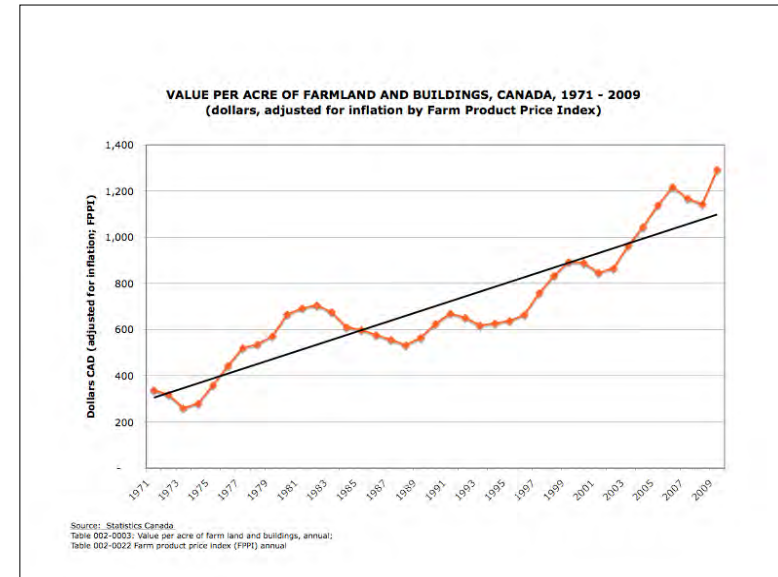
36,000 ac "development-ready farmland" surrounding Canada's cities

### Bonnefield Financial/Sprott Resources

First Nations/private sector; plans 200,000 ac under management

### Hancock (Manulife Financial)

183,000 acres of US farmland;  
looking north: just bought 1,100 ac cranberry farm Quebec



*winds of change...*



Flights grounded in Europe... airports close...

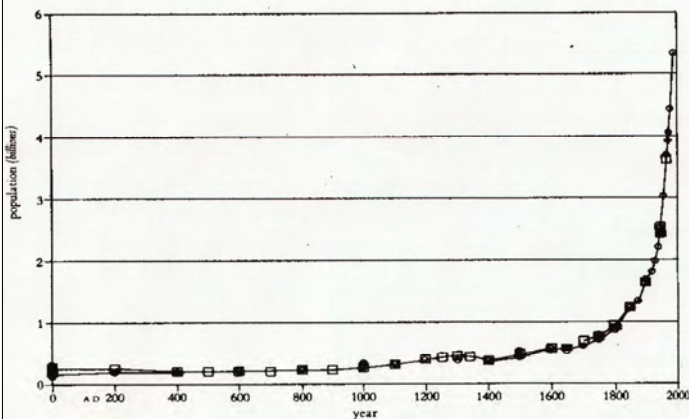


Londoners measure their food security in days...

*food security...*



## Estimated Human Population Over the Past two Millennia (Cohen 1995)



*“Food security is as important to this country’s future well-being – and the world’s - as energy security.”*

*We need to produce more food. We need to do it sustainably. And we need to make sure that what we eat safeguards our health...”*

UK Environment Secretary Hilary Benn  
Food 2030 Strategy, Oxford Farming Conference  
January 6, 2010

**FOOD SECURITY** means that food is available at all times; that all persons have means of access to it; that it is nutritionally adequate in terms of quantity, quality and variety; and that it is acceptable within the given culture. Only when all these conditions are in place can a population be considered “food secure.”

United Nations Food and Agriculture Organization

*peak oil...*



## US military warns oil output may dip causing massive shortages by 2015

- Shortfall could reach 10m barrels a day, report says
- Cost of crude oil is predicted to top \$100 a barrel

[Terry Macalister](#)

[guardian.co.uk](#), Sunday 11 April 2010 18.47 BST



## climate change...



The Effects of Climate Change on Agriculture, Land Resources, Water Resources and Biodiversity in the United States

U.S. Climate Change Science Program  
Synthesis and Assessment Product 4.3

May 2008

Already effecting...

Increasing temperatures

Variable rainfall

Increasing crop failures

## The Environmental Food Crisis UN Environment Programme

25% loss in food production due to climate change, water scarcity, invasive pests, land degradation



# food safety...



# food democracy...



## FOOD POLICY: (FOOD AS A BASIC HUMAN RIGHT)

Every Canadian has the right to a secure daily supply of affordable, accessible, safe and nourishing food produced in a manner that respects the soils, the farmer, the environment and the community.

## *food sovereignty...*



## FOOD SOVEREIGNTY

...the right of peoples, communities, and countries to define their own agricultural, labor, fishing, food and land policies which are ecologically, socially, economically and culturally appropriate to their unique circumstances.

Institute for Food and Development Policy

## *emerging culture...*



## ✓ CULTURE SHIFT...



## ✓ CULTURE SHIFT...

### FarmVille

- 73.8 Million users per day after only 6 months (CBC)
- social media game about farming most popular among Facebook's 350 million users.
- allows city folks to become virtual country folks
  - virtual crops    virtual animals    virtual little red tractors
- WHO is playing?
  1. United States
  2. Turkey
  3. Philippines
  4. United Kingdom
  5. Italy
  6. Canada

## ✓ CULTURE SHIFT...



## ✓ CULTURE SHIFT...

### Career choices

- 7 out of 10 students at UBC Faculty of Land and Food Systems now say they "want to farm"
- SAIT's culinary program projected to grow from 200 students this year to 400 within next 2 years

## *locality, footprint...*

*(food miles, 100 mile diet...)*



National Restaurant Association  
2010 Chefs' Survey  
American Culinary Federation

- 1,800 professional chefs
  - over 200 culinary items
- Top 20 "Hot Trends" on menus:
- #1 Locally Grown Produce
  - #2 Locally Sourced Meats and Seafood
  - #3 Sustainability
  - #10 Sustainable Seafood
  - #12 Organic Produce

*food in cities...*



**URBAN + PERI-URBAN AGRICULTURE**



*sustainability...*



**Sustainable (Bruntland):**

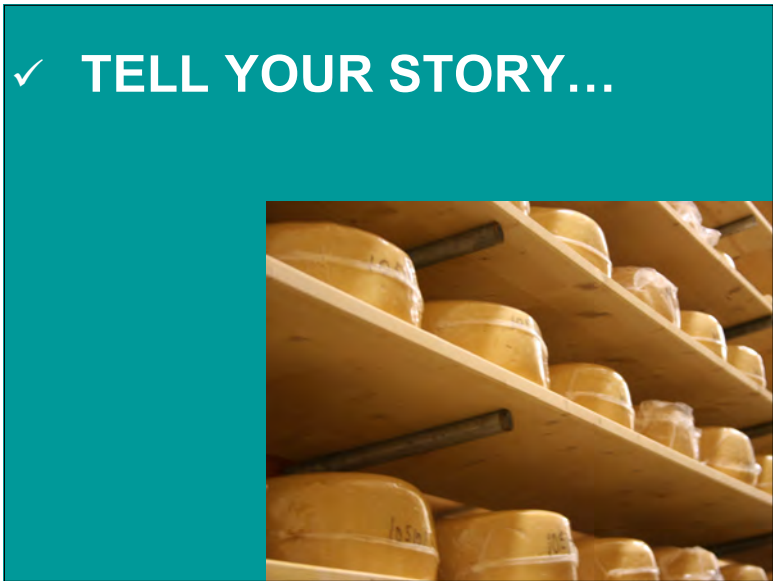
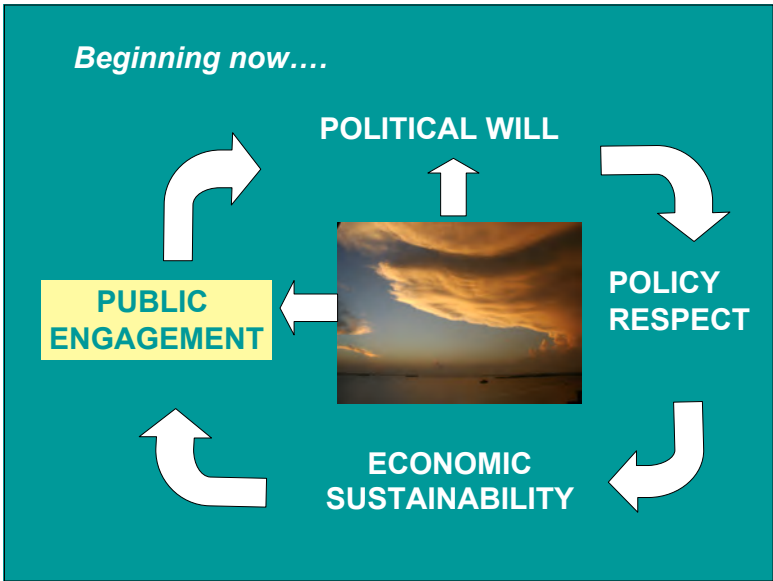
*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*

**Unsustainable (Pollen):**

*To call a practice or a system unsustainable is not just to lodge the objection based on aesthetics, say, or fairness, or some ideal of environmental rectitude. What is meant is that the practice or process can't go on indefinitely because it is destroying the very conditions on which it depends."*







✓ STRENGTHEN COOPERATIVES

Collapse of global financial markets...

Leverage cooperative strengths  
Co-ops are more nimble, fit  
(can collude to build market share,  
exempt from Combines, tax benefits)

Feeder Association of Alberta  
Should leverage more support  
from other cooperatives...

## ✓ PAY FOR STEWARDSHIP

- ✓ farmland resource
- ✓ riparian habitat
- ✓ wetlands and wildlife
- ✓ endangered species
- ✓ protected zones
- ✓ topsoil
- ✓ water conservation
- ✓ grasslands

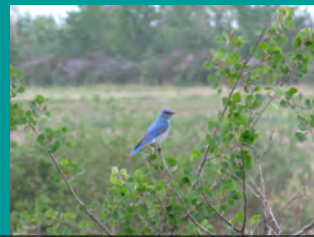


Photo courtesy Don Ruzicka

- ✓ **HEAL RIFTS BETWEEN commodity groups**  
find the common ground... (e.g. water)

- ✓ **UNDERSTAND+LEVERAGE LINKAGES**  
e.g. to urban farming

- ✓ **BUILD RELATIONSHIPS and COALITIONS...**  
rural and urban consumers,  
conservationists

Build local slaughter capacity



Call for Alberta leadership  
on Canadian COOL



Look closely at benefits of holistic  
management

Let the cattle do the work...



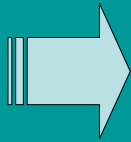
YOU ARE • WHAT YOU  
**EAT**

Pursue natural/organic markets

## ✓ STRENGTHEN RELATIONSHIPS with local government



economic, social,  
environmental...



SUSTAINABLE

## LOCAL FARMERS

Economic heroes of local communities

- ↓ GHG's
- ↓ Vulnerability of food system to weather and markets
- ↑ Choice
- ↑ Biodiversity
- ↑ Fresh and nutritious
- ↑ Controls on quality and inputs
- ↑ Community Economic Development

## LOCAL GOVERNMENT PRIORITIES

- Accessible and available of food
- Farmers' Markets (relationships)
- Food security
- Food Policy Councils
- Systems to redistribute surpluses
- Food banks
- Leadership at regional, provincial and national level

## MYTHS...

Farmers are only 3-5% of population so it is hard to come up with money for \_\_\_\_\_ (fill in the blank).



Difficult for government to invest more than the size of the industry justifies....

Farmers need to undergo transformational change...

Farmers need to become more competitive...

## MYTH: Low packer margins don't allow much profit-taking

- Small price effects have LARGE effects on packer and feeder profit.
- AMI figures for the years 1979-86: livestock costs 88%, before-tax earnings about 1.25%
- A fall in cattle prices of only .5% increase packers' profit by about 35%.
- Iowa Cooperative Extension Service figures (Futrell) estimate the returns from finishing yearling steers to Choice slaughter grade to have been approximately \$49/head in the fourth quarter of 1990.
- The same .5% decline amounts to a drop in profit of \$4.40/head on a 1,100 pound steer at \$80/cwt. In other words, feeders' profit would decrease by nearly 9%...

Implications of Increased Regional Concentration and Oligopsonistic Coordination in the Beef Packing Industry. Azzeddine M. Azzam and John R. Schroeter



		Drop in Liveweight price of .05%	Effect on margin
<b>PACKER</b>			
LIVESTOCK COSTS	88%	87.500%	
PROCESSING COSTS	10.75%	10.75%	
PACKER PROFIT	1.25%	1.750%	40%
	100.00%	100.00%	
<b>FEEDER</b>			
price/cwt	\$ 80.00	\$ 79.60	
wt at slaughter	1100	1100	
gross	\$ 880.00	\$ 875.60	
Returns to finish	\$ 49.00	\$ 44.60	-9%

## QUESTION: WHERE IS THE LEADERSHIP?

Junkets to Japan and Europe - handful of farmers... What is accomplished?

Cheaper and more strategic to take back more domestic market share...

Need local processing capacity...

Need new mechanisms to link to consumers...



## WHERE IS THE LEADERSHIP?

Paying to produce safer product  
e.g. \$75 hd SRM costs  
e.g. stricter vet regulations  
e.g. trace-back



Yet consumer can't "buy Canadian"...

instead of fighting US Country of Origin Labeling,

Why not a "CANADA COOL"

(let Canadian consumer choose Canadian beef...)

## WHERE IS THE LEADERSHIP?

Packer concentration and ownership of cattle allows packers to manipulate/control cattle prices.

This takes money out of the pockets of farmers and is not sustainable.

Packers should not be allowed to own cattle.

If small local kill plants face higher CFIA costs to get into operation, government should provide assistance to support those costs...



## WHERE IS THE LEADERSHIP?

Check-off should be mandatory for all - including packers - to fund industry development and support little players...

Agri-Recovery Fund should be available to provide disaster relief e.g. in drought areas...



## ✓ **SPEAK WITH ONE VOICE**



**THE FOOL .**



✓ **SPEAK WITH ONE VOICE**

STOP THE PARTISAN  
BICKERING  
AND SUPPORT FARMERS!

A cartoon illustration of a man in a blue suit shouting into a red megaphone. He is pointing towards Big Ben, which has a clock face. The background is a blue sky with a white cloud.

✓ **HAVE FAITH...**  
if you go in the right direction,  
you will get to the right place

A collage of four landscape photographs. The top-left photo shows a lake and mountains under a cloudy sky. The bottom-left photo shows a mountain range. The bottom-right photo shows a mountain peak with snow. The right side of the collage is a solid teal color.

It all comes down to...

A photograph of a sunset over a lake. The sun is low on the horizon, creating a bright glow. In the foreground, there is a dark silhouette of a bench on a hill overlooking the water.

**RESPECT**

A photograph of four people riding segways on a city street. They are wearing helmets and holding handles. The street has a crosswalk and a yellow car is visible in the background.

**VERY BRIEF SEGUE ON  
CUBAN GRAZING MODEL...**



- 89-91 - Collapse of former Soviet Union
- Cuba's economy thrown into darkness
- high input monoculture (sugr) to world leadership in sustainable agriculture "overnight"
- Six Factors
  1. Soils, water, climate
  2. Literate farmers
  3. Strong scientific capacity
  4. Strong ag extension
  5. Farm cooperatives
  6. ANAP



**Cutting edge practices:**

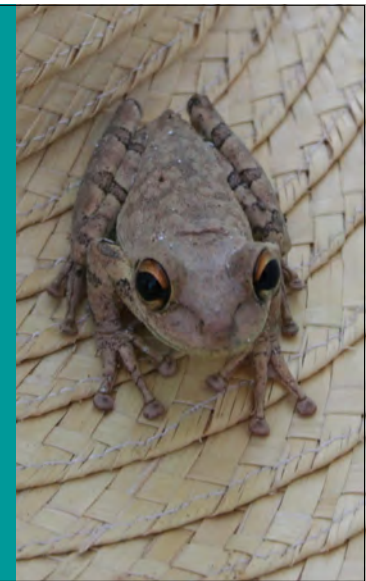
**Only nation to achieve sustainability based on ecological footprint and social development index (WWF)**

**World leader in organic agriculture (Right Livelihood Award)**

**Strong relations with Canada**

**Began work in Cuba 1998**

- 600 Canadian farmers in 28 delegations
- 2 delegations of Chefs
- 1 delegation of entomologists
- 5 UBC AGSC 302 courses
- 1 international cooperation project in sustainable dairy





## Enhancing Sustainable Dairy Production Capacity in Cuba

- 2005-present (+5 yrs...)
- CAN + CUBA farmers
- \$250,000 funding
- International Award  
AMEC Award for Sustainable Development or Protection of the Environment



## LOS PEDESTALES...







**END OF SEGUE !**



It all comes down to...

**RESPECT**

The point?  
**FARMERS FEED COMMUNITIES!**

