

# Local Environment Protection and Trade: The Case of Hog Production in Canada and Mexico

L. Martin Cloutier, Paul J. Thomassin

Florence Dagicour and José-Carlos Rodríguez



# Outline

- Objectives
- Trade and the Environment
- Environmental Policy
- Mexico Case
- Canada / Quebec Case
- Conclusions

# Objectives

1. Review the different economic policies that can be used to protect the environment and to identify the incentives given to firms from the various mechanisms.
2. The cases of Mexico and Canada are presented. An overview of the production and legal environment for hog production is used to illustrate the existing economic policies.

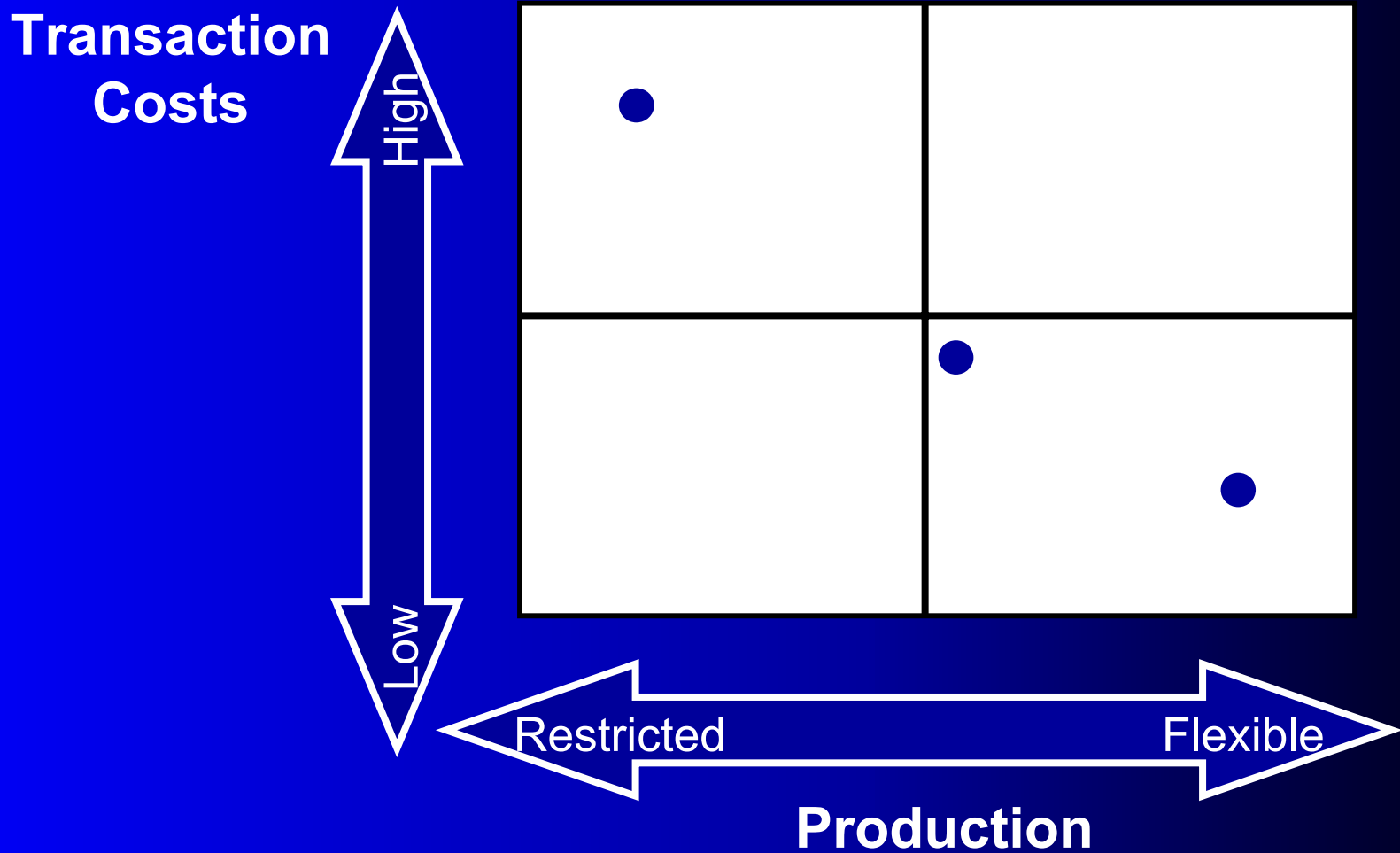
# Trade and the Environment

- The NAFTA agreement has provided the opportunity for increased trade between the countries.
- Increased trade results in increased output that can increase environmental damage.
- Environmental damage from agricultural production tends to be non-point source pollution.

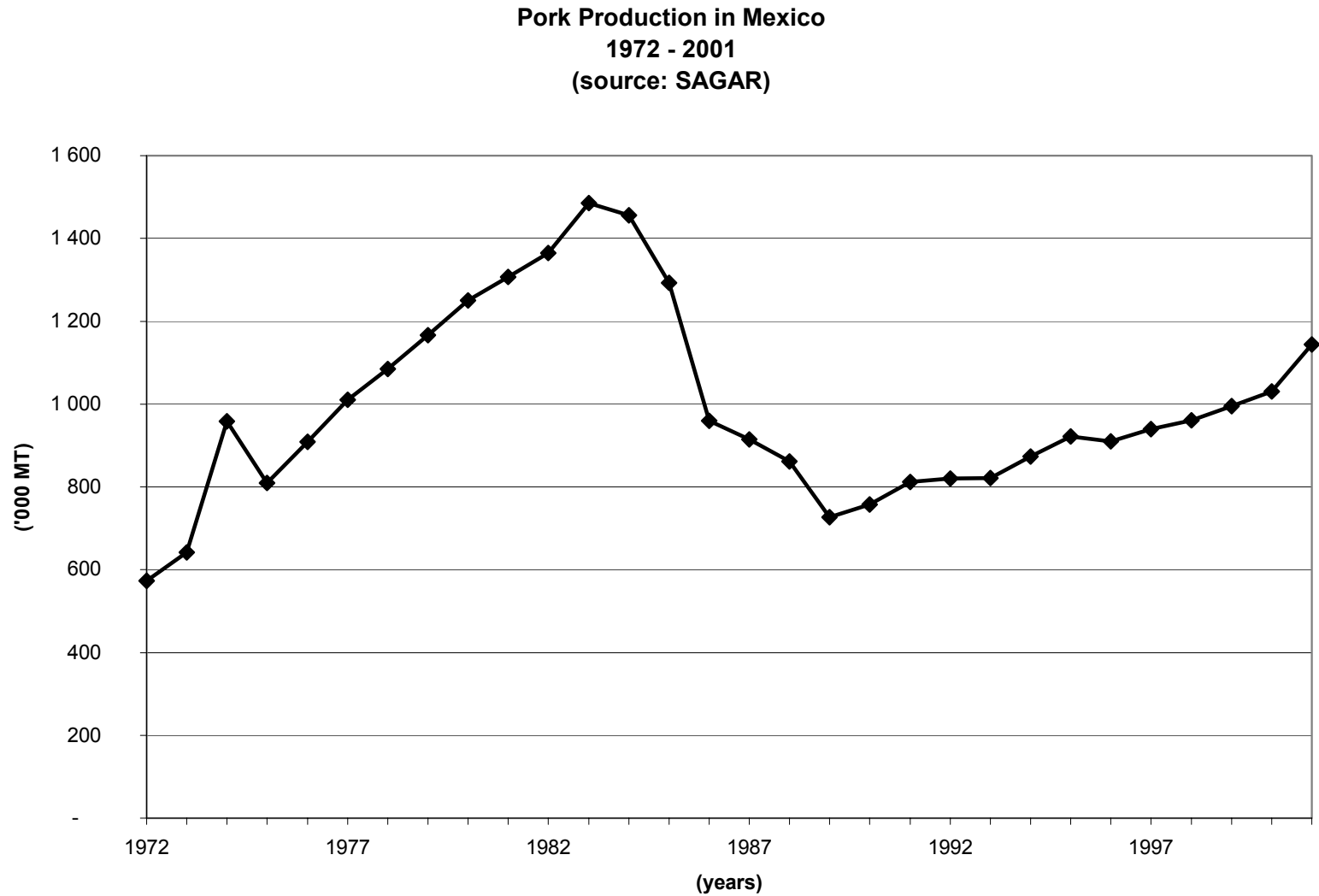
# Economic Policies

- Mandatory policies
  - Command and control
  - Reactive producer behavior
  - Limited flexibility for producers
- Economic incentives
  - Pigovian taxes or subsidies and tradable permits
  - Increased flexibility for producers
- Voluntary programs
  - Public programs, bilateral programs and unilateral programs
  - Certification programs
  - Greatest level of flexibility
  - Proactive producer behavior
  - Threat of regulation

# Transaction Cost v. Production Flexibility Tradeoffs

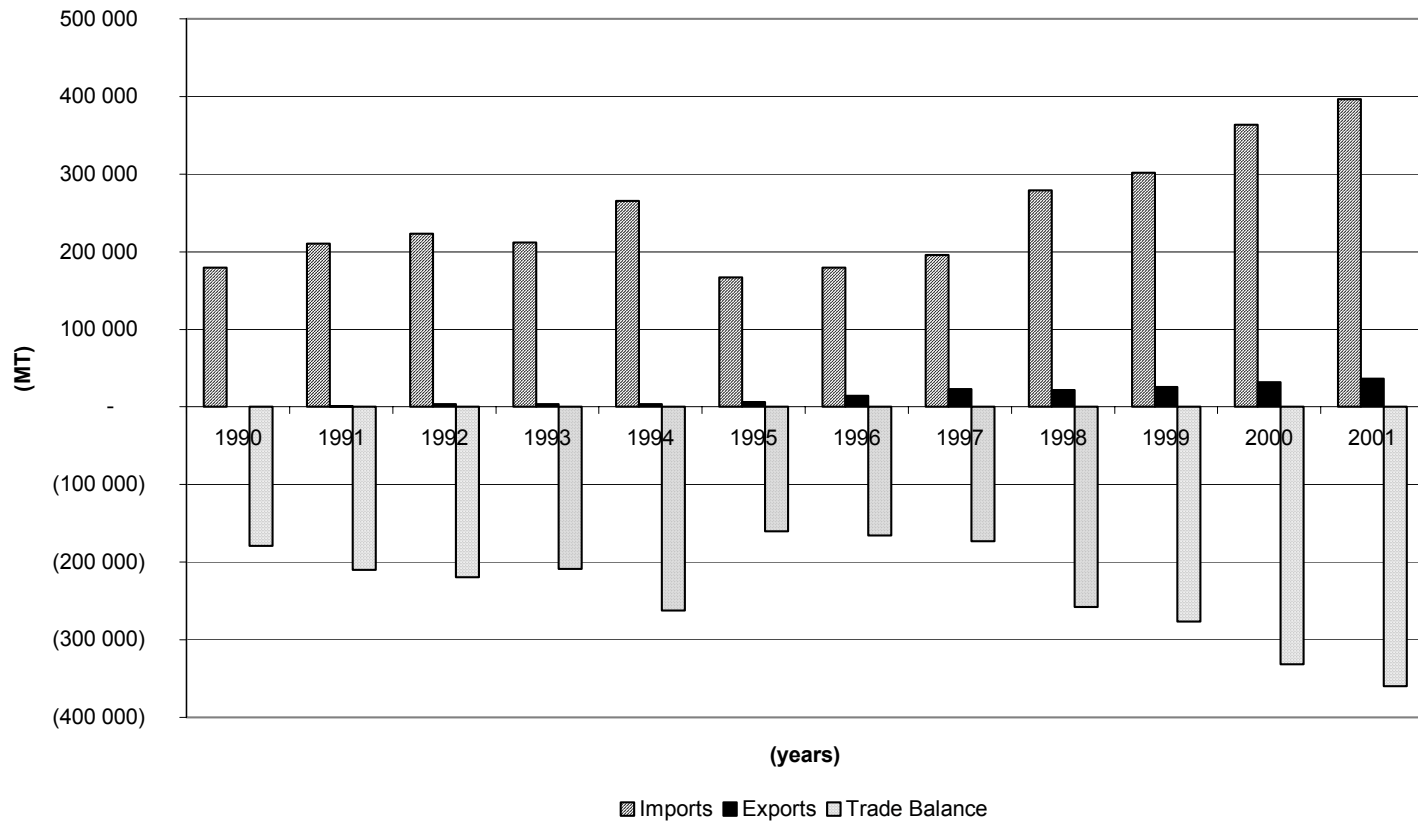


# Mexico Case



# Mexico Case

Pork Import and Export Trends in Mexico  
1990 - 2001  
(source: SAGAR)





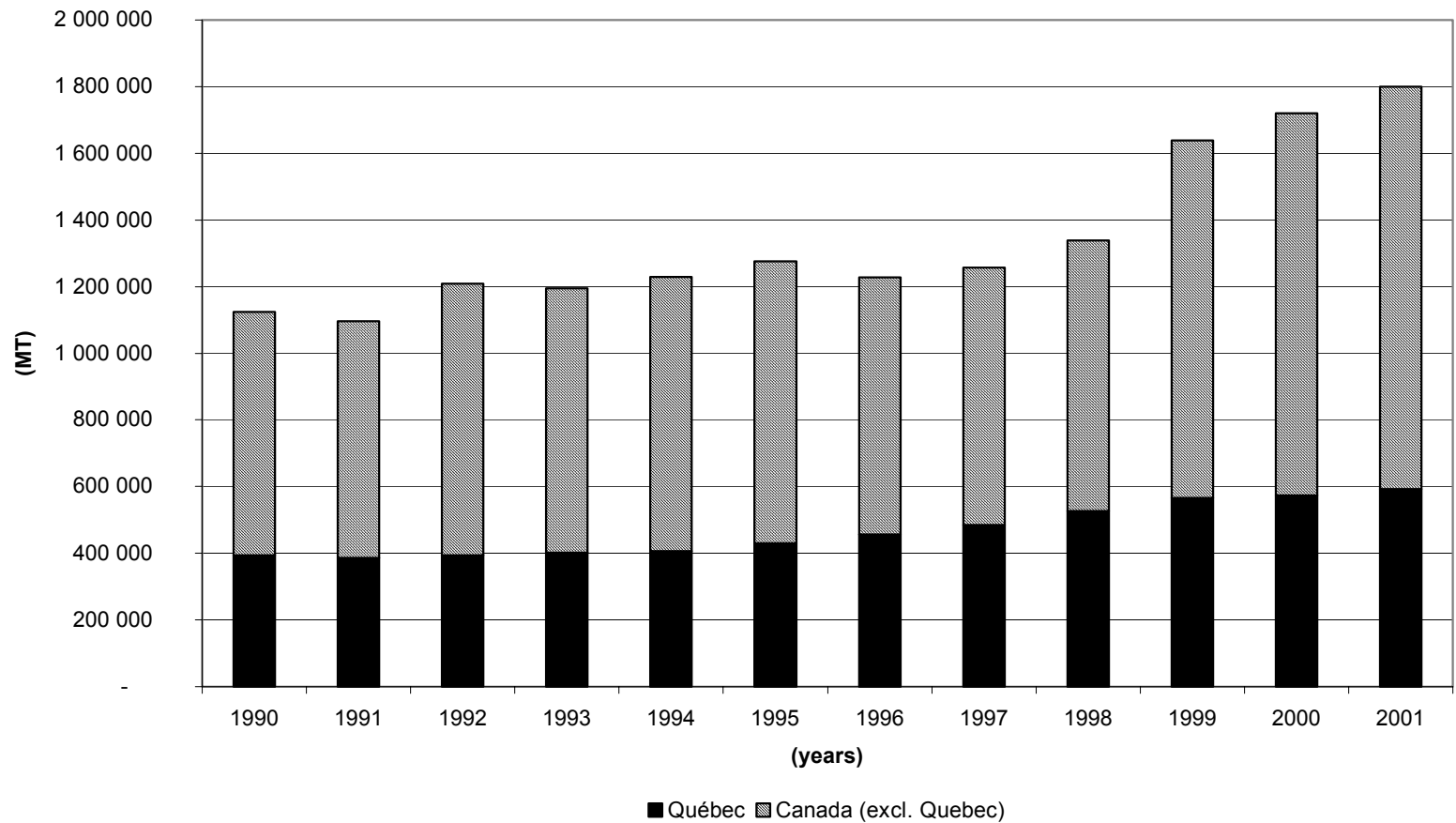
# Mexico Case

## Legal response to environmental impacts

- General Law on Ecological Balance and Environmental Protection (LGEEPA)
  - Farming wastewater discharges
- National Water Law
  - Permits and licenses for water use and discharge

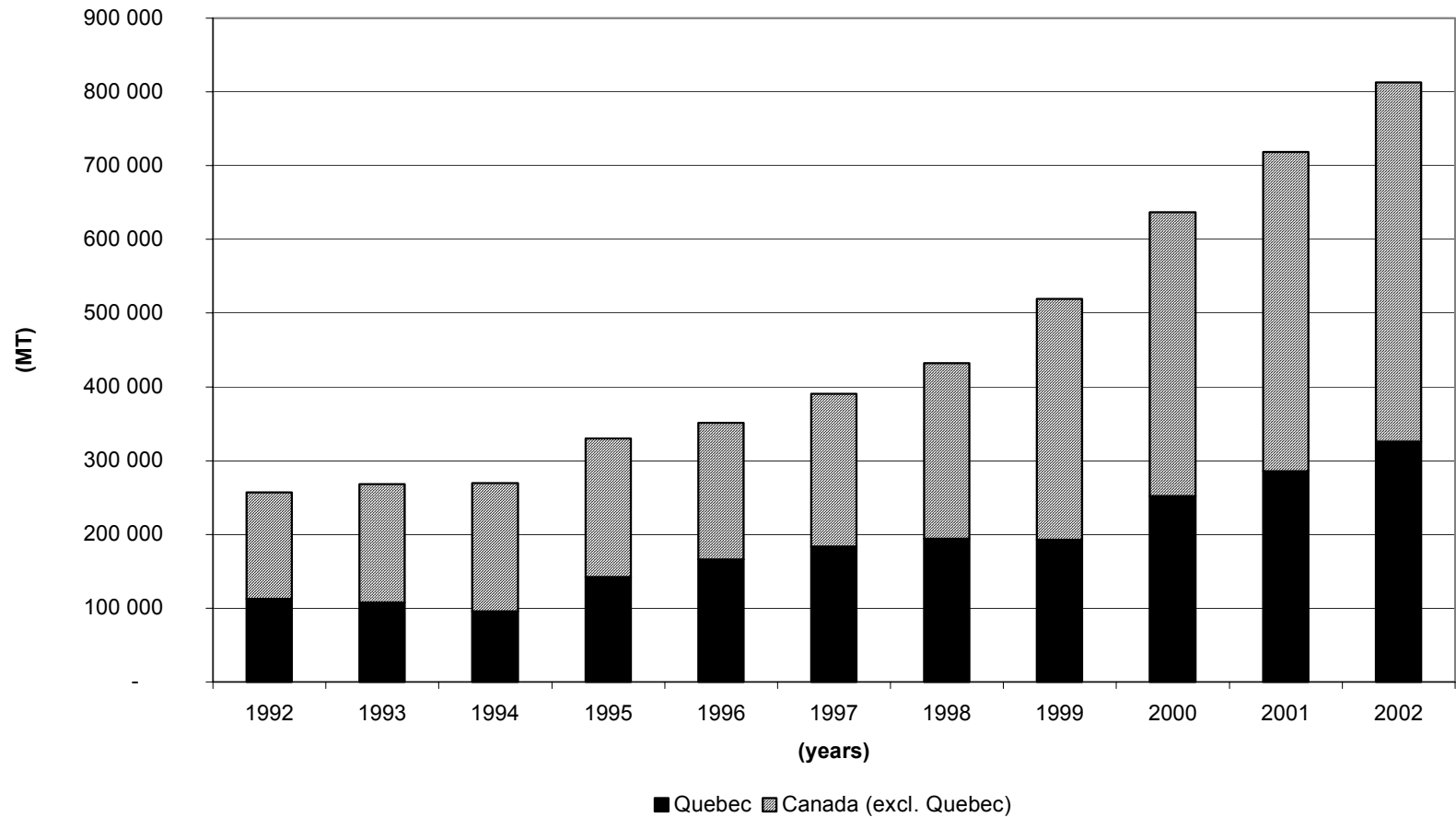
# Canada / Québec Case

Pork Production: Quebec and Canada (excl. Quebec)  
1990 - 2001  
(source: Statistics Canada)



# Canada / Québec Case

Total Pork Exports: Quebec and Canada  
1992 - 2002  
(source: Statistics Canada)

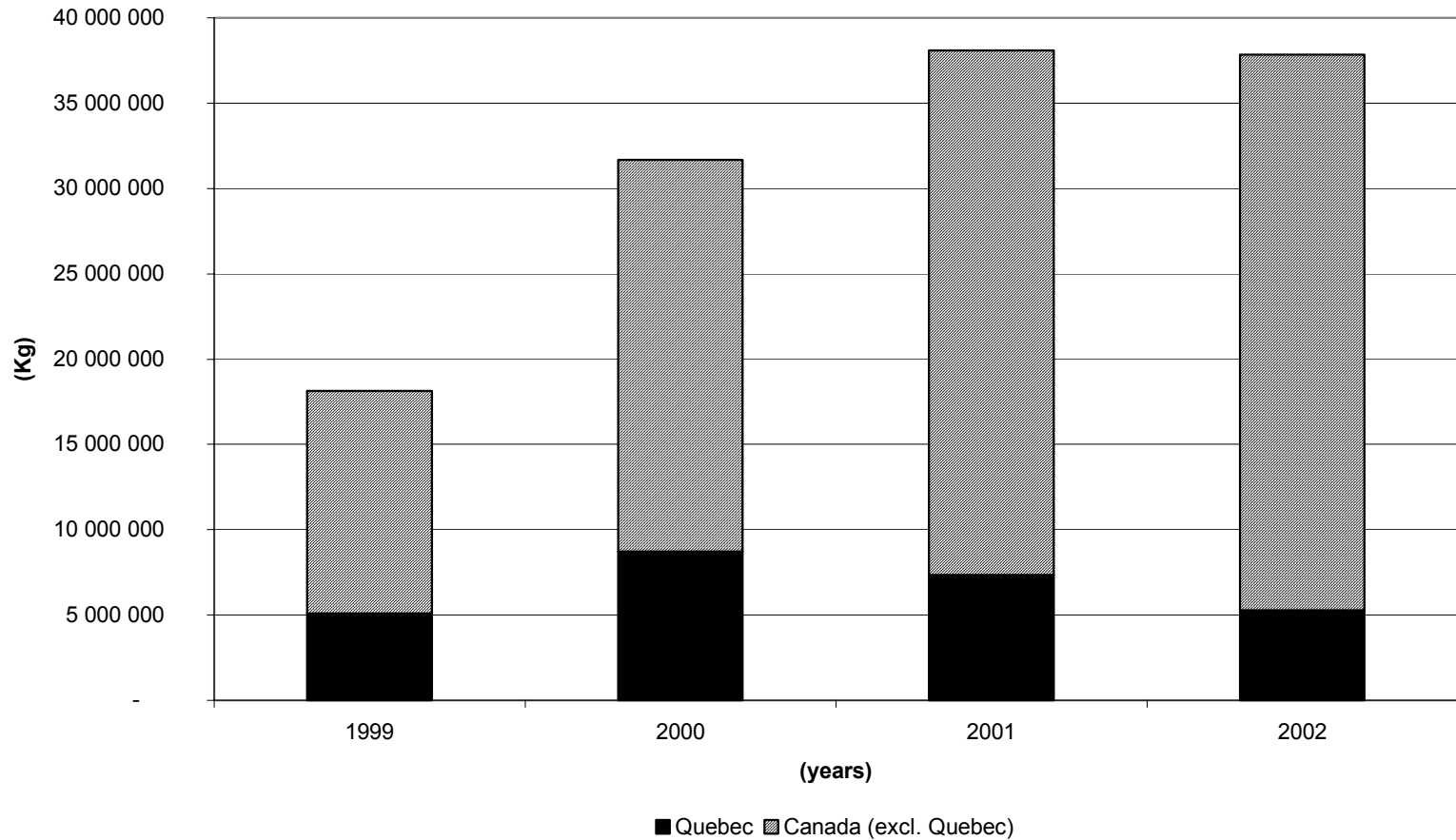


# Canada / Québec Case

## Total Pork Exports to Mexico: Quebec and Canada (excl. Quebec)

1999 - 2002

(source: Statistics Canada)



# Canada / Quebec Case

## Legal response to environmental impacts

- Environment Quality Act
- Act Respecting Land Use Planning and Development
- Agricultural Act

# Canada / Quebec Case

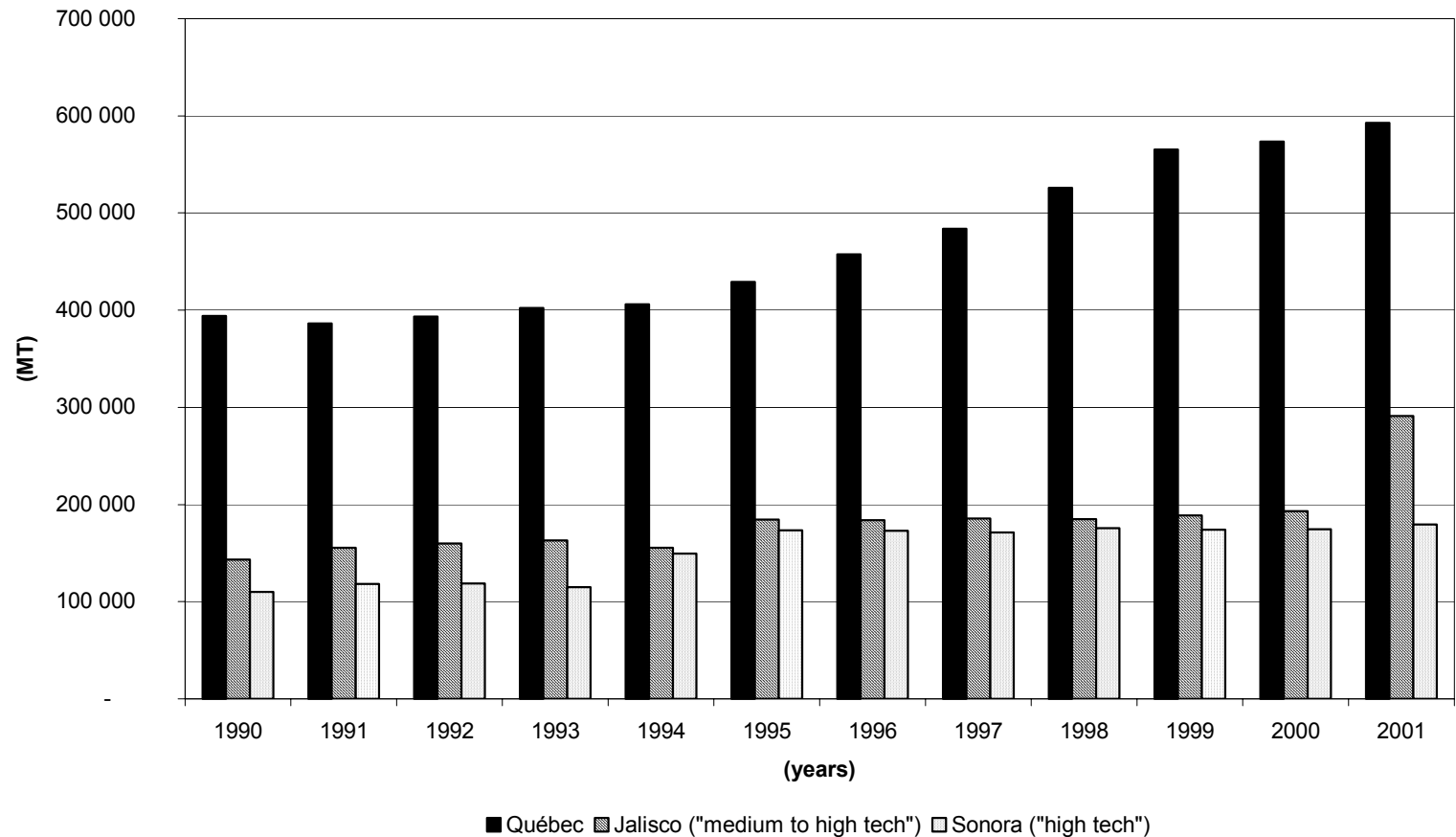
## Legal response to environmental impacts

- Moratorium on the expansion of hog production in Quebec
- Producer response to mandatory regulations
  - UPA
    - In 1997 conducted an agro-environmental census of Quebec hog producers
    - Preparation of 11 Agro-Environmental Action Plans for the Regions in Quebec
  - Canadian Pork Council
    - Development of a hog management strategy that includes a detailed framework for implementing an Environmental Management System (EMS) for hog producers

# Pork Production: Québec versus Jalisco

Pork Production in Quebec vs. Jalisco and Sonora  
1990 - 2001

(Source: SAGAR, Statistics Canada)



# Conclusions (1/2)

- In Quebec, the increase in hog production that occurred with trade (NAFTA) resulted in an expansion of mandatory regulations that tries to limit the impact of production on the environment.
- Producers responded to this situation with the development of voluntary initiatives.
- Mexico is planning to expand its hog production. One would expect that as the sector expands the amount of mandatory regulations will also expand.
- Producers will develop voluntary initiatives as the mandatory regulations constrain their behavior.



# Conclusions (2/2)

- Voluntary initiatives will be implemented when there is a strong threat of mandatory regulation.
- For voluntary initiatives to be effective, producers have to be proactive in their use of the environment.
- Voluntary initiatives can be cost effective and efficient when the appropriate incentives are given to producers.
- A mix of policy instruments, mandatory and voluntary, will be needed to address environmental concerns.