On-Farm Impacts of environmental policy – a journey through time

Prof. Nicola M. Shadbolt & Barbara Valentine
Massey University

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On-Farm Impacts of environmental policy – a journey through time

Professor Nicola M Shadbolt & Barbara Valentine
NZARES, Lincoln University, Canterbury
August 28-30th, 2013
Background

- 1994-95  Manawatu Wanganui Regional Council
- 1997-99  National Science Strategy for Sustainable Land Management Southern North Island Committee
- 1998-2008 OECD Agri-Environmental Indicators researcher & discussant - farm management indicators
- 2002-2003 Standards NZ committee for the development of National Organic Production Standards (P8410)
- 2006  Ballance Supreme Farm Environment Award
- 2010-  Board of Fonterra Cooperative
- 2011-  Dairy NZ Chair of Farm Management and Director, Centre of Excellence in Farm Business Management, Board of Directors of the International Food & Agribusiness Management Association
- 2012-  European Commission contract – co-researcher assessing farmers’ cost of compliance with legislation – env, an welfare, food safety
- Managing Editor for International Food & Agribusiness Review journal and on Editorial Board of International Journal of Agricultural Management
Overview

Society – wants, needs, fears, perceptions

Voters

Government
FTAs, trade, OECD, legislation
impacts

Perceptions of risk, stressors, motivations, behaviours
Farmers

Consumers

Commerce
CSR, QA, BP SAI, IDF
impacts

Neighbours, self & family, visitors, farmers

Society – wants, needs, fears, perceptions
Figure 1: Components and linkages in the agri-food system from farm to consumer. Source: OECD (2004b)
Farmers’ perceptions of risks from regulatory risks increased between 1992 (Martin, 1994) and 2004 (Pinochet-Chateau et al., 2005)
Farmer perceptions in 2011 put regulatory risks at 1\textsuperscript{st} and 2\textsuperscript{nd} place for negative impact in two studies (Shadbolt et al, 2013)
Stressors

One of the three most common stressors with British farmers was problems arising from compliance and the effects of new legislation and regulations. Simkin, Hawton, Fagg, & Malmberg (1998), Booth and Lloyd (1999); Deary, Willock, and McGregor (1997)

Four of the top 12 stressors for NZ farmers related to government bureaucracy

Firth et al. (2006)
OECD agri-environmental indicators

- There are multiple drivers and responses
- Difficult to separate causality from correlation
- Relationship between policy makers and farm decision makers is not straightforward
- Need to disentangle various policies and other external influences
- Farmer decision making and how it can be changed is the policy makers' challenge

Agri-environmental indicators

Key points in OECD countries | indicators and data | Publications | Related OECD work | Other related work | Contact

To help improve measurement of the environmental performance of agriculture, OECD has established a set of agri-environmental indicators, developed in co-operation with Eurostat and FAO.

These indicators inform policy makers and society on the state and trends in agri-environmental conditions, and can provide a valuable aid to policy analysis.

Key points in OECD countries

- Agriculture uses on average 36% of land and 44% of water resources, with significant effects on the environment.
- Agricultural nutrient balance surpluses - nitrogen and phosphorous - have decreased since the early 1990s.
- Pesticides sales decreased by 1.1% per year in the 2000s.
- Agricultural water withdrawals decreased by 0.5% per year in the 2000s, more rapidly than the average 0.3% yearly reduction of total freshwater withdrawals, while the total irrigated area was reduced by 0.3% per year over the same period.

Indicators and data

The times series primary database used for the OECD Compendium of Agri-environmental Indicators provides cross-country coverage on an annual basis since 1990 (where available):

- Complete database
- By theme:
  - Agricultural production
  - Agricultural land use
  - Organic farming
  - Transgenic crops
  - Nutrients
  - Pesticides
  - Energy consumption
  - Biofuels
  - Soil erosion
  - Water resources
  - Water quality
  - Ammonia
  - Greenhouse gas
  - Methyl Bromide
  - Biodiversity
OECD Compendium of Agri-environmental Indicators

This report provides the latest and most comprehensive data and analysis on the environmental performance of agriculture in OECD countries since 1990. It covers key environmental themes including soil, water, air and biodiversity and looks at recent policy developments in 34 countries.

» Read this publication online

Previous publications:
- Environmental Performance of Agriculture in OECD Countries Since 1990
- Volume 1: Concepts and Framework
- Volume 2: Issues and Design - The York Workshop
- Volume 3: Methods and Results
- Papers and proceedings from OECD workshops on agri-environmental indicators
Farm Management Capacity

• Identified as a critical aspect

• Indicators have included:
  – Ratio of agricultural advisers – number of public and private agricultural advisers trained in environmental management practices per farmer (OECD, York workshop, 1999)
  – Trends in farm income – income from agricultural activities, farm household incomes, debt/equity ratios;
  – Number and share of farmers participating in agri-environmental education programmes;
  – Number and share of farmers participating in agri-environmental groups and/or programmes;
  – Expenditures on agri-environmental management research and extension as a share of total agricultural budgetary expenditures on research and extension. (OECD, expert meeting in NZ, 2004)
Farm Management Capacity

• Is a reflection of
  – Human capital (knowledge, skills, competencies, attributes etc)
  – Social capital (shared norms, values & understanding that facilitate cooperation)
  – Cultural capital (values, history, traditions & behaviours that link a specific group)

• Current indicators do not reflect the above so do not measure wider societal influence

• Is a critical omission in Volume 4 as is THE important link between policy and agri-env. outcomes
Values and Goals

Technology

Farm financial resources
Farm management capacity
Socio-cultural issues

Environnental farm management plans
On-farm management practices
Environmental impacts of agriculture

Trade/consumers
Govt support
Govt regulations and/or penalties
Figure 1 – theory of behaviours

- Beliefs about outcomes
- Evaluation of outcomes
- Norms
- Roles
- Attitudes
- Social factors
- Intention
- Habits
- Frequency of past behaviour
- External Factors: Including market conditions, cost and policy interventions

Model adapted from Theory of Reasoned Action and Theory of Planned Behaviour
Kollmuss & Agyeman, 2010
“The central government has so far provided little statutory guidance in the form of national standards and policy statements to local authorities regarding implementation of the RMA and monitoring of environmental conditions.”

“Differences in technical capacity, knowledge, skills and issues among local authorities translate into differences in environmental management, and businesses complain that the regulatory playing field within the country is not level.”

OECD Environmental Performance Review of New Zealand 2007, p. 17 & 18
### Policy Instruments - Brouwer et al., 2000

- Legislation and regulations imposing standards *directly* on farms, for example minimum standards for animal welfare, the disposal of pesticides.
- Legislation and regulations affecting the *availability* of certain products to the producer, such as pesticides, which will have cost implications.
- Legislation and regulations, which impose obligations on farmers by affecting their practices *indirectly* (e.g. minimum standards for water quality which can be respected only by adhering to a limited range of farming activities).
- Legislation establishing *procedures* such as controls on land use, consent procedures for removing landscape features, et cetera.
- *Codes of practice*, which may be entirely voluntary (e.g. organic production), quasi legalistic or, in a few cases, binding.
- *Cross-compliance* measures which apply only to those producers receiving benefits under a public programme.
- Voluntary standards initiated by public agencies and promoted widely to producers; and
- Voluntary standards developed by processors, retailers or other downstream markets.
the linking of environmental conditions to the receipt of agricultural support payments

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<th>EU</th>
<th>JPN</th>
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NA = Not applicable; X = Low; X = Medium; XXX = High; Source: OECD (2010)
Impact of these legislations

• 1-3% increase in costs, but what about value?

• European Commission contract “Assessing farmers’ costs of compliance with EU legislation in the fields of environment, animal welfare and food safety” – includes NZ & Argentina

• Horizon Regional Council One Plan impact – DairyNZ & Massey University research

• Canterbury Regional Council – LUDF research
Corporate Social Responsibility

Health

Sustainable trade

Climate

Local

Staff
They’re not just interested in big dividends any more. They want ethically driven, environmentally concerned, ecologically sustainable big dividends.

Shareholders Meeting

UK ROGER BEALE – FINANCIAL TIMES
Corporate Social Responsibility
Examples of collaborative activity in the pre-competitive space

www.saiplatform.org
www.dairy-sustainability-initiative.org
www.idf-lca-guide.org
Thank you