Enhancing Effective Delivery of Wetland Programs

FINDING COMMON GROUND BETWEEN THE AGRICULTURAL INDUSTRY AND WETLAND POLICY

Dr. Marian Weber

Principal Researcher

InnoTech Alberta

Context

- Budgets small compared to the problems

- Environmental protection more expensive than we've often allowed for

- Spatial heterogeneity

- Prioritization is essential but difficult

What does INFFER help with?

- Getting value for money from environmental investments

- Determining what is realistic & feasible

- Selection of appropriate delivery mechanisms
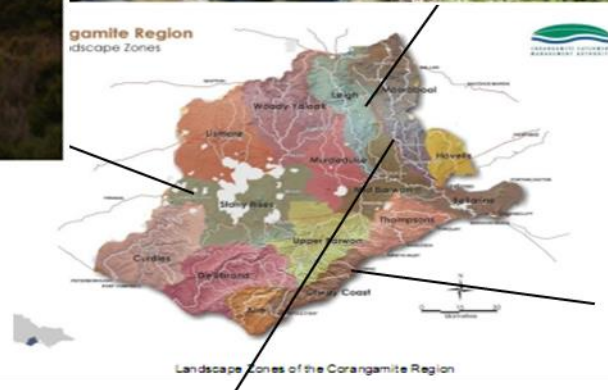
- Accountability and Business Case for Funders

http://www.inffer.com.au/

1. Define the Asset and its Significance

River reach
- Intact native veg
- Cultural heritage
- Woodland birds

Wetland
- Listed on register
- Last of its type

Threatened species
- Flagship
- Critically endangered

Native vegetation
- Concentration of threatened species
- Near pristine condition
- Important location

2. Define Project Goals/Works

S	**Specific** – what you want to achieve, for who, where and why
M	**Measurable** – Ability to evaluate whether goal is achieved
A	**Achievable** – Action plan is feasible given available information
R	**Relevant** – The goal is meaningful and aligned with mandates and objectives
T	**Time bound** – When will the goal be achieved, what are stage gates and milestones

3. Define the actions/practice change?

Livestock Beneficial Management Practices

- Manure and Nutrient Management
- Surface Water Quality Management
- Wintering Site Management
- Pasture Management

4. Rank Projects – Benefit: Cost Index

$$V \times W$$

V: asset value
W: effectiveness of works

$$A \times B$$

A: adoption
B: compliance

$$F \times P \times G$$

F: feasibility
P: socio-political
G: long-term funding

$$1/(1 + r)^L$$

L: time lag to benefits
r: discount rate

$$BCI = \frac{\text{Potential project benefits} \times \text{E(prop'n of required adoption)} \times (1 - \text{Risk of failure}) \times \text{Discount factor for time lags}}{\text{Project cost}}$$

$$C + PV(M)$$

C: project cost
M: annual maintenance cost
PV: summed present value over 20 years

5. Select Interventions

Private Public Benefits Framework

1. No positive incentives for land-use change unless public net benefits of change are positive.

2. No positive incentives if landholders would adopt land-use changes without those incentives.

3. No positive incentives if overall costs outweigh benefits.


Pannell, D.J. (2008). Public benefits, private benefits, and policy intervention for land-use change for environmental benefits, *Land Economics* 84(2), 225-240.
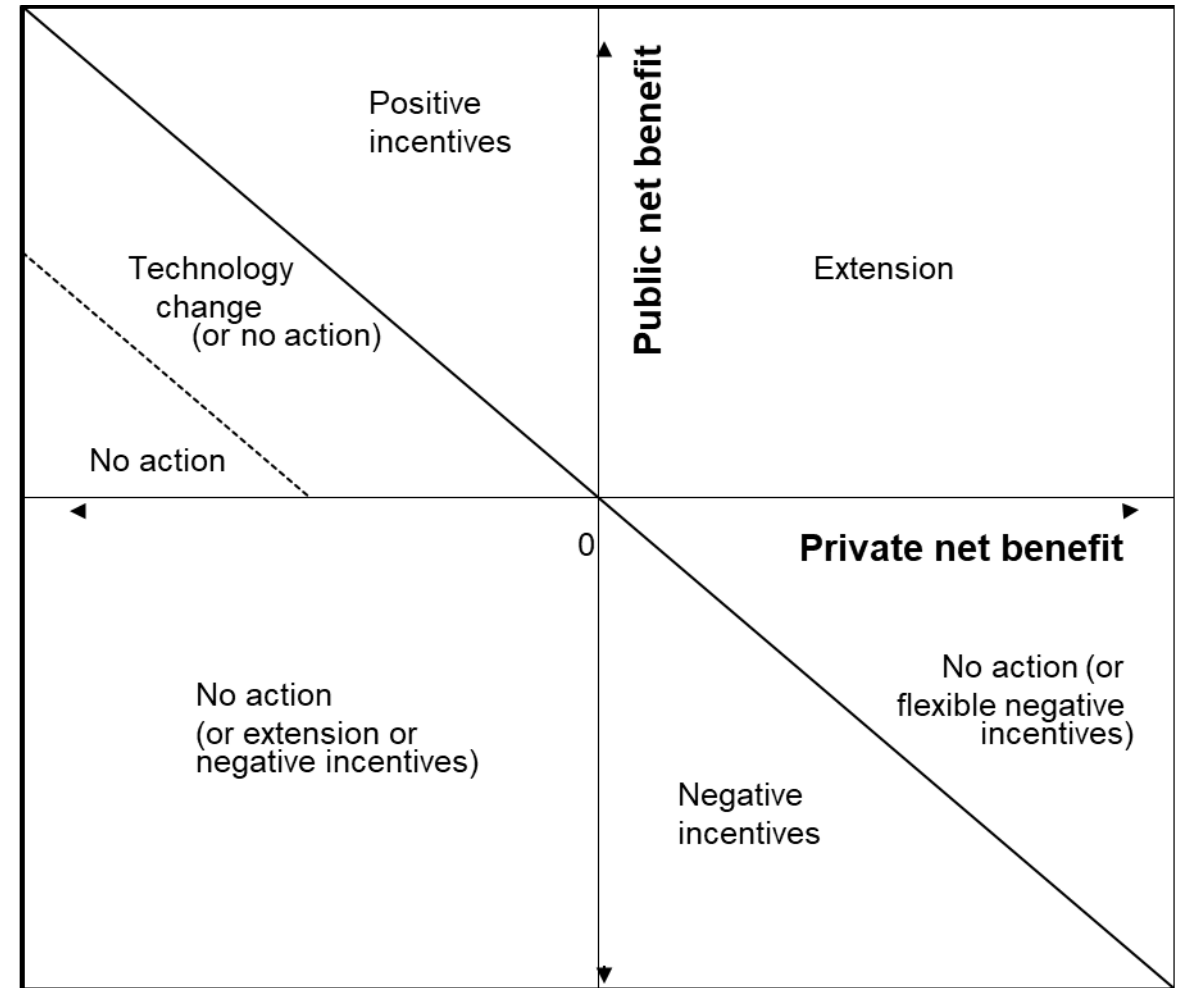
Feasibility of Practice Change

Behavioral Beliefs	Normative Beliefs	Control Beliefs
Profitability • Agronomic benefits and barriers • Market context	**Profit Motive** • Entrepreneurship • Growth	**Financial Capacity** • Debt • Off-Farm Income • Insurance and program barriers
Practice Efficacy • I am doing enough • Practice won't work/make a difference	**Environmental/Ethical Motive** • Awareness and care about environment and climate change • Impact of practices on others	**Extension** • Neighbor Practices • Past Participation • Market context
On-Farm Impact of Practice • Improves Animal Health, Yield, Family Health	**Stewardship Motive** • Care for land • Care for future generations	**Technology Barriers** • Access to specialized equipment • Access to proper varietals
Trialability & Risk • Complexity • Time to benefit	**Social/Market Context** • Advice channels, cultural and Symbolic Capital	

Background Factors: Age, Gender, Education, Tenure, Farm Size, Region, Farm Type, Soils, Income, Etc.

Figure 1 Schematic of the Reasoned Action Model, adapted from Fishbein & Ajzen (2010) and Jorgensen & Martin (2015).

Targeting Practice Change
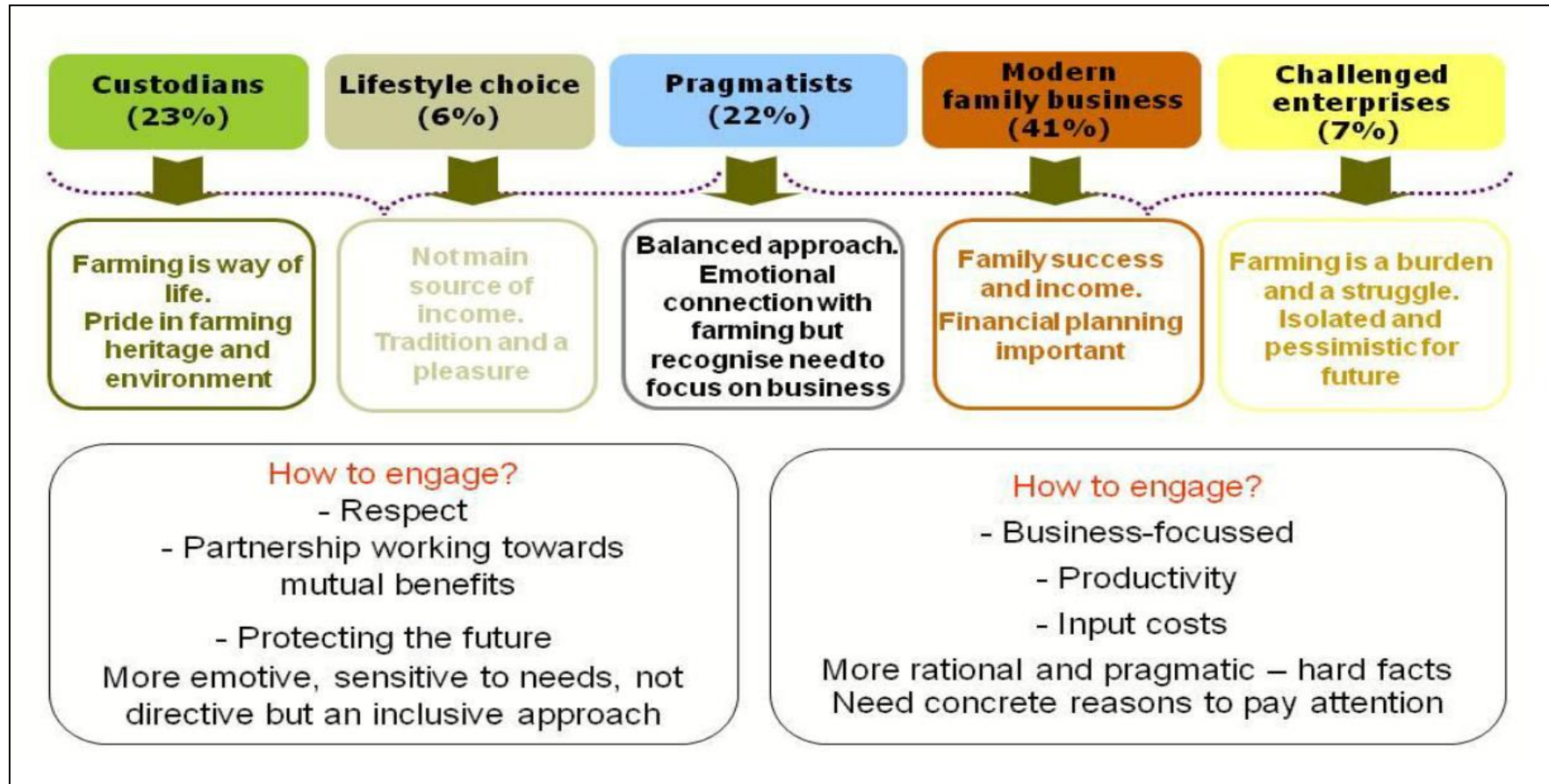
DEFRA farmer segmentation model (Pike 2008)

Targeting Practice Change

Label	Style	Symbolic Capital	Information Channels	Recommended Approach
Older/Traditional	Poor knowledge of impacts Use traditional technologies Low economic capacity May rely on off-farm income		Family and other farmers Social networks	Peer-peer learning Local organizations with farmers from the community
Older/Innovative	Early adopters and experimenters	Passion for farming Soil health Animal Care		Demonstration farms and peer-peer experimentation Discussion groups focused on their passion
Young innovators	Young family farmers Weak ties to traditional farming	Change and restructure Positive attitude towards nature conservation	Consumer groups and conservation authorities	Willing to engage in advisory groups

Targeting Practice Change

Label	Style	Symbolic Capital	Information Channels	Recommended Approach
Agro-business	Large Low margins High intensity Policy aware	Professional attitude Growth Optimization Use of technology	Agronomic advisory systems Commercial consultants	Industry channels Business breakfasts Short seminars
Reclusive	Involuntary farmers Farm marginal	Low motivation	Family members Vets, commercial feed or fertiliser representatives	One-one advice from trusted local source Raise awareness with family
Part-time	Lifestyle choice Unaware of policies		Not engaged	Needs help identifying information Provide direct assistance

Key Messages

- Wetland Drainage is Legal.

- Lessons from INFFER

  - Are goals for wetlands clear? SMART? Relevant? Motivating?

- Motivation is a Prerequisite for retention and restoration

  - Triage adopters, potential adopters, non-adopters

  - Focus on efficacy and benefits (on-farm) as well as capacity

  - Segmentation to identify barriers and attitudinal factors

Thank you
Questions?