Land Use Policy 42 (2015) 718–728

Contents lists available at ScienceDirect

Land Use Policy

journal homepage: www.elsevier.com/locate/landusepol

Investigating stakeholder reactions to a bold salinity policy using a choice experiment

Jonelle A. Cleland, Abbie A. Rogers*, Michael P. Burton

Centre for Environmental Economics and Policy, M089, School of Agricultural and Resource Economics, University of Western Australia, 35 Stirling Hwy, Crawley, WA 6009, Australia

ARTICLE INFO

Article history:
Received 3 February 2014
Received in revised form 1 October 2014
Accepted 10 October 2014

Keywords:
Choice experiment
Dryland salinity
Policy
Targeted investment
Trade-offs

ABSTRACT

As a statement of policy, the Western Australian Salinity Investment Framework focuses attention on the benefits and costs of outcomes from the abatement of dryland salinity. Policy implementation would result in funds being spent unevenly across the landscape according to the value of assets protected, as well as the costs and effectiveness of treatments. This study used a choice experiment to investigate the reaction of rural stakeholders to the economic principles embodied in the Salinity Investment Framework. The results indicate that what matters is the type of assets protected, the risk of failure and the level of community involvement in the decision-making process; not the distribution of benefits. The results imply that the success of the Salinity Investment Framework, or other prioritised systems of resource management, in terms of community acceptance, does not necessarily rest upon distributional issues, and that other factors play a more crucial role. Policy makers could take this as a signal for the wider acceptance of decision frameworks that promote targeted investment according to public benefit.

Introduction

Salinity remains a significant problem that severely impacts on agricultural productivity, biodiversity conservation, water supply and infrastructure assets in Western Australia (WA) (National Land and Water Resources Audit, 2001; Wallace et al., 2011). The WA Salinity Investment Framework (SIF) was endorsed WA government policy in 2002. It offers a set of principles for prioritising investment decisions that are largely grounded in economic theory (WA State Government, 2002). Foremost, the SIF takes an asset approach, recommending investment in assets that generate the *greatest public benefits per dollar of public investment*. Thus, the intention of the SIF is to target investment, with limited funds spent unevenly across the agricultural regions of WA.

At the time, endorsing the SIF was a bold move on the part of the State Government with the potential to create tension between the State Government and its major funding partner, the Australian Government. By discouraging uniform patterns of investment in salinity remediation the State Government rejected the underlying logic of national programs (e.g. Landcare, Natural Heritage Trust, National Action Plan for Salinity and Water Quality) which focused on achieving change across the entire landscape by supporting the voluntary actions of landholders and community groups (Curtis and Lockwood, 2000).

The State Government also faced the possibility of political fall-out amongst its rural constituents, with the SIF potentially threatening devolved governance and funding structures put in place from the mid-1990s (Brown, 2005). Most notably, regional bodies set their own priorities for investment, with funding tied to requirements set out by the Australian Government. In the environment portfolios, assessments of feasibility and analysis of costs versus benefits were not a precursor to the release of funds.

In turn, program managers have attempted to preserve the political palatability of large investments in natural resource management (NRM) by establishing the perception that funds are distributed equitably (Wallace et al., 2011). As such, key NRM programs have focused, to varying degrees, on (1) building vertical and horizontal partnerships to disburse funds; (2) encouraging broad landholder participation; and (3) building social capacity by including groups marginalised by government decision making in the past, such as women and indigenous peoples.

With the above factors in mind, the implementation of the SIF could be contested by stakeholders on the grounds that it clearly alters the established decision framework for investing in salinity management, with a major issue being that it reduces emphasis on the equitable distribution of funds. Alternatively, the adoption of a

* Corresponding author. Tel.: +61 (0)8 64887868; fax: +61 (0)8 64881098.
E-mail address: abbie.rogers@uwa.edu.au (A.A. Rogers).

http://dx.doi.org/10.1016/j.landusepol.2014.10.010
0264-8377/

decision framework, grounded in economic principles, may appeal to those seeking ways to realise better returns on funds invested and effort expended.

It is likely that the WA State Government anticipated some resistance, or perhaps teething problems with the SIF: they intended the policy to be implemented in stages, with a resourced opportunity to ground-truth the investment framework within the Avon NRM region, prior to it being rolled-out across the remaining WA NRM regions. In a research context, this presented an opportunity to evaluate pre-policy processes, observe policy on the run and test stakeholder reactions to the investment principles embodied in the SIF, as well as their reaction to its implied outcomes (Cleland, 2008).

This paper focuses on an investigation, undertaken prior to the SIF implementation, of public reaction to the implied outcomes of alternative policy designs. Using a hypothetical choice experiment administered across the Avon NRM Region in 2003–2004 we provide a quantitative assessment of the preferences of stakeholders, and the trade-offs they were willing to make, for key elements of the SIF. This will help to identify opportunities and barriers for the wider application of decision frameworks grounded in an 'economic way of thinking'.

Rationale for the choice experiment design

The SIF is formulated in terms of trade-offs to be made over policy *outcomes* (e.g. outcomes arising from investment in biodiversity versus rural infrastructure). However, outcomes may be viewed as more, or less, acceptable because of the characteristics of the decision *process* (e.g. Johnston and Duke, 2007; Rogers, 2013). Features of the decision process that can influence the acceptability of the outcome may include the level of trust in decision makers, degree of transparency, provision of effective opportunities for participation and whether there is a mechanism for challenge and dispute resolution (Daniels, 2000). The choice experiment methodology provides a mechanism to explore the tradeoffs between elements of a policy design, albeit in a hypothetical context. Understanding the public's reaction to the SIF, in terms of both policy outcomes and the features of the decision process offers greater insights for the real-life application of the policy.

Elements relating to both outcome and process can be incorporated into a choice experiment through the careful specification of policy attributes. In light of past decisions and policy positions, we hypothesised that four elements of the SIF would be central when people make judgements about the acceptability of a policy design, and that these elements should underlie the choice experiment design. The four elements were:

1. The type of assets protected (e.g. biodiversity, productive land, public infrastructure);
2. The distribution of benefits;
3. The level of community involvement in the decision process; and
4. The risk of failure.

The SIF makes it clear that the top priority public investments are those which generate the greatest public benefits per dollar of public investment. Thus, on (1) protection of a particular type of asset will depend on the value of the asset, the cost of preventative treatments and the effectiveness of treatments (WA State Government, 2002). Large areas of farm land will not be a priority for public investment. However, the SIF states that 'where there are extensive private assets at risk, but the public priority is low, public investment should be aimed at industry development' (WA State Government, 2002). Despite the reassurance that landholders would not be left out in the cold, some stakeholders perceived that the SIF was a convenient way for government to withdraw support for landholders who were dealing with salinity (Cleland, 2008).

On (2) the SIF is clear on the economic rationale for, and implications of, unequal investment. However, the question of where prioritised salinity investment should end and access to equitable compensation should begin is not outlined. Indeed, some stakeholders were alarmed that the application of the SIF would result in 'winners' and 'losers' and were concerned that their sub-region or locality would completely miss out on funding (Cleland, 2008).

On (3) Syme et al. (1999) argue that the provision for community involvement in decision making is a significant determinant of judgements of fairness for the Australian community. Community involvement is implied in the SIF policy statement, with 'communities and government agencies working together in a transparent and participative process' (WA State Government, 2002). However, some stakeholders raised concerns that they were not being adequately engaged and that the SIF was a top-down policy directive (Cleland, 2008).

On (4) the SIF places a strong emphasis on investing only where there is a high probability of success (WA State Government, 2002). Here, the reaction of rural stakeholders may be mixed. On one hand, it may resonate with those who are disenchanted by the lack of results from past investments (Curtis and Lefroy, 2010). Alternatively, landholders faced with serious salinity problems and limited options may have a sense of urgency to take action and accept associated risks, particularly in terms of providing an opportunity for innovation (Botterill and Mazur, 2004).

The first two elements discussed above are clearly 'outcomes' of the policy, whilst the third element is a policy 'process'. Whether the fourth element, risk of failure, is an outcome or process element depends upon the way it is framed. In terms of outcomes, risk can be simply conceived as the chance that the return on an investment will be different than expected, but is likely to be underpinned by technical factors. In terms of process, risk would capture the pivotal role of socio-political and perceptual factors. The SIF brings the outcome component of risk to the forefront, explicitly noting treatment effectiveness as a criterion for determining the top priority public investments.

The Avon NRM region covers a total area of 117,700 km^2. Almost 63 per cent has been released for agriculture and associated land uses; it has a population of over 41,000; and more than 6 per cent is reserved for nature conservation purposes with over 50,000 remnants of native vegetation on private land (Australian Government, 2011). Over the period 2002–2009 the Avon Catchment Council (the body responsible for implementing on-ground actions at that time) received over $36m in National Action Plan for Salinity and Water Quality and Natural Heritage Trust Program funds (Government of Western Australia, 2010). Given the importance of agriculture, the amount of funding that was being committed to the area and its use as a test bed for the SIF policy, the region provided an ideal location for exploring preferences for agri-environmental policy design.

The remainder of this paper describes the choice experiment designed to understand the preferences that rural stakeholders hold for the SIF, with the central hypothesis that the type of assets, distribution of benefits, level of community involvement, and risk of failure matter.

Survey design and sampling

Attribute selection

Attributes were selected to address the four elements expected to explain individuals' preferences for the SIF (see "Rationale for the choice experiment design" section). It is important to keep in mind that we wanted respondents to evaluate the choice scenarios