

## Information for environment decision-making

The 2001 Nobel Prize in economic sciences was awarded to George Akerlof, Michael Spence and Joseph Stiglitz for their work during the preceding 30 years on 'analyses of markets with asymmetric information'. Their work covers a diverse range of issues including adverse selection, signalling theory, and the screening of participants in markets <http://nobelprize.org/> Environment practitioners are likely to find plenty to agree with in Joseph Stiglitz's Nobel acceptance speech, particularly his comment that ... "Information imperfections are pervasive in the economy: indeed it is hard to imagine what a world of perfect information would be like." Stiglitz, 2002, p.469. In his speech he expounded his view that a paradigm change had occurred in economics and there was widespread recognition of the ways information effects behaviour and decision-making.

EIANZ in 2007 released a blueprint for environmental practitioners entitled 'Meeting the Challenges of the Future'. Three sets of actions were listed as forming the basis for the Blueprint, including – 'Improve the communication of information about the environment'. This would not have surprised many EIANZ members as information is a fundamental requirement to enable good decisions on any issue, and better communication of information is essential for informed debate.

Strenuous efforts are often applied to generating and assembling information to enable or support decision making. In New Zealand EIA studies, s.32 reports, s42 assessment of environmental effects and doubtless many other reports are completed to aid decision making. These major efforts to generate information by highly skilled professionals undoubtedly aid decision-makers, but provide no assurance that decisions reached are beyond criticism. I suggest there are a couple of reasons why despite those lengthy, costly efforts, environmental outcomes may be less than perfect. Current debate over water allocation and use can be considered to illustrate the point.

A recent workshop debated if there is a need for a central clearing house for information on water. At least one person commented that it is important to distinguish between data, information and uptake of information. Data and information on water quantity, quality and use, it was asserted, is not lacking. Arguably there is also plenty of public interest in making use of the data and information that is available and communicated via various media. If those views are correct, then explanation for the widespread debate over water allocation and its use must be sought elsewhere. An alternative explanation is there is a paucity of information on the value of water in alternative uses, and this vacuum allows poorly informed comment to thrive. Markets for water are as yet embryonic in New Zealand. Individuals or firms who wish to purchase water rights in most case have to purchase a farm. Prices - a versatile indicator of value, are rarely visible to observers, who include environmental professionals. In the absence of information on the value of water that employs a common metric such as dollars, or of water prices, decision making on water allocation seems an unenviably challenging task, and public debate unsurprisingly contentious.

Decision makers on water allocation can of course request information on the value of water, and as noted earlier, strenuous efforts are applied to that end. However, generating useful information requires first asking the right questions. If the issue is how to allocate water in a way that assures us net benefits to society are maximised, information is needed on the benefits that can be gained from alternative potential uses of water. If there are competing uses for water – for instream habitat, recreation, hydro power, irrigation, municipal, stock water – then use of water for any of those purposes has an opportunity cost. First in first served allocation processes coupled with absence of any charges for use of water negate concern over opportunity cost. Decision making processes that are not alerted to opportunity cost are likely to gain a false impression of the net benefits to be derived from a specific use of water.

Greater use of water markets would mean more information would be available on the value of water in some uses and would contribute to better informed debate. Greater recognition of the importance of opportunity cost would assist decision makers who have to wrestle with water allocation decisions.

**References**

Stiglitz, J. 2002. Information and change in the paradigm of economics. *American Economic Review*, 92(3), pp. 460-501.