



# A FULLER PICTURE FOR COUNTING COSTS AND BENEFITS

Economics has traditionally struggled to account for non-financial factors in cost-benefit analyses. But work by WSU researchers is finally helping those considerations to be included.

## Contemporary understanding of economics

is greatly devolved from its beginnings in ancient Greece as *oikonomia*, the management of the family or household. But, research by WSU economists Dr Kathy Tannous and Dr Neil Perry, shows that comprehensive study of the costs and benefits of our actions can be used to persuade decision-makers of the value of protecting what is priceless: the health and safety of families, communities and our shared 'household', the environment.

## INVESTING IN FIRE PREVENTION

Each year in New South Wales more than 4,000 residential fires break out, killing around 21 people, injuring 500, and incurring health and property costs of \$650 million. Despite 2005 legislation making smoke alarms mandatory in all buildings

in which people sleep, many fires kill people in houses without an operational smoke alarm.

In 2014, Fire and Rescue NSW (FRNSW) piloted the Home Fire Safety Check (HFSC) programme. This sees firefighters visit homes to check that they have a functioning smoke alarm, inspect the home and provide an assessment of fire risk, and teach residents about home fire safety.

Dr Tannous assessed the cost-effectiveness of the HFSC programme and showed that for every dollar spent on the program, \$12 in health and property costs were saved.

**“FOR EVERY DOLLAR SPENT ON THE PROGRAM, \$12 IN HEALTH AND PROPERTY COSTS WERE SAVED”**

This economic evaluation has been instrumental in providing a strong business case for continued funding and the programme's expansion, says FRNSW behavioural insights analyst, Susan Broomhall. It's also helping to change the way firefighters think about their role within their communities.

“Firefighters love helping people, but they have been historically reactive,” Broomhall says. Tannous' independent assessment of the proactive HFSC programme has been critical to its acceptance by FRNSW staff, Broomhall says.

It was vital to show firefighters that the cost and commitment



were worth it, says Tannous, who accompanied firefighters on many of the HFSC deployments. “The firefighters are going to be pounding the streets, knocking on doors in order to check there's a working smoke alarm and to provide all this information and material, and we had to demonstrate that it's worth doing,” she says.

Tannous' study has changed how FRNSW incorporates

research, analysis and planning into its work on fire prevention. FRNSW overlaid data on fire incidence with information about lifestyle choices to identify members of the community most at risk from house fires. This allowed FRNSW to maximise the effectiveness of home visits by focusing on people that were less likely to respond to other forms of fire safety

## NEED TO KNOW

- WSU economic research is better incorporating difficult concepts into cost-benefit analyses
- Firefighters found there was a 12-fold return on investing in fire prevention
- A coal mine expansion was halted when social and environmental impacts were costed

education, such as newspaper or radio advertisements.

Tannous' evaluation of the delivery of the HFSC programme has helped FRNSW tailor it to meet the cultural needs of indigenous and migrant communities.

Broomhall says the HFSC program has become a flagship for FRNSW.

"It's so important to be able to elevate the importance of prevention and education, not only within the organisation, but externally to places like Treasury," she says. "Having an academic, independent piece of research to validate the programme just transforms it to a different level."

## INFLUENCING DECISIONS

WSU economic research also played a role in factoring the environment into economic calculations. Many argue that nature is beyond monetary value, and economic theory should be kept out of any environmental decisions.

But, Dr Neil Perry points out that economic considerations already drive most decisions pertaining to the environment. Perry's research seeks to better

incorporate the concepts of ecology and conservation biology into the same cost-benefit analyses that are used to justify development proposals. His work has gone on to influence major planning decisions affecting Australia.

## "ECONOMIC CONSIDERATIONS ALREADY DRIVE MOST DECISIONS PERTAINING TO THE ENVIRONMENT"

"We've got to try to represent the environment better and point out the economic values that are derived from it," he says.

Development decisions often revolve around trade-offs that seem impossible to meaningfully compare. Is the ecological value of native vegetation worth more than the economic value of a farm crop? The economic consideration of environmental values has traditionally been quite superficial, says Megan Kessler, scientific director of the Environmental

Defenders Office New South Wales (EDO NSW), a community legal centre specialising in public interest environmental law. The EDO NSW relies on advice from experts like Perry to ensure their comments on government reform are informed by the best available science.

In 2016, Perry's advice to EDO NSW contributed to the NSW Planning Assessment Commission's rejection of a proposal to expand the Russell Vale Colliery. Perry and EDO NSW argued the cost-benefit analysis for its expansion failed to properly account for the social and environmental impacts on the local community.

Perry's advice has also been pivotal to EDO NSW's arguments against the NSW government's controversial reforms of the state's biodiversity laws. Under legislation proposed in 2016, a land owner who wanted to clear vegetation could choose to pay into a biodiversity conservation fund instead of improving the environmental condition of another part of their property.

Perry and EDO NSW argued that this 'calculator'

approach was both conceptually and economically flawed. Simply paying money into a fund will not prevent the local loss of biodiversity, Perry says, and the calculated price a land owner would pay did not represent the true cost of land clearing.

Despite the significant concerns raised by EDO NSW in its submissions, the NSW government implemented the new Biodiversity Conservation Act 2016 and the offsets payment calculator in August 2017.

This setback was countered by the growing traction of Perry's argument that there are better ways to represent the true economic value of the environment. Perry's articles in the media have generated interest and debate and he regularly briefs environmental interest groups on his research.

"If you are going to go down the path of monetising the environment, you need to make sure that you're actually considering all features of the environment and the risks associated with doing that," says the EDO's Kessler. ■



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