

Conflicts and Trade-offs in Sustainable Solutions

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Positive environmental outcome 1 vs Positive environmental outcome 2:

1. How do we choose?
2. Should we have to choose ?
3. Can the scientists help ?
4. Is the science/policy interface working well ?

Examples:

1. Free-flowing rivers vs hydroelectricity
2. Unspoiled landscapes vs windfarms
3. Nuclear-free status vs CO2-neutral electricity
4. Orangutans vs bio-diesel
5. Clean air vs woodburners



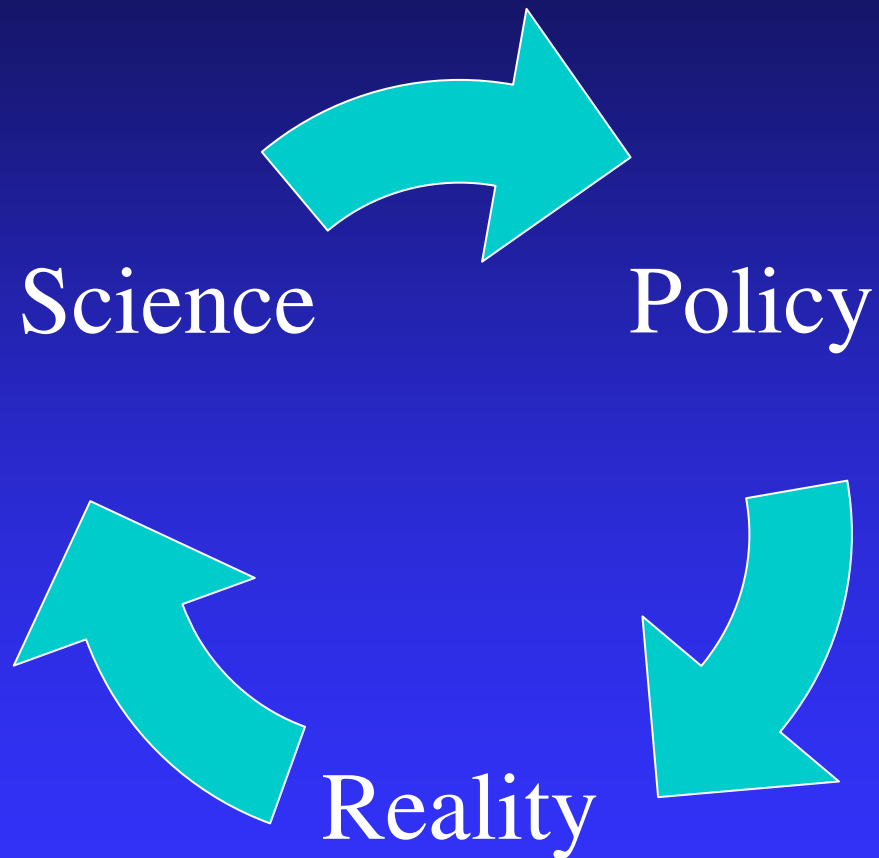
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Photo Courtesy Mike Durand, TDC

The link between science and policy ...



Scientists have advised us:

- ambient particulate concentrations up to 250 ug/m³
- health effects of this exposure
- emissions of approx 10 tonnes PM10/night
- 90% of that from domestic woodburning



Science	Policy	Reaction
Domestic woodburning causing adverse health effects	Need to remove woodburners	Fears of elderly dying of cold ... increase in cold-related diseases ... Financial hardship ...

Back to the scientists ...

Total PM10 emissions per night =
g/kg x kg fuel/night x no. of burners

So, we need

- Cleaner burners
- More efficient burners
- Less of them ...

Policy response:

Clean burners: 1.5 vs 1.0 vs 0.7 g/kg

Less fuel: 65% space heating efficiency

Less burners: Subsidised replacement scheme for older woodburners

Reaction:

In Christchurch, a move away from older woodburners and open fires to approved woodburners, pellet burners, and heat pumps

Cleaner air

Global warming

The solution – a cleaner woodburner ?

Need to control:

- fuel quality,
- fuel loading,
- air supply

Some possibilities ...

- pellet burners ?
- automated controls on air supply ?
- plus external heat sources ?
- 100% filtration ?



“Regulation is the mother of
invention ...”