Questions On Notice – 8th February 2013

Senate Committee Hearing - Senate Standing Committees on Environment and Communications – Environment Protection and Biodiversity Conservation Amendment (Retaining Federal Approval Powers) Bill 2012

Question 1: What is the relationship between protection of matters of national environmental significance and matters of state and local significance?

Asked by Senator McKenzie

The EPBC Act is designed to provide some level of Federal oversight where nationally and internationally important flora, fauna, ecological communities are at risk. Just how do we distinguish between matters of national and international environmental significance and matters of significance at a local and state level is a seemingly difficult question.

However, the answer is relatively straightforward and can be looked at from two angles.

1. Is national or international welfare affected?

The significance threshold occurs when national or international welfare is affected by any change in environmental values. Put another way, national or international welfare is not particularly affected by impacts that relate only to local environmental aspects, without affecting landscapes, populations, ecosystems etc. that are found in some abundance elsewhere. Put simply, national welfare is affected if what is being impacted has little substitute or similarity elsewhere.

2. Does the issue relate to a nationally identified environmental issue?

Secondly, the significance threshold should be trigged when the local impacts are related to issues identified as of national significance. Two key reports in Australia outline the environmental issues facing our country.

The Australian Bureau of Statistics publication, Australia's Environment Issues and Trends (2010) [4613.0] and the State of the Environment report published by the DSEWPC. The major issues raised in both reports of significance to Australia, include:

Australia's Environment Issues and Trends (2010)	**State of the Environment Report (2011)**
• Human activities (energy and waste) • Atmosphere (greenhouse gases, climate change and air quality. • Water (consumption, conservation, management, marine and coasts) • Landscape (land, forests, biodiversity)	• Climate change. • Ambient air quality and other atmospheric issues. • Inland water use. • Land and land-use change. • The Marine environment. • Biodiversity.

	• Heritage. • The Built Environment. • Coastlines. •

Looking at these issues highlighted as of national significance, we can see that issues at a local level often mirror these concerns. To provide an example, we will use the case of the Maules Creek and Boggabri coal projects, proposed coal mines in New South Wales for which we reviewed the economic assessment. The local community raised concerns that the economic assessment of the mines failed to consider:

1. Emissions of greenhouse gasses from the combustion of the coal overseas.
2. Local and state health impacts due to coal particulates (reduced air quality).
3. Land clearing (reduction in stored carbon).
4. Forest clearance.
5. Reduction of habitat (biodiversity).
6. Groundwater impacts.

Issue 2 is arguably only a local and state issue where any healthcare costs are borne by the state. Although it could be argued that this too has national impacts.

However, issues 1,3,4 and 5 are clearly issues that relate to broader national and indeed international environmental issues.

I think the decision regarding referral to the EPBC Act for federal approval needs consider the two issues discussed above, to repeat:

1. Is national or international welfare affected?
2. Does the issue relate to a nationally identified environmental issue?

Question 2: How might you value the costs of reduced environmental oversight that might result from handing further approval power to the states; or conversely, how can you value the benefits of the EPBC Act in its current form.

Asked by Senator Waters

In economic literature, a number of techniques exist to estimate values that may not have a market value. These estimates generally rely on finding a suitable 'proxy' for the value. A variety of these techniques could be used, in theory, to value the benefits of the EPBC Act and the potential costs of any streamlining of approvals that led to reduced environmental outcomes.

Some preliminary concepts

Before discussing methods of valuation, it is important to consider some preliminary concepts related to the question. The first is the concept of a 'counterfactual scenario', the second is the issue of 'incentive asymmetry and marginality' and the final relates to 'risks to future generations'. These concepts are closely related to the idea in economics known as the tragedy of the commons. This idea states that individuals acting in their own self-interest may deplete communal resources for reasons explained below. I raise this point because while techniques exist in economics to estimate the value of environmental costs and benefits, these values may go ignored due to the political economy. This is of critical importance to the debate about proposed amendments to the EPBC Act.

1. Counterfactual scenarios

One key issue with this sort of analysis is to establish a 'counterfactual scenario'. I will provide an example each for the benefits of the EPBC Act and the costs of reduced environmental outcomes.

1. To estimate the benefits of the EPBC Act, we would need to establish in what state the environment would now be had it not been for the EPBC Act. This would require project level assessment of approval conditions.
2. To estimate the costs of reduced environmental outcomes if federal oversight is weakened, we would need to assess the extent to which approval conditions will be weakened.

2. Incentive asymmetry and marginal impacts

Typically, the cost of the degradation of environmental assets is shared across a large number of people while the benefits of a project typically accrue to a smaller group. Another way of looking at this is the concept of marginality. The marginal impact of the loss to Australian society from environmental degradation is smaller than the marginal benefit to the project proponent.

Put another way, if a small area of forest is cleared. There is a loss of environmental services generated by that forest by way of air and water filtration, carbon storage and habitat for other species. On its own, the marginal impact of this change may not be significant, but added up across Australia there may be significant values at risk and thresholds being crossed. This is of particular concern with habitat fragmentation and erosion control.

3. Risks to future generations

As I mentioned at the hearing, some costs take the form of current day risks that result in costs to future generations. Consideration of risks within a cost-benefit framework is difficult because it relies on probabilities. In my experience, I have not seen a project adequately factor in environmental risks into a cost-benefit analysis or

economic impact assessment. Risks are typically discussed qualitatively, but not quantitatively.

Techniques for valuation

Once the considerations above are factored in, a number of practical approaches are available to estimate the values that would be lost if the approvals process is weakened and environmental concerns are downplayed.

Before deciding on the technique, however, it is important to discuss the scope of benefits and costs provided by our environment. The concept of ecosystem services is useful in this regard. Once the scope is clear, techniques to estimate environmental values in economics typically fall into two categories: **use values** or **non-use values.** These topics are discussed at length the report: The Economics of Ecosystems and Biodiversity: The Ecological and Economic Foundations. (http://www.teebweb.org/publications/teeb-study-reports/foundations/). Suffice to say, most project assessments Economists at Large review focus mostly on *direct* use values while ignoring indirect use values and non-use values.

Some specific examples of techniques to value the costs of environmental degradation from an indirect use and non-use perspective include:

- Estimating the replacement cost of the landscape being affected. This can often take the form of 'offsets' programs. However definitional difficulties arise when trying to replace established native forests.
- Estimating the cost of a suitable substitute for values lost such as water and nutrient cycling.
- Surveying communities on their willingness to pay or willingness to accept certain environmental outcomes.
- Hedonic pricing of properties affected by mining projects. In other words, what is the long-term change in property prices due to the existence of a mine? Note that in the short term, values may increase as mining companies acquire land.

I hope that this provides further information in relation to this question. Issues of valuation in economics are inherently difficult when no market transaction takes place. As a result, non-market values are typically undervalued and environmental assets are degraded.

This is particular relevant to the proposal to amend the EPBC Act. The inherent difficulties in valuation of environmental impacts and issues of incentive asymmetry, marginality and intergenerational equity require that sufficient institutional checks and balances be maintained. Otherwise, the interests of those who stand to benefit from projects will be placed ahead of the economy as a whole.

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