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## Offsets and Risk

### Introduction and methodology

Environmental offsets (shortened to ‘offset’ here) are indirect compensatory measures used as mitigation for the unavoidable environmental impacts of development proposals (Middle and Middle 2010). They can include rehabilitating already cleared land or building new wetlands as compensation for that lost due to development (Robertson 2000; Gibbon and Lindenmayer 2007).

This paper explores the risks that are associated with the use and application of offsets in EIA. The author has drawn on his own experience in reviewing and setting offsets, but more significantly, has drawn on the views of EIA practitioners in Western Australia (WA). A study was carried out where key individuals who have an interest in the use of offsets were interviewed to explore their experiences with offsets and their personal views on what are the key management and policy issues. Interviewees were drawn from key personnel from companies associated with the major resource proposals that were subject to EIA and the setting of offsets, consultants working in the field, representatives of conservation groups and officers from the key government agencies. A separate paper is being prepared to discuss the full range of issues raised in those interviews.

Four broad categories of risk associated with offsets are identified and discussed here. The first three types of risk relate to the risk that the desired benefits and environmental outcomes are not delivered, either in part or not at all. The last type of risk relates to applying offsets to address the risks and uncertainty associated with a proposal the subject of EIA.

## Offset risk 1

The first risk can be called *environmental risk*. In summary, environmental risk relates to the uncertainty as to whether the offset will deliver the predicted environmental benefits. For example, where a proposal requires the clearing of remnant native vegetation and the offset involves rehabilitation of cleared land, there is a risk that the rehabilitation might be unsuccessful and does not deliver the expected values. This would be a particularly risk for vegetation types that are highly sensitive to changing conditions: for example vegetation that requires groundwater at or near the surface where the local climate is drying due climate change causing a lowering of the watertable. Another example is coral, where studies show that it can take decades and up to a centaury to re-establish coral communities, as mortality rates of transplanted communities can be as high as 75% after five years depending on the species (Garrison and Ward 2008).

One response to this uncertainty is to increase the ‘compensation ratio’ that is set for the offset. This is the ratio between the area replaced compared to area lost (area of replacement /area lost). In most offset cases, this ratio is greater than one and can be as high as 10. Other than the uncertainty issue, there are two other reasons why this ratio should be greater than one (Minns 2006). First, it is generally acknowledged that it is almost impossible to get a like-for-like replacement for the habitat lost, and a larger offset area is required as compensation. Second, it usually takes considerable time for the offset habitat to reach maturity, leading to a net loss of productivity. To make up for this loss of productivity, the offset habitat is larger than the area lost.

Another element that adds to the risk here is the competence and track record of the proponent. Smaller companies with minimal experience in rehabilitation works are less likely to produce successful offsets than larger, well-experienced companies. This risk can be reduced if the offset is vested and managed by an independent agency that has been specifically set up or been given the role of managing offsets.

## Offset risk 2

The second risk is called *procedural risk,* which relates to potential flaws and corrupting influences in the process of deciding and implementing offsets. The general mitigation hierarchy in EIA is:

* Avoid impacts – consider alternatives,
* Where avoidance is not possible, reduce and minimize impacts; and
* Where unacceptable impacts remain, offset those impacts (International Association for Impact Assessment and UK Institute of Environmental Assessment 1999).

In this hierarchy, offsets are introduced for consideration only when the avoid and reduce options have been fully explored and residual impacts remain. Experience in WA suggests that some proponents are introducing consideration of offsets early. There is, therefore, concern that proponents are not giving full consideration to the avoid and reduce options, preferring to propose significant offsets instead. In these cases the very basis and principles of good EIA practice are being corrupted.

Those practitioners who supported early consideration of offsets expressed concerns that when offsets were considered late in the process it adds further time to the overall process, thus adding extra costs to project. It was argued that having offsets introduced early on in the assessment means that the proposed package can be considered on its merits at the same time, but separate from, the consideration of the proposal itself. In response to the concerns about early consideration of offset, these practitioners argue that the assessing agency (the EPA in WA) can separate the two issue of project assessment and acceptability of offsets.

A further possible corruption factor is where the agency with the expertise in assessing offsets is also the agency that would manage the offset. There is a potential for this agency to argue for a larger offset that would normally be required when taking into account the proposals’ residual impacts.

There are insufficient cases of the use of offsets in WA to study in order to draw a definitive conclusion about at what point in the EIA process should consideration of offsets occur and what impact early consideration of offsets has had on those assessments. In the absence of good data on this issue, the mitigation hierarchy should be maintained with consideration of offsets only entertained once the avoid and reduce options are exhausted. However, in a political environment where governments are increasing concerned about the timeliness of assessment and approvals processes, pressure will grow to consider offsets earlier rather then later. The IAIA can provide policy guidance on the use of offsets to help assessing agencies deal with this growing pressure.

### Offset risk 3

The third risk is called *threshold risk*, which relates to the possible application of offsets to circumstances that would normally be considered unacceptable. A key question for EIA when considering residual impacts is ‘what level of residual impacts can be considered so significant that no offset can be considered appropriate?’ For example, if a proposal involves the clearing of significant vegetation that would normally be considered unacceptable (a vegetation type or complex that is very poorly reserved and few examples of this type remains uncleared) then no offset can compensate this loss. The argument is that even if the offset involved a direct replacement of this vegetation type, no matter how large the offset was, the risk that the offset would fail as a direct replacement is so significant that the only option is to refuse the proposal. Such an argument raises the critical question about where is the threshold for such decisions?

A further issue raised by the WA practitioners is that if the final more political process of approval accepts an offset this could lead to a perception that an approval has been *bought:* i.e. the EIA process has been corrupted. The key reason for this is that in WA some offsets are not direct (i.e. rehabilitation of cleared vegetation) but are indirect and often involve the payment of money to fund further studies, research or management. The requirement to provide funds (albeit for a legitimate purpose) could lead to the *perception* that the approval has been bought.

This perception of buying and approval can be minimised where there is an independent agency that assesses the offset on its merits, and is also independent of the actual EIA process.

### Offset risk 4

The final risk is quite different from the other and can be seen as an opportunity rather than a problem - although caution should be used in applying them too widely. This relates to the use of offsets to compensate the uncertainty surrounding the level of impacts of a proposal and the risk that significant adverse environmental impacts could occur. This has been discussed previously (Middle and Middle 2010) and has been called *offsets for uncertainty*, and was based on observations of the WA EIA process where offsets were used in projects located in areas where there limited base-line data upon which to determine the level of impacts.

One example cited in that work related to impacts on turtle populations. Some of the major resource projects in the north of WA are located adjacent beaches significant for nesting turtles. Managing direct impacts on the females turtles that nest on the beaches is relatively easy, for example, exclusion of human activities from these beaches during the nesting season. The impact on the hatchlings is more problematic, and it is difficult to control the impacting factors (mostly lighting) and thus determine the long-term impacts on the overall turtle population i.e. will there be more predation of the hatchlings? In one case (an LNG plant), the proponent argued that the proposal can be managed so that it will not impact adversely on the turtle population, but it acknowledged the residual risk. Consequently, an offset was set that recognised this residual risk: i.e. the proponent was required to fund a A$32.5 million 30-year program to provide additional protection for the turtle population in areas away from proposal site. This offset can be considered a ‘residual risk’ offset in that it is provided not because of an adverse impact, but because there is a risk that adverse impacts could occur.

Further, the proponent was required to provide an offset in the event that monitoring demonstrates that the proposal was having a significant adverse impact on the turtle population. The offset will be a requirement to carry out actions to improve recruitment to the turtle population (i.e. reduced the loss of hatchlings), to a the total cost of $5 million. The type offset can be considered a ‘banked offsets’, as it will only be called upon in the event that monitoring show adverse impacts have occurred.

These types of offsets have potential to be used in other circumstance where there is significant uncertainty about the level of residual impacts. For example, where dredging is required to provide ship access to new port, and there is significant nearby benthic habitat that either will be directly lost as it is in the dredging footprint, or could be lost indirectly because sediment from the dredging activities disperses and smothers the habitat. Modelling is usually applied to predict this indirect loss but significant uncertainty remains as to what will happen when the dredging is carried out in in real environmental conditions.

Whilst these ‘offsets for uncertainty’ have the potential to be used more broadly as a policy tool in EIA, Middle and Middle (2010) noted two cautions in applying them too widely. The first was the threshold issue noted above: there may well be cases where the residual risk remains unacceptable no matter what offset is applied. The second is one of practice and risk quantification. There should be a clear link between the nature and extent of the offset and the level of residual risk but how are the two actually compared is not clear? This could likely be resolved through case-by-case application and precedent setting but to-date there has been too few examples of these offsets to allow for clear rules to be established.

## References

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