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BIODIVERSITY OFFSET SCHEMES COUNTRY SUMMARY REPORT: AUSTRALIA

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Biodiversity Offsetting: Australia Summary Report

1 INTRODUCTION

Over recent years, the uptake of biodiversity offsets as a mechanism for addressing the residual impacts of project development has increased rapidly. Whilst comprehensive guidance for biodiversity offsets has been developed[1], it is widely recognised that offset implementation faces a host of technical, social and governance challenges, and there is concern that offsets could undermine existing mechanisms for conserving biodiversity if developed in isolation. In guiding the future development and implementation of offsets to achieve biodiversity conservation, it is important that learning is derived from existing offset schemes around the world. Offset policy in Australia has been developing rapidly over the last decade and this is reflected in the large number of operational offset schemes in the country. FFI's assessment of offset policy and practice in Australia focused on four of the frameworks within which biodiversity offsets are being applied (Federal, Victoria, New South Wales and South Australia), the mechanisms of implementation, and the barriers and enablers for achieving intended ecological goals. Information was gathered through interviews and review of available information. This report summarises the findings of the assessment and considers lessons learned for moving forward.

2 THE AUSTRALIAN CONTEXT

Australia is home to an estimated 500,000 species, most of which are endemic. With the economy of a strong, developed nation and relatively low population density, Australia has considerable challenges in funding and resourcing management of the continent's threatened biodiversity. Most ecologists believe Australia will face a second wave of extinctions that will see the loss of much of this biological diversity. The country currently has the highest number of threatened mammals and plants of any country or continent[2]. Australia's biodiversity is threatened by invasive species, land degradation and clearance, and climate change. It has some of the highest rates of species extinction[3] and native vegetation clearance in the world[4]. These factors have driven the development of legislation to support protection of biodiversity against further losses caused by land development.

The use of biodiversity offsets, within the mitigation hierarchy framework, has been developing rapidly in Australia as one mechanism to reduce impacts to biodiversity from development. There are several factors that have progressed the growth and use of biodiversity offsets and associated markets in Australia, including;

- The general public's acceptance of market-based instruments for conservation as a means of protecting biodiversity into the future;
- The significant and ongoing development of natural resource extraction, which has increased the need to regulate and mitigate against losses to biodiversity as well as social and economic impacts;
- Research groups across Australia's academic institutions have established a wealth of biological data enabling more accurate assessment of impacts to biodiversity, and

[1] Such as that developed by the Business and Biodiversity Offsets Programme, BBOP.
[2] Commonwealth Government of Australia State of Environment Report 2011 Canberra
[3] Woinarski, J., Burbidge, A. & Harrison, P. (2015) Ongoing unravelling of a continental fauna: Decline and extinction of Australian mammals since European settlement. *PNAS,* 112 (15): 4531-4540
[4] Australian Conservation Foundation (2001). Australian land clearing, a global perspective: Latest facts and figures. Victoria, Australia. URL: https://www.acfonline.org.au/sites/default/files/resources/au_land_clearing.pdf and https://www.acfonline.org.au/sites/default/files/resources/landclearing_rates.pdf

contributed to growing numbers of professionals with the necessary skills to assess and manage species, habitats and conservation areas;

- Robust land tenure and planning regulatory frameworks have been established, including legislation that supports and protects species, habitats and areas designated for biodiversity conservation.

In Australia, legislation on biodiversity issues has been developed and administered by both the sub-national and national governments. The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian government's principal piece of environmental legislation. It is designed to protect 'matters of national environmental significance' in both terrestrial and marine ecosystems, including nationally threatened species and ecological communities, migratory species, World Heritage sites, wetlands of international importance and the Great Barrier Reef Marine Park. If a proposed development is likely to have a significant impact on any of these components, it must be assessed under the EPBC Act. For assessments under the EPBC Act, biodiversity offsets are only required if the remaining residual impacts are deemed to be significant with respect to guideline criteria.

In addition to national legislation requirements, each proposed development must also comply with the relevant sub-national legislation. There are currently seven sub-national jurisdictions with operational offset schemes and policies in the country, as highlighted in the diagram below.

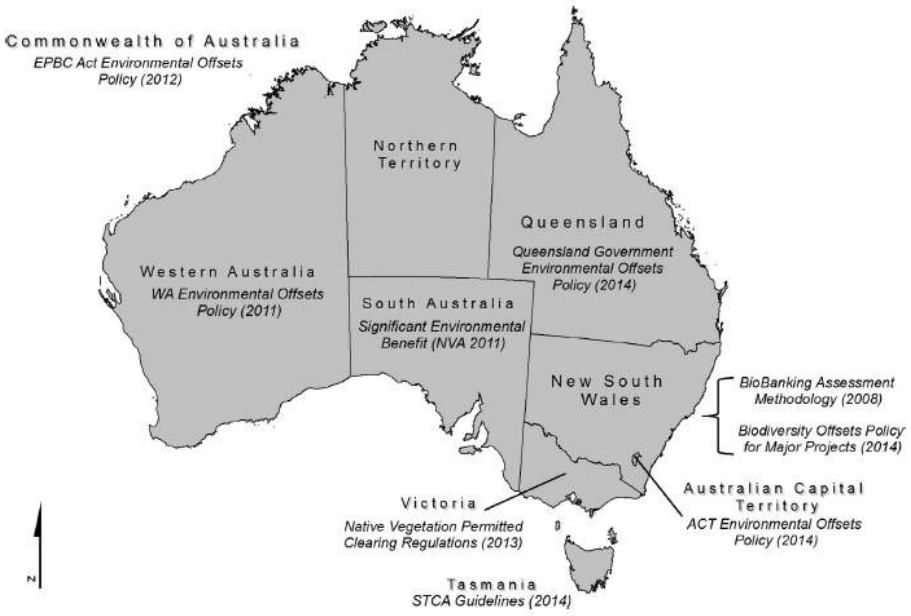

Figure 1: Offset schemes by Australian jurisdiction (Maron et al 2015[5])**.**

Victoria and New South Wales have the longest standing established offset schemes, requiring like-for-like offsets. Until recently, Queensland had several separate offset programmes that required the consideration of residual impacts to threatened native vegetation, koala habitat and marine fish habitat. These programmes have now been rolled into one overarching policy - the

[5] Maron, M., J.W. Bull, M.C.Evans and A. Gordon 2015. *Locking in loss: Baselines of decline in Australian biodiversity offset policies.* Biological Conservation (in press)

Environmental Offsets Act 2014. The South Australian *Significant Environmental Benefit* offset programme implements like-for-like offsets for impacts to significant and threatened native habitat. Western Australia has an offset policy which is implemented during the Environmental Impact Assessment (EIA) phase. Tasmania has guidelines for Natural Values Assessment 2009 applicable for impact on species, vegetation communities, sites or values that have significance or statutory protection under the Nature Conservation Act 2002, and the Threatened Species Protection Act 1995. The Australian Capital Territory also has a new Environmental Offsets policy 2014.

Both the national and sub-national offset schemes are compliance-based and assessment is undertaken on a case-by-case basis during the development planning process. Offsets are used as planning tools by project developers to compensate for significant residual impacts and ultimately gain project approval by local, state and/or national planning systems. Whilst there are many similarities between the environmental laws of the states and territories and the EPBC Act, they also differ in a fundamental way. The EPBC Act focuses on protecting specific features or areas ('matters of national environmental significance') within the landscape. On the other hand, state and territory legislation aims to protect all aspects of the environment such as water quality, air quality and all biodiversity features. In spite of this two-tiered approach, there is growing concern that offsets are not providing the biodiversity outcomes envisaged by the various government environmental departments. Furthermore, current compliance requirements across national and sub-national schemes are resulting in a complex process, requiring different levels of sign-off from governments and varied offset approaches.

To simplify the process, and as of July 2015, the Australian national government intends to create a 'one-stop shop' for environmental approvals. This approach aims to accredit the sub-national planning systems to administer a single environmental assessment and, ultimately, approval process for both state and nationally protected matters. This should, in turn, remove duplication in assessment and approval processes while maintaining the desired environmental outcomes. In reality it removes national government oversight of state government-sponsored development. At present all states and territories have signed a Memorandum of Understanding to facilitate a single assessment process. However, this approach has caused some controversy. Whilst streamlining the two layers of assessment and approval processes is seen as beneficial for business and government, the potential dilution of environmental safeguards at a national level is cause of concern. A key risk in this approach is that it could allow sub-national governments to support approval decisions aligned with political motives and economic benefits rather than biodiversity and environmental protection.

Following public concern over several high-profile cases and inadequate biodiversity offset requirements, a national senate inquiry was completed in 2014. This process saw an independent reviewer assess the appropriateness and effectiveness of the use of environmental offsets under the EPBC Act. Gaps and shortcomings were highlighted, and a wide variety of recommendations made to improve the process. This regulatory review, and the volume of operating offset schemes, makes Australia an ideal case study to better understand offsetting challenges and identify possible approaches to a range of offset design and implementation issues.

3 LESSONS LEARNED DURING FFI'S REVIEW

3.1 Key policy elements

Mitigation and 'No-go' before offsets

Offsetting is the final step in the mitigation hierarchy and may not be required if impacts can first be avoided, reduced and/or restored. The mitigation hierarchy framework is required within all Australian offset policy, but the guidance material and tools developed focus mainly on the final stage, offsets. The mitigation hierarchy is generally well accepted in Australia, but further guidance would be welcomed particularly to assist proponents and decision makers to guide and assess mitigation decisions.

In some cases it must be noted that offsets are not appropriate – a submission to the senate inquiry stated: '*It should be made much more explicit that many impacts cannot be offset, and then the choice is between development and associated biodiversity loss, or the alternative. We cannot always have our cake and eat it, and it is misleading to imply otherwise'*. A very large proportion of projects are federally approved under the EPBC Act (with offsetting conditions), but at least 10 proposals have been refused due to the inadequacy of offsets. This indicates that the system can work, and is working in some cases.

Recommendation – Implement and enforce offsets only within the framework of the full mitigation hierarchy. There is a need to acknowledge that offsets are not appropriate in some circumstances and to develop guidance relating to development impacts for which offsets are unacceptable, including a list of 'red flag' or 'no-go' areas, such as World Heritage sites and critically endangered ecological communities and species. Proponents and decision makers would benefit from further guidance on mitigation at project inception including guidance on avoidance, minimisation and restoration measures.

Transfer of offset liability

In most cases, Australian legislation is not overly prescriptive and has been designed to allow flexibility in offset design to meet the requirements. Flexibility in offset design allows proponents to respond to site-specific challenges and is strongly promoted by the business sector. However, the New South Wales offsets scheme demonstrates the potential risks to government of allowing flexibility in offset options. New South Wales introduced a choice for business between negotiating a biobanking offset or a payment in lieu of offset. It has found that business overwhelmingly chose the payment in lieu with only ten biobanking statements in eight years. The payment in lieu of offset option transfers the liability away from business in a quick and efficient manner. It passes that liability to the government to deliver the offset, extending the time lag for real offsetting and leaving government holding the environmental and financial risk. In contrast to this, the Victorian government approach requires the offset to be secured prior to the impact, leaving the legal and financial risk with the proponent and increasing the efficiency of implementation of an offset as it is a condition of the commencement of their development. This approach was supported through separate government policies aimed at incentivising the third party offset market (Bushbroker).

Recommendation – Flexibility in an offset policy can be important to allow proponents to respond to site-specific challenges. However the design of these options, and particularly payment in lieu of offset schemes, needs to consider the full environmental and financial risk that will be transferred from the private sector to government.

Offsets can drive positive behaviours

Governments should not underestimate the ability of industry to pay the full cost of biodiversity offsets. The Australian experience clearly shows that the vast majority of companies will continue to do business and incorporate the cost placed on biodiversity conservation into project budgets. Their behavioural response can also drive innovation in relation to earlier stages of the mitigation hierarchy (e.g. designing innovative avoidance measures such as directional drilling).

Proponents across industries have varying capacity to invest in biodiversity offsets and in response will adjust their application of the mitigation hierarchy accordingly. Mining companies in particular have invested significant amounts in biodiversity offsets. This may be due to their inability to make late changes to project plans in order to avoid or minimise impacts over a fixed resource deposit, coupled with the fact that they have sufficient capital to dedicate to offsets. Residential and infrastructure proponents are more likely to shift their developments and reshape them in order to avoid or minimise impacts on biodiversity because they generally have smaller profit margins and greater flexibility in their project planning.

The presence of an offset scheme can incentivise landholders such as farmers to protect species/habitat values on their lands. However, anecdotal information shows that farmers are often reluctant to allow their lands to be used for offsets. This reluctance may stem from a lack of trust in business or offset schemes, or the belief that the habitat on their land is valuable in its own right, or be motivated by the prospect of a possible future economic gain. This tendency is most prevalent in the context of impacts relating to coal and coal seam gas extraction, where local communities oppose these types of developments.

Recommendation – Design an offset scheme that passes the full cost of biodiversity offsets onto the developer. When businesses carry the financial, legal and reputational risk of biodiversity impacts and offsets, they will find efficient ways to cover their liability. Incentivising business to deal with their biodiversity offset liability would lead to a stronger and more effective biodiversity conservation sector.

Importance of additional biodiversity benefits

Offsets need to adequately reflect the principles of additionality[6] and are not granted in relation to habitats/areas that are already protected or funded under existing legislation or obligation. This principle is incorporated into Australian offset schemes. However, in practice there are cases in which offsets have been established to protect intact vegetation on land that was not under genuine threat from clearing because existing environmental legislation already prevented vegetation clearance.

In Victoria, each site within the state has been given a habitat score and offset requirements are based upon these habitat values. Sites with high habitat scores (due to high quality of vegetation) are less likely to be cleared for development, as doing so would require a larger offset. In effect these sites are afforded greater protection and therefore under less threat. Yet because these sites are typically in excellent condition and under reduced threat they therefore offer minimal additionality as an offset.

In South Australia, proponents can make a payment in lieu of an offset and this is channelled into a grant fund. The distribution of funding raises serious questions regarding additionality. Typically, the application of funds does not compensate for the biodiversity that has been

[6] Additionality - A property of a biodiversity offset, where the conservation outcomes it delivers are demonstrably new and additional and would not have resulted without the offset (BBOP Glossary).

adversely affected by a given development. Moreover, guidelines for the grant fund do not make any links back to the impact, with funding being directed towards Natural Resource Management Board conservation priorities, which are often in national parks. Biodiversity offset funds are therefore often targeted at activities that should be included in the operational management of the protected area or covered by other government grants. Examples include invasive weed removal in protected areas, vegetation restoration in national parks, community awareness raising workshops and research into grazing management best practice. This has led to biodiversity offset payments being misdirected from their intended purpose for managing offsets and evident cost shifting within government.

Recommendation – It is essential to incorporate the principle of additionality into offset policy. The Australia country assessment has highlighted that further clarity and guidance with respect to implementing additionality is required. Moreover, limits to offsetting need to be clear, particularly with respect to offsetting in protected areas. To avoid issues related to additionality, it is critical that the baseline scenario (what would happen in the absence of the impact and the offset) is established and directly compared with the proposal. Moreover, the utilisation of funds established in lieu of biodiversity offsets needs to be transparent and rigorous.

Offsetting in perpetuity (and timing of payments)

Offsets should be protected in perpetuity and must not be subject to future development. Whilst most legislative instruments in Australia recommend that offsets be secured in perpetuity, some allow offsets to be implemented for the duration of the impacting process/action. Depending on the Australian offset scheme, offset management actions are often required over a period of 10 to 20 years. Where payments over time are provided for offsets they are generally front loaded to allow for more management actions earlier in the project. This allows for expensive items such as fencing and initial weed management to occur and come under control, allowing for lower cost maintenance to continue over the longer period. This assumes that as biodiversity matures, it will look after itself after 10 to 20 years with only minimal maintenance. In general, offset providers believe this is a reasonable and appropriate approach.

However, the timing and payments for active management and passive maintenance need further consideration and research. Without monitoring data to compare the offset gains with the impact losses, we cannot know whether the biodiversity gains achieved after 10 to 20 years are sufficient to actually compensate for impact losses. It is also unclear whether funding will be available for the longer term management of an offset 50 to 100 years hence, for example. In Victorian offset schemes, all offset funds will be spent within the first 10 years of the offset. The additional funding required to maintain or improve the offset in the future needs further investigation and commitment.

The senate inquiry also received evidence that, in many jurisdictions, it is difficult to find a secure legal mechanism in Australia for the protection of offset areas in perpetuity on private land. The main legal protection used by the EPBC act and state offset policy – conservation agreements or covenants – were often considered to be unenforceable. Several examples have been identified in Australia whereby developments have been proposed and approved in areas that were supposed to be set aside as offsets (e.g. Warkworth Sands Woodland ecosystem in the Hunter Valley, New South Wales, and Bimblebox Nature Refuge in Queensland, which had been protected under a conservation agreement. Both are threatened by proposed mining projects).

Recommendation - Establish effective legal mechanisms for proponents to secure offsets (land tenure or agreed future management actions) in perpetuity. Establish a publicly available offset

register with a spatial layer of offset locations. Consider the need and mechanisms available for proponents to fund offset management beyond 10-20 year timeframes.

3.2 Scheme design elements

Importance of Standardised Metrics

The development of standardised quantification methods is essential to an offsetting scheme. Australia now has a range of different approaches, each of which has undergone numerous reviews and testing in the field. Some of these, including Victoria's habitat hectares approach, have also been used or adapted in international schemes. This is a key lesson from the offsets schemes in Australia as it has reduced uncertainty and debate between proponents and decision makers on the amount of offset required for a particular impact. Also, it has reduced negotiation and the use of discretion by decision makers. The publication of these assessment results has enabled transparency, improving confidence in the schemes.

There is room for improvement in Australian metrics and a nationally standardised metric would probably lead to better environmental outcomes and a more consistent process. Each national and sub-national scheme in Australia has different technical detail and all schemes are tested and revised to improve the techniques and metrics. The EPBC Act metric should be highlighted as a lead methodology as it explicitly requires consideration of the baseline scenario and takes into account both time lag and project risk in its calculations.

Recommendation – Standardised quantification methods that assess both the impact and offset site (and can be used for monitoring offset performance) have improved decision making, reduced uncertainty and aided transparency and therefore confidence in offsetting schemes in Australia. Where possible implement a nationally consistent metric.

Importance of a transparent baseline

In all Australian offset schemes reviewed in this assessment, averted loss offsets are considered appropriate. This offset requires a baseline or *business-as-usual* scenario to be determined (the scenario if neither the impact nor offset occurred). Only the EPBC Act explicitly refers to this baseline and scenario analysis. In the absence of a business-as-usual baseline scenario it is difficult to define the objective of the offset. Further to this, it is important to ensure this underlying baseline scenario does not predict degradation at higher rates than actual degradation. For example, by applying a fixed metric for degradation to all biodiversity features where the background degradation for a specific biodiversity feature is lower than the fixed metric. This can over-predict the effectiveness of the offset and potentially reduce total offset requirements for the development, such that it does not compensate adequately for residual impacts on biodiversity. Expert scientific advice is required to determine current degradation rates for specific biodiversity features.

The suitability of an offset must be assessed by comparing the future scenario at the impact site with the future scenario at the offset site. In other words, offsetting by protecting habitat against degradation provides a positive gain for biodiversity compared to what would have happened without the protection of the offset (in press, Maron et al., 2015[7]).

Recommendation - In offset schemes where averted losses are permitted, it is important to explicitly consider the baseline and justify an informed and realistic degradation rate for the specific feature. This requirement should be supported in the guidelines of the offset scheme and requires expert advice.

[7] Maron, M., J.W. Bull, M.C.Evans and A. Gordon 2015. *Locking in loss: Baselines of decline in Australian biodiversity offset policies.* Biological Conservation (in press)

Importance of securing offsets prior to allowing impacts

Where approved offsets are not made a requirement before development begins, the impacts may occur without offsetting ever being undertaken. The various schemes have learnt over time the importance of ensuring offsets are secured, and preferably in place, prior to approving development permits or allowing impacts to commence. This was demonstrated in the 2010 South Australian study of offset compliance where approved projects commenced but were subsequently unable to find an appropriate offset. Similarly the EPBC Act Offsets Policy provides developers with upfront development approval based on a theoretical high-level offset plan while the final offsets management plan approval comes much later, sometimes significantly later, by which time the government department lacks sufficient incentives to require proponents to generate an adequate offset commitment. In this circumstance offset conditions have be amended to the benefit of proponents.

Recommendation - Regulators must ensure that project developments do not commence until the appropriate biodiversity offset has been secured.

Importance of clear government offset guidance and support

At both national and sub-national level, Australia has developed a range of easily accessible decision support tools (e.g. EPBC offset Assessment guide and state-wide mapping of habitat), guidance material (e.g. How to use the offset Assessment guide), and knowledge databases (e.g. Species Profile and Threats Database (SPRAT)). These publicly available tools improve the transparency of decision making, increase certainty with respect to offsetting requirements and can provide practitioners and proponents with fast access to the data required to make informed decisions.

Recommendation – Utilise academic resources and biodiversity/offset specialists with local understanding to develop offset guidance and support tools that are regionally appropriate. These will assist capacity building and the efficient implementation of the scheme.

3.3 Scheme implementation, monitoring and enforcement

Compliance monitoring is crucial

Offsets should be monitored to determine the success of implementation, to inform compliance and to enable adaptive management. In Australia the delegation of offset approvals to a number of different agencies has resulted in dispersed and often limited data, which in turn has resulted in poor data accessibility and a reduced ability to comprehensively assess the success of biodiversity offsets. Delegated authorities are not required to maintain data, nor to forward comprehensive data to a central agent in any national or sub-national offset scheme.

This delegation of authority has also affected monitoring and compliance efforts. Local government authorities generally do not undertake any compliance monitoring and where they do efforts are variable. State government agencies are required to have compliance units and these are audited by the Parliament, yet over time compliance efforts have varied due to changes in resources and personnel. The South Australian Monitoring Compliance Report of 2010 demonstrated significant non-compliance of offset providers and a lack of monitoring or compliance activity by the native vegetation and biodiversity government teams. It can only be assumed that compliance with local authorities is as bad or worse. Similarly, the Australian Auditor General found poor compliance effort in the administration of the EPBC scheme.

Owing to the very large number of projects that are referred to the Commonwealth Government under the EPBC Act, monitoring requires a significant investment of the Department's resources. To address this issue, the EPBC Act audit recommended a risk based approach to compliance

monitoring for the national offsets scheme. This is also being considered by the Victorian state government. This means that compliance auditing of implemented biodiversity offsets will be strategically targeted at projects that are most likely to cause harm to the environment. This is expected to improve the ability of national and sub-national government to effectively and efficiently monitor offsets within their jurisdiction.

In the absence of good compliance monitoring and the resources necessary to undertake monitoring activities, enforcement of biodiversity offsets will be inadequate.

Moreover, in any offset scheme the number of projects requiring monitoring will increase each and every year, so a well-designed system is required at the outset to cope with increased monitoring needs in the future. A well-considered and resourced monitoring, compliance and enforcement framework for offset management is required to ensure there is compliance across the board.

Recommendation – Require proponents to develop robust monitoring programmes and provide results to the relevant department on a frequent basis. Monitoring results should be made publicly available and preferably stored in a central database. As offset schemes grow it may be unrealistic to monitor all proponents for compliance. Risk-based approaches to compliance monitoring could help to address this by strategically targeting projects that are most likely to cause harm to the environment.

Importance of monitoring offset outcomes

Australia does not have data to verify that offsets deliver biodiversity gains. This is in part because not enough time has passed for offsets to mature and deliver the expected benefits. However, it is also true that systems have not been put in place to collect the data required to measure biodiversity outcomes. This is largely due to a lack of government resources being invested in data collection, monitoring and compliance. The data that are collected typically focus on monitoring management inputs rather than biodiversity outcomes as a result of the offset. Victoria and New South Wales may be able to assess, using GIS spatial native vegetation data, the overall losses and gains in native vegetation, but the extent to which they can attribute observed changes to offsetting is yet to be determined. Furthermore, these types of habitat data will not assess quality improvements or population numbers of threatened species. Where threatened species offsets are expected to maintain or improve a species population, the offset is only deemed successful if a gain in population numbers can be demonstrated.

Recommendation – Compliance offset schemes must assess the outcome of the offset, not just its management. Following this, the delivery of the offset must only be considered effective when the offset gain is the same or greater than the impact losses. Offsets must then be maintained for as long as the impact exists and/or in perpetuity. This can only be verified with a considered and resourced monitoring, compliance and enforcement framework.

Enforcement of offsets

Failure to implement an agreed offset should result in a penalty to the proponent. There are penalties under the EPBC Act (and other schemes) that apply to the breach of offset conditions. However, numerous submissions to the senate inquiry highlighted examples of the government's failure to penalise proponents for breaching offset conditions, with conditions often modified post approval, and without further public scrutiny. This situation is likely to undermine the objectives of offset policy.

Recommendation – Design suitable non-compliance penalties and embed these into all offset schemes. The modification of offset conditions post approval must be conducted in a transparent manner and avoided where possible.

Importance of cost recovery from scheme users

It is crucial that proponents fund the full costs of the administration of the offset scheme through fees and charges. Any offset scheme must ensure the proponent funds the full cost of the scheme, including assessment processes, decision making, data management and maintenance, and compliance monitoring and enforcement. In addition, where the regulator collects payment in lieu of on ground offset, the payment calculation must adequately reflect the cost of implementation, protection and maintenance of the offset in perpetuity. The importance of this has been demonstrated in South Australia where the Government has not had resources to undertake compliance and enforcement and where the calculation of the 'significant environmental benefit' maintenance cost is determined based on the area of the clearance and not the area of offset requiring maintenance.

Recommendation – To ensure the offset scheme is well resourced, governments should consider full cost recovery for the cost of the scheme via adequate fees and charges from proponents.

Ensure broad stakeholder engagement from policy design to offset implementation

A broad range of stakeholders including experts, academics, consultants and industry were engaged and consulted in recent policy and offset tool design. Furthermore, the general public are given the opportunity to make public submissions during the planning process, in individual project Environment Impact Assessment (EIA) processes and through the recent senate inquiry into offset effectiveness. However, following EIA approval, offset details are often negotiated between the relevant environmental department and the proponent, with little opportunity for public input or scrutiny. Offset plans and monitoring results are not being made publicly available, even when they are finalised.

Traditional Owners argued at the senate inquiry that they are not adequately consulted in decisions regarding early assessments, design and implementation of offsets and that the current federal offset system does not adequately consider cultural values associated with their lands. There is significant scope for greater inclusion of Traditional Owners in the design and implementation of offsets that achieve positive long-term biodiversity and sustainable development outcomes.

Recommendation – Require comprehensive expert engagement in the design of offset policy and tools specific to the country context (where possible). Make key documents publicly available (e.g. offset plans and monitoring reports) and enable effective public participation during planning and EIA processes. Create a national register to document offset plans, offset spatial location and implementation results. Traditional Owners should be explicitly consulted in the early assessment and design of offsets. The role of Traditional Owners in the implementation and monitoring of biodiversity offsets should be explored, and necessary capacities strengthened.

Accrediting ecological consultants

The complexity of biodiversity offsetting schemes and the metrics used to measure impact and gains requires a specialised skill set. Governments and professional bodies in Australia have provided training for ecological consultants and environment department staff and in some states only allow accredited trained consultants to undertake the biodiversity assessments and develop offsets (New South Wales and Victoria). This should improve the quality of impact assessment

and offset design. Yet the senate inquiry heard examples of businesses cutting corners and accredited consultants generating unsatisfactory offset plans. This reinforces the need for government offset schemes to monitor and enforce compliance with legislation. There is also an opportunity for professional associations to strengthen offset accreditation schemes.

Recommendations – Provide suitable training programmes and accreditation for environmental consultants and government staff expected to work with offset policy.

3.4 Further policy considerations

Importance of socio-economic and political context

Each offset scheme is designed within the context of the socio-economic and political environment. For example Australia's national legislation only focuses on matters that are of national importance and this has dictated the design of the national offset policy. Each state and territory government has a different legislative context that is the basis for its offset policy. These are determined by the socio-economic and political context of the time. Australia has largely experienced economic stability, yet changing governments have regularly altered offset policy.

There are several examples of socio-economic and political factors driving biodiversity offset schemes and policy design, including;

- Australia has a history of strong laws for the protection and management of national parks. These areas are generally intact and not under direct threat of human degradation. The enforcement of these laws, coupled with a stable economy and strong community attitudes towards the protection of national parks has limited the extent to which individuals or entities legally or illegally exploit national park resources. This low threat level and high protection makes national parks ineligible locations for averted loss or out-of-kind biodiversity offsets.
- The Victoria offsetting system is based upon decades of ecological research, which has produced technical models and mapping software for representing biodiversity. This investment in ecological science is due to the consistent political and economic support from successive governments. The Victorian offset programme is therefore based on scientific knowledge and principles. Such an offsets scheme will be difficult to replicate in data-poor regions or where investment in biodiversity knowledge and capacity is lacking or inadequate.
- In New South Wales, the importance placed by governments on biodiversity conservation compared to economic development has changed over time. Despite over two decades of government policy in support of triple bottom-line considerations for planning decisions, the current government is seen to favour economic returns at the expense of social or environmental outcomes, as evidenced by 2014 changes to Mining State Environmental Planning Policy. This is expected to have a detrimental effect on conservation outcomes into the future.

Recommendation – An offset scheme must reflect the socio-political context of the region. However, the Australia assessment has shown that different governments often change offset policy design, which can create an environment of uncertainty and has potential to undermine the integrity of biodiversity offsetting schemes. It is recommended that offset policies should be guided by best practice environmental and social safeguards principles.

Further consideration for offsetting in marine ecosystems

The EPBC Act Offsets Policy applies to both land-based and marine ecosystems. However, marine ecosystems are fundamentally different to those on land. Marine ecosystems have a larger scale of connectivity, are particularly vulnerable to environmental disturbance, are often poorly researched, and support species that can be extremely mobile between oceans.

Furthermore marine restoration techniques that are required to develop offsets are in early developmental stages, with highly variable success rates.

Recommendations – Consider whether different requirements or policy guidance should be provided for offsetting in marine ecosystems, rather than adopting a one-size-fits-all approach.

Benefits of a precautionary approach to offset policy

The consideration of an ecological approach in offsets is varied in Australia. Both the South Australian and Victorian schemes trigger offsetting requirements through the application to clear any native vegetation (and by association all the species therein). This trigger has a lower threshold compared to the Australian EPBC Act and the New South Wales Major Projects and Biobanking offset schemes that are triggered with significant impacts to particular biodiversity features; typically, threatened species or ecological communities. There are currently insufficient data to compare the outcomes of the respective approaches. However, it is expected that the lower threshold applied in South Australia and Victoria will result in better biodiversity outcomes over time as it is more precautionary and recognises multiple biodiversity values rather than solely focusing on threatened biodiversity.

Recommendation – Utilising the precautionary approach when designing an offset policy and ensuring consideration of multiple biodiversity values (including, but not limited, to threatened species) will, over time, provide better protection for biodiversity. This is particularly true in circumstances where scientific data on species populations and distribution are sparse or incomplete.

4 CONCLUSION

Australia has been designing and implementing biodiversity offsets through a variety of offset schemes for the last decade. Australia's experience and the challenges it has faced provides valuable insight to help guide the future development and implementation of offsets in order to improve biodiversity conservation outcomes. It is important, however, to be aware that the extent to which these lessons can be transferred to other countries and regions will depend on the particular socio-political and ecological context in which offset schemes are being developed.

Key policy elements that the Australian assessment has identified include:

- The need to acknowledge that offsets are not appropriate in some circumstances, and to provide guidance on which offsets are unacceptable;
- The need for policy regulators to ensure that biodiversity offsets are, at a minimum, a like-for-like or like-for-better compensation for the impacts on biodiversity and habitats, especially where the features being adversely affected are threatened or range-restricted;
- The full cost and risk of biodiversity offsets can and should be passed onto the developer;
- The importance of further guidance with respect to implementing additionality on the ground;
- The need to establish effective legal mechanisms for proponents to secure and fund offsets in perpetuity;
- Whether different requirements or policy guidance should be provided for offsetting in marine ecosystems; and
- The need to maintain stable and consistent offset policy rather than allowing constant policy changes, as has been observed at Australian state level.

Offset scheme design elements that the Australian assessment has highlighted include:

- The use of standardised quantification methods are considered to have improved decision making, reduced uncertainty and aided transparency in offsetting schemes in Australia;
- Informed and realistic degradation rates need to be determined and critiqued for offset schemes where averted losses are permitted;
- Regulators should ensure that project developments do not commence until the appropriate biodiversity offset has been secured; and
- Strong academic capacity and biodiversity/offset specialists with local understanding have been valuable in developing offset guidance and support tools.

Lessons learned relating to offset implementation, monitoring and enforcement include:

- The effectiveness of offsets must be monitored and results made publicly available and preferably stored in a central database to increase transparency;
- The design of suitable non-compliance penalties and embedding such penalties in site-level conditions is crucial;
- Governments need to consider full cost recovery for the cost of the scheme via adequate fees and charges from proponents and suitable training programmes; and
- Accreditation for environmental consultants and government staff working with offset policy is recommended.

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