Restoring environmental standards in the Northern Territory through offsets

A discussion paper

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and The Nature Conservancy

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Contents

Introduction and Background

This paper is about the role of environmental offsets in improving the quality of environmental management in the Territory and, through good design, creating valuable enterprise and employment options for remote, especially Indigenous, communities. It builds on work done in previous collaborations with The Nature Conservancy[i].

What are offsets?

Offsets are actions taken by developers to ensure that their activities cause no net loss of environmental quality. They compensate for unavoidable damage at a development site by delivering equivalent or larger environmental benefits in another place. This can be done directly by protecting or rehabilitating an area similar to that affected by development, or improving the condition of somewhat different but important environmental assets. Indirect offsets can come in forms like helping the community to look after lands and seas, or research needed to inform better management. Offsets are a key component of the mitigation hierarchy, designed to achieve no net environmental loss or, preferably, a net environmental gain from development (Figure 1).

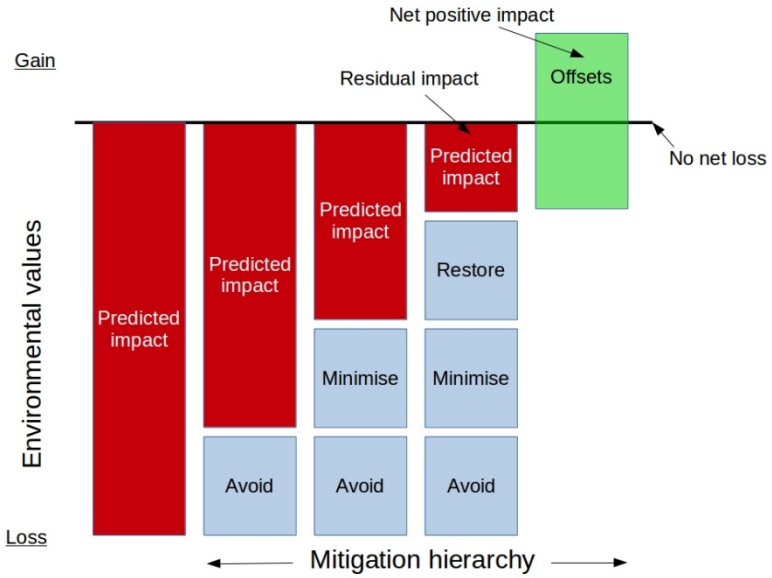

Figure 1: Representation of the mitigation hierarchy, including steps to avoid damage, reduce effects of development, and repair sites after use. The last step is to compensate for residual damage using offsets, only after all practicable measures have been taken to avoid, minimise and repair. [adapted from http://www.cbd.int/ images/biz/biz2010-03-03-p36.jpg]

Many companies already use offsets to deliver on their own corporate social responsibility practice, and important industries have adopted supporting policies[ii,iii]. Good offsets can help secure the "social licence" to operate. They can also facilitate access to funding. Under the International Finance Corporation's Performance Standard 6[iv], clients are required to demonstrate no net loss of biodiversity (where feasible) from their impacts on "natural habitat", and a net gain of biodiversity for their impacts on "critical habitat." Many financial institutions - including the "big four" Australian banks[v] - have adopted the connected Equator Principles[vi] and are bound by this standard.

Government and industry also favour offsets for other pragmatic reasons. As developers take steps to reduce residual damage, the costs of getting closer to the no damage target rise rapidly: the

environmental returns on increasingly costly mitigation measures get smaller and smaller. Offsets can help get to the no net damage target more cheaply and position developers to make net positive contributions to environmental quality: at lower cost than striving for the all-but-impossible target of no residual damage on-site.

The Territory and offsets

In the Territory there is presently no statement of government policy, structures or processes for offsets to guide developers or the regulators who set conditions for developments. The Territory began to develop policy and practice in 2010, initiating a trial that appeared to generate little agency response[vii]. Nonetheless, a major international gas developer, Inpex, agreed to an array of environmental offsets, some of which were locally relevant, in June 2011[viii]. The policy was apparently discontinued - without explanation - on a change of government in 2012 and there has been little concrete action since from government or industry[1].

Despite the absence of arrangements designed for the Territory, Aboriginal and pastoral landholders have enthusiastically taken up the narrower opportunities created by the federal government: most significantly to offset greenhouse gas emissions. In addition to the contribution these offsets make to Australia's climate change action, they produce other benefits, like improved conditions for wildlife and an impressive array of social benefits[ix,x]. For more than a decade, Indigenous emissions abatement projects have over-delivered on targets.

The relatively modest incentives (averaging <$1 ha^{-1}) in savanna burning projects offsetting carbon emissions by better fire management have enhanced the condition of northern savannas over areas greater than the whole of Italy (see Figure 2). Because projects cover such large areas, incomes brought to remote areas with little other private economy exceed $30m pa.

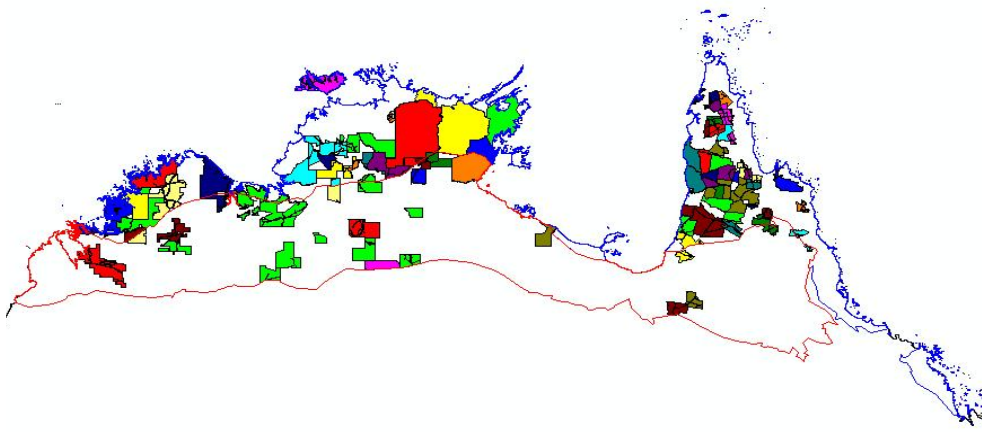

Figure 2: Sites of emissions abatement projects in northern Australia using methods developed in the NT. More than 34 million ha of savanna lands are presently managed to reduce frequency and severity of fire through incentives created by sale of carbon offsets. The red line bounds 600-1000 mm rainfall and blue >1000 mm zones: polygon colours of participating properties are no particular significance.

It is extraordinary that this internationally recognised achievement, driven by Indigenous Territorians and their Territory-based research and government partners[xi], now has no formal recognition in Territory environmental policy and law.

1 Since this paper was prepared, government has committed to offsetting all greenhouse gas emissions from any shale gas development. See https://hydraulicfracturing.nt.gov.au/__data/assets/pdf_file/0006/545343/Fracking-Implementation-Plan_WEB.pdf

The offsets gap in the Territory's environmental policy framework is particularly unfortunate, because Territory lands and peoples are unusually well placed to provide and to benefit from offsets. Most landscapes are relatively unmodified structurally. Loss of wildlife habitat and fragmentation by intensive use are not dominant threats to environmental health. Most landscapes are under pressure from wildfire, feral animals, and weeds: threats that grow and spread when people are absent from their land or lack finance or other resources to manage their land assets actively. There is a large "restoration debt"[xii] spread diffusely over large areas. As illustrated by the fire management success, there is great scope to work in partnership with industry to deliver major improvements in environments by restoring and providing ongoing support for a skilled management presence.

Benefits reach beyond the environment to address the Territory's most important social issues as well. Commercial environmental services that deliver offsets are often best done in remote areas, provided by local landowners and managers who are skilled in caring for country but may lack the formal education and experience to secure other forms of paid work, even if it were available in their remote communities. Much more meaningful and rewarding employment is needed on the lands from which resources are extracted but to which benefits rarely return[xiii,xiv]. Offsets can make more contributions to regional incomes and help build capacities to expand future employment options.

But if offsets are to deliver, clear guidelines are needed to show developers the sorts of arrangements that will be recognised and celebrated by government and non-government interests, as making real and enduring contributions. Those in the community who are interested in providing environmental offsets to complement their other use of land also need to know what is expected of them.

Fortunately, the present Territory government has recently undertaken to restore offsets within wider reforms of the entire environmental assessment process. Less encouragingly, it proposes to delay until a new suite of environmental law is in place[xv]. But given that thoroughly tested offset policies exist throughout Australia and the developed world, is it really necessary to accept further loss of opportunity? It should not be beyond the Territory to make choices about offsets that will be compatible with the improved and more robust environmental assessment system of the future.

What makes a good offset?

Providing offsets generates real costs. So they must produce real environmental benefits: and more of them than would be got at the same cost using other, superficially simpler, methods like tighter regulation. They must focus on issues about which the public are concerned and that industry considers relevant. Offsets must be durable so that they can be guaranteed to last at least as long as the detriment for which they compensate. They have to be measurable so that all parties know what they are getting for their effort and costs.

But most of all, they must be embedded in sound environmental assessment systems so that they can never "buy" approval for unacceptable developments that permanently damage irreplaceable values. In 2012 the Northern Territory passed new law establishing and setting objectives for an independent Environment Protection Authority, which could, with supportive policy and law, provide the robust assessment platform needed for safe application[i,xvi,xvii]. The present reform process has identified many of the principles - clarity of purpose through environmental objectives, better community participation, effective oversight, and transparency - needed to support good offsets.

How do other jurisdictions manage offsets?

Other jurisdictions have developed sometimes elaborate systems for authorising and choosing offsets and quantifying their expected benefits. In Queensland, a number of laws require offsets. The *Environmental Offsets Act* 2014 and associated policy and guidelines establish how offset obligations will be applied to a range of issues[xviii]. Local government actions are covered. Multipliers and formulae are provided for calculating offset requirements in terms of area and cost[xix].

In New South Wales, principles have been established for applying biodiversity offsets[xx] to all development. Policy for major projects[xxi], requires that Environmental Impact Statements identify proposed offsets[xxii]. Very specific, quantitative guidance is focused on effects of land clearing, while offsets for other impacts are handled case by case. Biodiversity Certification processes[xxiii] measure "the impacts that result from removing native vegetation, threatened species habitat and threatened species ... and the conservation measures that may be regarded as improving biodiversity values and ... how and when different conservation measures may be applied to offset losses of biodiversity values on ... (certified) ... land". Certification outcomes influence land use planning. A BioBanking scheme offers a market-based mechanism for accessing offsets. These provisions and related biodiversity conservation laws are under review to bring them into closer alignment, but there is no suggestion that offsets will cease to play a major role in mitigation of development impacts[xxiv].

In Victoria, long-standing arrangements for managing clearing of native vegetation under planning law were recently reviewed. Recommendations include requiring an offset strategy for all applications to clear native vegetation and for strengthening assessment of values at risk, plus early registration of potential offset sites to improve supply[xxv]. Offsets will continue to be an essential part of the Victorian environmental assessment and conservation management system.

The scope of Western Australia's offsets policy includes all projects subject to environmental assessment and permits for native vegetation clearing, as well as requiring approval under planning and mining law[xxvi]. Guidelines, in addition to specifying the qualities of offsets, emphasise processes for effective implementation, including roles of regulatory agencies[xxvii].

Relevant South Australian arrangements are also undergoing reform, but presently require arrangements generating a Significant Environmental Benefit (SEB) to offset any clearing of native vegetation[xxviii]. Methods for calculating SEB are set by the Natural Vegetation Council for implementation under the *Native Vegetation Act.* Guidance is provided on methods[xxix] and costs of generating environmental benefits[xxx] and related issues. Other issues are covered by application of the federal offsets policy under bilateral agreement for environmental assessment[xxxi]. Specific provisions are made for greenhouse gas offsets[xxxii].

The ACT Environmental Offsets Policy and Delivery Framework emphasises matters of national environmental significance specified in federal law (below), but under the local *Planning and Development Act* will provide for offsets for ACT matters. Offsets will be managed to meet both Commonwealth and ACT requirements together[xxxiii].

Under its Resource Management and Planning System, Tasmania treats offsets as an important part of the mitigation hierarchy. Guidance about offsets is given in General Offset Principles and guidelines about assessing natural values[xxxiv,xxxv], and separately for assessing impacts of dams[xxxvi].

A federal policy for offsets covers impacts on matters specified in the *Environment Protection and Biodiversity Conservation Act 1999*[xxxvii,xxxviii], which provides for offsets to be set as conditions for development approval. These matters of national environmental significance are somewhat idiosyncratic because, constitutionally, land and resource management resides with the states. The federal role often originates in ratification of international treaties, which include wetlands, threatened and migratory wildlife. As noted above, bilateral agreements accredit state and territory environmental assessment processes to cover federal expectations on offsets while also meeting

local needs. Unfortunately, there is a risk of skew from important local issues to national foci that may be less affected and less important than matters assigned local priority: and may be less likely to attract the local commitment needed to achieve enduring benefit. This issue and its significance for the Territory is developed further later in this paper.

Internationally, most developed countries use offsets. Over two thirds of countries have legal requirements or policies and many have already implemented or tested various forms of biodiversity offset mechanisms[xxxix].

To summarise, all jurisdictions except the Northern Territory use offsets routinely for dealing with key threatening processes like land clearing and other environmental impacts. They

- adopt rigorous approaches, with often elaborate systems for measuring both impacts and the benefits from offsets;
- make decisions about net benefit entirely on environmental values to avoid confounding with socio-economic "co-benefits";
- back policy by specific law or rely on discretion available to relevant Ministers in regulatory portfolios to set conditions for development approvals;
- include developments subject to formal environmental assessment and extend to other matters like land clearing regulated outside the environmental assessment process;
- when matters of national environmental significance are affected, overlay federal requirements on local arrangements but, unlike the Territory[xl], avoid substituting federal views entirely for local priorities; and
- require offsets to be formally secured, often by strong legal protection from future disturbance.

What's gone wrong in the Territory?

Despite obligations under a bilateral agreement with the federal government to observe the EPBCA offsets policy[xli], the Northern Territory remains alone in past rejection of offsets as a critical component of the mitigation hierarchy. Indeed, the Territory has done more than leave a large gap in the tools it uses to protect environments. The contortions necessary to avoid engaging properly with environmental offsets put at risk principles of sound environmental assessment.

In its guidance on offsets, the NTEPA:

- points to provisions of the *Mining Management Act* authorising the relevant Minister to impose conditions, including protection of the environment and to provide social and economic benefits to communities outside the mining site;
- notes that access to Aboriginal lands requires approval and that innovative packages of benefits may be negotiated to secure approvals;
- urges development proponents to develop "coordinated offsets/conditions packages"; and
- recommends that such packages be developed as part of the consultation for economic and social impact assessment.

With the exception of a determination to avoid involvement in locally-relevant offsets because Territory law does not formally require them, NTEPA's overarching intent is unclear. The Authority does not escape the need to understand and think about biophysical offsets, because it is obliged to consider federal requirements. It is therefore difficult to see this chain of allusions as anything but a contrivance, apparently intended to substitute a financial obligation for locally-significant biophysical benefits, especially on Aboriginal lands. But this apparent invitation for landholders to make trade-offs between environmental and social costs and benefits - effectively outside the environmental assessment process - comes without guidance of any sort about implications for the wider public interest, or how such trade-offs might be formulated.

Environmental outcomes in the Territory will continue to be inferior to those in other jurisdictions so long as local offsets remain unavailable. Unless the NTEPA requires developers to apply superior on-site management practices of a type, quality and cost not required in other jurisdictions,

the Territory will not get the same biophysical outcomes achieved elsewhere through high quality offsets matched to local needs. And there is no evidence that a higher bar has been set for acceptable residual detriment. The recently lodged environmental impact statement for the McArthur River Overburden Management Project[xlii] acknowledges that the mine imposes environmental costs on the regional community and wider public for centuries, yet makes no provisions to offset them.

Restoration of offsets in the Territory is urgent and should not be unnecessarily delayed.

Closing the Territory offsets gap

If the Territory chooses to restore offsets to achieve local environmental management objectives, what aspects of the Territory situation should influence design to optimise benefits?

Territory land and seascapes are mostly “natural”. Away from a few major settlements, they are structurally unmodified and support predominantly native plant and animal assemblages. Essential elements of cultural heritage are widespread (indeed ubiquitous), often embedded in natural features. Major developments almost always cause significant and conspicuous loss of on-site local natural and cultural values. They also entrain varying levels of off-site change through, for example, the movement of gases or polluted waters. Indigenous views of the connectedness of landscapes also mean that impacts on well-being may be felt outside the development site.

A widely accepted high level principle for offset design is to seek no net loss and, preferably, a net gain in environmental quality through offsets[xliii]. Clearly this requires that environmental values at offset sites be improved. Ongoing use of offsets therefore requires a "supply" of degraded sites offering plausible opportunities for rehabilitation of attributes commensurate with those lost. This raises some conceptually and operationally important issues for the Territory.

On the one hand, severely modified sites repairable with a plausible offset project are scattered idiosyncratically, and may raise extraordinarily difficult challenges (e.g. legacy mines). In these severely damaged sites, good matches among impact, site character, and remediation opportunities may be difficult to find. Alternatively, just protecting (as distinct from repairing) sites of equivalent pre-development quality and size in a widespread and abundant environment type may achieve little immediate or measurable benefit.

However, large areas suffering diffuse degradation of values important to Indigenous and non-Indigenous society can be repaired by relatively modest investments. Treating such areas as sources of offsets is critical for achieving the positive change necessary to reach a target of no net loss, but raises issues for demonstrating equivalence. And securing benefits over large areas requires robust institutions that are durable over the long term and operate at acceptable cost.

Issues in definition of environmental values that demand offsetting also require attention. Appraisals of residual damage are often couched in terms of direct physical or chemical change or orthodox conservation biology, with bias to more conspicuous and better understood or charismatic fauna and flora. Given predominantly Indigenous populations living in Territory landscapes outside major towns, these surely should be complemented by Indigenous views of values that require protection or compensation, which will not always align with existing treatments[xliv].

Indigenous participation in the environmental assessment process is too often weak[xlv] because it depends on the (inherently variable and narrowly-focused) skills and commitment of development proponents. Obviously, as owners of half the Territory land area, most of the coast, and holders of important rights over the rest, Indigenous marginalisation from any aspect of the environmental management process is inequitable. But Indigenous landowners are rarely positioned to influence any feature of the process. An important way of ensuring that offsets protect Indigenous people's values will be to ensure that they are engaged in both design and delivery; as key providers. The emerging environmental services industry presents enterprise and employment opportunities that

Indigenous people are particularly well qualified to take up, strengthening strong social ("Closing the Gap") arguments for government, industry and other interested parties to seek Indigenous providers.

These and other issues and opportunities can be addressed by an offset model that, while vigorously pursuing no net loss of environmental quality, adds a focus on building capacity for better management over large areas, within which more intensive smaller-scale offsets can also be secured.

Unscrambling environmental and social benefits

Criticism of past NTEPA muddling of biophysical and social costs should not be taken to imply that there is no connection between biophysical environments and human well-being, or that delivery of biophysical offsets should not aim for socio-economic benefit. Social benefits can and should be delivered without compromising biophysical value, provided clumsy confounding is avoided.

To avoid confusion, an offsets model matched to the Territory situation must consider two conceptually distinct sets of criteria. The first covers features for creating biophysical products credible in national and international forums and with buyers in compliance or voluntary markets. The second addresses features meeting the needs or preferences of offset providers, especially Indigenous landholders. A key goal with this second, social overlay is not to trade environmental benefit off against social credentials, but to reinforce commitment and capability to deliver biophysical benefits.

We deal first with the features needed to assure offset buyers that they are accessing robust, credible products that offer genuine compensation for biophysical detriment in Territory environments. Most of these restate nationally and internationally-recognised standards and policies in a Territory-relevant way, but also add a few Territory-specific features.

Biophysically sound and Territory-relevant offsets

Acceptability of impact: The environmental detriment for which offset is sought must be acceptable in type and magnitude to the local, regional and wider communities.

> Offsets, no matter how attractive, cannot be used to weaken the rigour and quality of environmental assessment or lead to acceptance of projects that would otherwise be rejected because of the nature of their impacts or the importance of the sites affected. This may mean that projects with extreme impacts that distress many in the community and hence may be seen as incapable of relevant compensation would not be considered for offset treatment, even if they receive formal approval. Judgements about unacceptability should explicitly consider Indigenous views[xlvi], but no sector of society should be invited to trade off values important to others through financial returns from offsets or in any other way.

Additionality: Offsets must be clearly additional to on-site environmental measures required of developers under existing legislation or common law duty of care.

> The offset project must make a distinct and substantial improvement in environmental quality at the offset site, going well beyond routine obligations.

Quantifiability (of impacts and offsets): Levels of residual detriment and offset benefits should be quantified using the best available data and methods. This is a technically-demanding task requiring government, industry and/or NGO guidelines and support. No landholder group can "go-it-alone".

> Where quantification presents unusual difficulties, including complexities associated with incorporation of Indigenous and other local values, they should be ranked against other

examples of impacts and their offsets to inhibit slippage of standards. Good records of existing and past offsets will be important here.

Equivalence: Environmental improvement at offset sites must be at least equivalent in quantum to the residual damage at development sites, preferably over all significant attributes impacted.

Additionality, quantifiability and equivalence in combination set a minimum requirement for the biophysical benefits from an acceptable offset. That threshold should not be traded off for other non-environmental benefits. Given difficulties in measuring environmental values, a key mechanism for management of uncertainty is making areas of offset sites larger than impact sites or seeking a multiple of the best estimate of possible benefits to predicted impacts. Ratios of estimated benefits to anticipated damage are set higher when uncertainties are great[xlvii], as will often be the case in Territory environments.

Location: Offsets should be established in landscapes as similar as possible to development sites but other factors should also influence choices.

Offset selection seeks biophysical similarity, including topography, floristics and vegetation structure. Sites close together are more likely to be similar, allowing greater confidence that offsets offer equivalence, but if too close may suffer spill-over. Precise like for like offsets will be unproductive when the vegetation or land unit type is common, widespread and at no particular risk over its range. More effective offsets will be located where the specific important values compromised by the development are known to be present or where greater environmental returns are achievable for the same investment. Location also determines which human communities benefit from the offset arrangement. Poorly located offsets may exacerbate inequities in distribution of costs and benefits.

Unless rare or unique attributes are primary offset targets, site selection should weight successful implementation ahead of precise like-for-like and near-site substitution. Given the state of scientific knowledge of Territory landscapes, precise matches are problematic anyway. This framing differs from some other treatments in favouring practicality and probability of producing real net environmental benefits. It positions offset designers to consider a wider array of options in structurally sound and readily repairable lands.

Security - sustainability / durability: Offsets must be guaranteed, by contractual or other legally binding methods, for a period at least equivalent to the persistence of detriment at the offset site.

This demands not just offsets of the right type, but also enduring institutional arrangements to support them. Design and implementation should address explicitly the offset role in strengthening local institutions capable of high quality management for specific environmental outcomes. Positive steps to build institutional and related capability of private providers is required to secure longevity, not just dependence on government. Capacity should be fostered so that offsets that fail or are withdrawn can be readily replaced.

Cost-effectiveness: Offsets should be established at reasonable initial and recurring cost, so that no plausible alternative investments would produce greater environmental benefits at equivalent cost.

Judgements about costs that developers might reasonably be expected to meet are difficult to specify except case by case, but rules of thumb will emerge with well-documented experience. Providing information on costs and quantified benefits will be an essential component of a durable offset scheme, especially in the Territory where experience is limited. Analysis of cost- effectiveness should take account of the contribution made to community and landholder commitment and capacity necessary to ensure long term security.

Regional priority: The offset regime should contribute positively to local and regional conservation and development priorities or, if this proves impossible, at least be compatible with them.

> Embedding offsets in regionally favourable management regimes will help ensure their integrity by sympathetic management of surrounding sites. Regulatory agencies may be encouraged to support offset security if it can be shown that, in doing so, they contribute to overarching regional or jurisdictional goals.

Accountability: Regular open public reporting is essential, emphasising comparisons of outcomes in detriment at the development site with benefits at the offset site.

> Systems for monitoring and reporting of development effects are too often weak. But they are essential if offsets are to genuinely improve environmental outcomes. Monitoring and reporting costs should be built into funding arrangements. Work will be needed to increase relevance to more audiences than recognised conservation interests, including Indigenous communities. Recent NT improvements in reporting impacts[xlviii] should be built on.

Timeliness: Offsets must be identifiable and implementable without undue delay and realise benefits within a reasonable time. Time lags in establishing offsets challenge achievement of equivalence.

> In emphasising a critical role for Indigenous lands and land managers, it is also important to acknowledge institutional and other gaps in contemporary capacity. Dealing with these site by site will slow offset development. It is important to build a framework for identifying and developing potential offsets somewhat in advance of new development. Development directions and impacts are to some extent predictable, so populating a framework with offset options and potential sites and providers is plausible, as part of a strategy to reduce delays.

Active management: All offset arrangements must include financial and other provisions for ongoing active management for the life of the offset.

> Passive protection of offsets by trying to exclude disturbance is unlikely to be enough in the non-equilibrium systems of the wet-dry tropics. They demand active, well-targeted intervention[xlix]. The value of hand-overs of minor additions to the reserve system is questionable without commitment to long term maintenance and clarity about how to sustain management inputs. Awful fire regimes in three of the Top End's major parks[l] illustrates the folly of relying on formal protection alone. In the Territory, people active on country in meaningful employment is so fundamental as to warrant special emphasis.

This set of attributes framed for Territory-relevance differs from well-accepted policy and practice mostly in acknowledging that like-for-like offsets may not always be the best option, even if practically achievable; and that passive set-asides are unlikely to be effective. Socially-oriented attributes have been less directly addressed in other discussions of offsets. Before they are set out, it will be useful to explore further the connection between options for delivering biophysical environmental improvements and the social conditions prevailing in the Territory.

Territory opportunities

The particulars of the Territory situation, especially gaps in formal scientific knowledge, complicate identification and design of good offsets, but also offer unusual positives. Structural integrity of landscapes means that sites with most of the pieces in place are many, offering more choices than in densely-settled regions. Dealing with diffuse impacts provides options to improve management of large areas at relatively modest recurring cost[li]. Further, regional populations, although sparse, are dominated by Indigenous people with a particular interest and well-developed skills in management of pervasive impacts like fire. More people in more places have more options to contribute - and are likely to be interested in contributing - to offset delivery.

The social disadvantage suffered by many remote populations is both an incentive for involvement and potential barrier, because it affects capacity to take on stewardship roles that both cultural norms and offsets require. In under-developed, socio-economically marginalised parts of the Territory, with much Indigenous land suitable for generating offsets, landowners often have

difficulties accessing financial resources to manage their lands as they would like. In this situation, investments designed to support management of lands while also improving social conditions for local people through employment are particularly welcome[xii,lii]. As already noted, a critical concern is to avoid delivery of local social benefits being treated as pay-off for permission to damage the biophysical environment in otherwise unacceptable ways.

Provided safeguards against such distortions are effective - and changes recently proposed by government for the EIA process should ensure that they are - offset quality is arguably best advanced by building local capacity, and, in the case of many land management services, can be done most effectively through local employment. At a cost of about 50 c per ha, ConocoPhillips and its local subsidiary Darwin Liquefied Natural Gas have supported, in the WALFA project, delivery of high quality biophysical environmental benefits and social benefits together: through employment to deliver well-specified contractual targets. Local Indigenous providers have consistently bettered targets because recurrent funding helped individual capability and robust institutions.

The Territory's conjunction of many options - for low cost, large scale interventions and the potential to draw on local skills to increase remote area employment - is surely an extraordinarily valuable asset for any offset system. In carbon market systems, products that demonstrate **both** social and biophysical (especially biodiversity) benefits are regarded as essential to avoid a "race to the bottom"[liii] and described as premium products[liv]. Considerations that arise in the design process for gaining access to and promoting the resilience of both biophysical values and essential human capital are illustrated in the graphic at Box 1.

Design to increase local incentives and capacity to manage lands and resources is just as important as design for biophysical equivalence. Improved technical and operational competence will reduce risk of under-performance or long-term insecurity. Where a provider has legal and/or cultural obligations for surrounding areas, as will most often be the case for Indigenous providers, the security of the offset site is likely to be optimised by encouraging enhanced and sympathetic management of adjoining areas, including exercise of rights to exclude incompatible activity. Based on experience at sites like WALFA and Indigenous Protected Areas, any costs of socially positive engagement will, with good design, be more than warranted by improved biophysical effectiveness[lv,lvi].

Box 1: Management of offset quality and security

Figure 3 below illustrates the decision space defined by social benefits (the horizontal axis) and biophysical environmental benefits (the vertical axis). Offsets that cause social detriment (position 1) like displacing people from lands they would otherwise use for customary purposes, are clearly unacceptable. Offsets with biophysical benefits that fall below the level of residual damage from the development (e.g. position 2) are also unacceptable, irrespective of social benefit. Offsets with a mix of positive biophysical and social benefits (e.g. positions in the outer yellow or green sectors) may be acceptable, but suitability varies markedly with context.

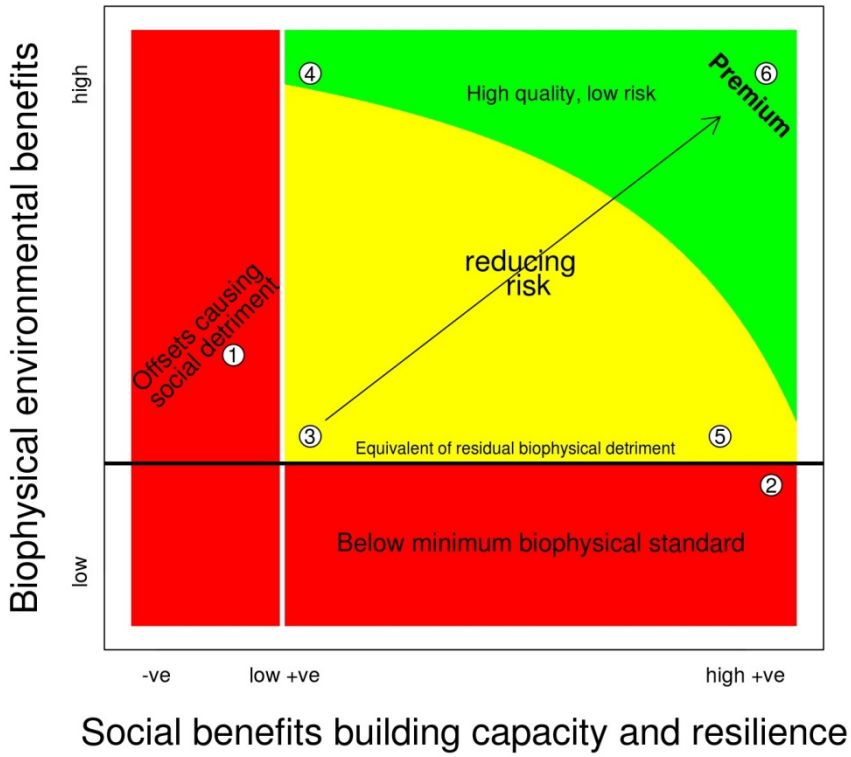

Figure 3: Hypothetical relationships among biophysical environmental and social benefits for offset design. See text for discussion relating to positions 1 to 6.

For example, a like-for-like offset slightly larger than the impacted site (3) might be set up on land over which local people have non-exclusive native title interests but without the provider or buyer seeking much local community support or involvement. Substantial risk of failing to meet biophysical standards - because margins for error in estimates of residual damage and offset compensation are small - is exacerbated by uncertainties about local support. Increasing biophysical benefits by increasing the area of offset substantially (i.e. moving towards position 4) reduces biophysical risk but security will still be compromised by weak local and related institutional support. Better social fit (5) may remove risk of weak support or even opposition, but will not in itself remove biophysical uncertainty.

Risk and ultimately the quality of offsets is best managed by designing explicitly for good social and institutional fit for offsets that also manage biophysical risk effectively. Premium offsets, of both high biophysical and social/institutional integrity (towards position 6), should be sought in all cases, within costs congruent with the nature and level of residual detriment determined during the environmental assessment process.

Designing socially positive offsets

In a recent technical review of issues in biodiversity offsets[xxxvii] to inform international policy, Indigenous interests were invoked once to require "(s)pecial consideration" of nationally and internationally affirmed rights. Such treatment constitutes no more than acknowledgement of the basic obligation to act reasonably and in accordance with law. More broadly, social issues were omitted from detailed consideration on the grounds that "equity among stakeholders and their participation in planning and decision-making should provide an overarching social safeguard".

In the Territory situation, assuming equitable participation is questionable on many grounds, including problems in proper recognition of stakeholders, differentials in weighting stakeholder input, variation in capacity to participate, and weakness or absence of planning and decision-making frameworks to facilitate genuine and productive participation[lvii]. The Territory government has recognised need for change in all of these areas[xiv].

A number of international standards and associated guidance for carbon offsets grapple directly with social issues. They go beyond basic obligation to avoid damage to the interests of local people: to require demonstration of social benefits. Standards such as CCBA[lviii], REDD+ SES, Gold Standard[lix], and Social Carbon[lx] embrace obligations to show that systems improve long term livelihood security and well-being of Indigenous peoples and local communities. Whilst they were often framed with developing countries in mind, the principles of equity and social justice on which they are based are just as important in remote, undeveloped regions of Australia. National social policy calls for all government actors to consider “Closing the Gap” on Indigenous disadvantage in all of their actions. Significance goes much further in a place like the Territory, with a chiefly Indigenous non-urban population. Treating social and cultural issues seriously will often determine whether offsets are plausible at all.

Against this background, the work of Robinson et al. (2011), James (2012, 2013)[l] and Robinson et al. (2016)[lxi], summarising issues identified by Indigenous people themselves as necessary for full participation in offset (carbon) markets, is particularly relevant.

Offsets and Indigenous well-being

Engagement of Indigenous people in external conservation programs is often motivated by desire to regain access to traditional lands and resources to reassert customary land management practice[lxii]. It is unsurprising that descriptions of benefits sought from offsets are similarly motivated.

Indigenous-framed criteria for successful application of offsets include: more opportunities to work on country and/or maintain connections with traditional lands and waters; net positive impacts on livelihood security and well-being; equitable distribution of benefits; recognition and application of Indigenous knowledge; and respectful partnerships. Mention of good process and the relationships it depends on is strikingly similar to that observed in identifying indicators of success in joint management of protected areas[lxiii]. Early in the joint management experience, Indigenous participants put quality of relationships and the resources to sustain them ahead of specific biophysical or cultural indicators of performance. But as experience is gained, traditional owners and managers seek greater influence over selection of targets and the methods used to achieve them[lxiv].

In designing and specifying types and levels of support needed to ensure effectiveness it is unwise to under-estimate divergence between Indigenous motivations and the pragmatic drivers of offset purchasers, but experience shows that differences can be managed. In terms of the conceptual model described here (Box 1), the challenge can be described simply: given what we know of Indigenous perspectives, what features must be added to biophysical criteria for robust and well-

designed offsets to move them from the red or yellow deeply into the green? In James (2013) terminology, the things to get right are:

connection: Connection is about relationships of people with each other and with lands, waters and living things. They are expressed through family, kinship, skin system, and Indigenous law and commitment to specific homelands. No site will lack well-recognised cultural links. Failure to meet obligations in one place will affect neighbouring and sometimes distant sites and people. Recognising the importance of socio-cultural connectedness is little different in principle from the biophysical scientists taking account of physical flows and ecological connectedness.

> Designs or implementation strategies for offsets that explicitly recognise and reinforce such socio-cultural connections will attract stronger commitment and have the potential to increase the aggregate resources brought to bear. On the other hand, designs that isolate sites - say by excluding people with real connections with country or prohibiting aspects of customary practice or ceremony - may be actively resisted, damage social cohesion and so place offset sites at risk.

authority: Persons recognised as holding a cultural legacy from their country accept obligations and are assigned authority. They are the right people to negotiate with and to carry out the wishes of traditional owners.

> It is essential that would-be offset designers or buyers know that they are dealing with those with full authority, not just to allow access to land but to take actions that have full customary authority. Offset selection and delivery mechanisms that work through the wrong people - lacking customary authority - will, irrespective of other forms of formal authority those individuals might hold, attract both formal (legal) and informal (community) challenge, damage social capital and put offsets and community well-being at risk.

knowledge and skill: Offsets will be most robust if designed to use both formal scientific and local (situational) knowledge. Local knowledge may be embodied in traditional theory and practice as well as based on individual experience.

> Design and management regimes that do not apply local knowledge and engage local skills are likely to attract weaker commitment and inferior performance. Denying relevance of the local will compromise the social capital needed to increase capacity and commitment.
>
> Indigenous groups emphasise obligations to transfer socio-ecological knowledge to younger generations, mostly through direct experience on country. Indigenous knowledge encompasses long time horizons at known locations, a perspective that is most often lacking in formal scientific assessments[lxv]. Offset designs and practices that respect local and traditional knowledge to create opportunities for inter-generational transfer will contribute to Indigenous well-being[lxvi] and improved management and offset stability.

seasonality: Much Indigenous knowledge is built around seasonality, related social and ecological cycles. Recognising their relationships in land, water and resource management practice.

> Seasonality is a fundamental component of Indigenous knowledge and practice that warrants emphasis. Offset design and management that give priority to timing actions for compatibility with biophysical and social dynamics will be important in most natural heritage and resource-based offsets. Seasonally-attuned activity will engender a greater sense of continuity and compatibility with community and customary life, reinforcing social cohesion and well-being. But interpretation and application of seasonal thinking and action must be done by those with real knowledge: to whom it has real meaning. Arrangements that fail to take account of beliefs and practices regarding both temporal and spatial linkages of places and events - and peoples' seasonal social commitments - may prove fragile. This risk is exemplified by crude understanding of seasonality in fire use by non-Indigenous workers in Kakadu[lxvii]; and resultant institutionalisation of destructive fire regimes.

power and empowerment: Respect is essential in any genuine partnership: in which both parties understand and accept obligations and entitlements and have the means and confidence to deliver and receive them respectively. A measure of local empowerment is a pre-requisite for entering partnership in the first place, but should be reinforced and grow through positive experiences.

> Improving ability to reconcile customary law and practice with effective and productive partnerships will underpin better planning and more robust institutions for good decision-making. Such positive feedbacks are necessary to build individual agency, social cohesion and, ultimately, enhanced community well-being. Arrangements that over-prescribe method, or assign authority to decision-makers outside the community and so disempower local people and institutions, damage authority and compromise both short term performance and longer term capability. “When economic benefit is linked with authority and responsibility, large increments in social capital can result"[lxviii]. The reverse is also true: when empowerment fails, social cohesion and capacity to deliver on any agreement is weakened.

Credible biophysical offsets that seek strong social credentials for their own sake and/or to drive ongoing improvements in offset quality, security and durability, must incorporate features like these. Some issues like connection, respect and empowerment, and compatibility with other land use practice are important to all landholders and land managers, and so equally applicable to non-Indigenous interests. Other issues strongly shape Indigenous providers' assessment of opportunities and preferred approaches: and hence the offset types they may be willing and able to supply.

Offset designers and buyers should understand these preferences and enablers. To emphasise their significance and the context in which decisions about them will arise, these observations are repackaged below under headings similar to those identifying biophysically acceptable offsets.

Essential features of socially robust offsets

Acceptability: Offsets should avoid risk of loss or reduction of local social capital or damage to local customary or orthodox economies.

> This proposition should be uncontroversial because it reflects basic obligations and is already included in many offset standards. Its strict observance is necessary to maintain offset quality and enduring community support. It invokes principles of equity and respect.

Location: In general, offsets are located to maximise net environmental benefit, which could mean that they are sometimes distant from the development site. However, if relevant offsets are available in a timely way from those who most directly suffer environmental detriment, they should be selected ahead of equivalents available from other providers.

> In a perfect system, communities experiencing direct social and environmental detriment would enjoy a level of compensating benefit that they assess as at least equivalent, irrespective of benefits delivered elsewhere. But the easiest way to deliver biophysical benefits will not always ensure that communities suffering the most direct detriment have first opportunity to benefit from offsetting. Such situations should be avoided where possible. Giving precedence to the most affected local interests as providers is the social analogue of like-for-like biophysical offsets, invoking equivalence of impacts on well-being.

Cost-effectiveness: Socially-responsible offsets should not make significant cost-based trade-offs of environmental benefits for social benefits.

> Recognising social issues in design is based on the premise that good social design will enhance but not substitute for biophysical benefits, at little additional cost. Buyers wishing to claim contributions to multiple (including social) benefits may make correspondingly larger investments to maximise them and validate claims to have contributed.

Match to regional priorities: Where regional landholder or other groups have prepared local conservation or development plans, whether or not formally endorsed by government, offset arrangements should at least be compatible with, and preferably support implementation of, those plans where they are compatible with good environmental outcomes.

> Positive feedbacks among aspirations, experience, capacity development, and offset quality will operate at local scales, so design must be sensitive to local plans as well as more formal large scale statements. Observance will demonstrate respect for local aspirations and make important contributions to local empowerment.

Sustainability/durability: Offset projects should be designed to draw on existing or build new institutions and skills capable of supporting active management over the long term.

> This capacity-building role is at the core of the suggested model for low cost but robust offsets, supported by reliable institutions and a remote, mostly Indigenous workforce growing in skill and confidence.

Accountability (and quantifiability): Offset providers should keep records and agree to make public statements of social benefits derived from offset provision, using metrics or surrogates based at least in part on statements of community aspirations for socio-economic development.

> Discriminating buyers will wish to see evidence of social benefits, especially if they pay a premium price. All buyers will wish to avoid entanglement in suggestions of inequitable or otherwise unsatisfactory access to benefits, and so welcome open reporting.

Additionality: Social benefits realised through work on offsets provision are not the same as and should not be counted towards benefits specified in social compensation packages agreed under relevant law or otherwise to compensate for negative social impacts.

> If biophysical offsets are to be credible, they must avoid any suggestion of double dipping. By the same reasoning if social benefit packages developed to cover social impacts outside environmental offsets frameworks include support for land or resource management, then there should be no requirement to generate biophysical environmental offsets also sought by the developer. Funding for social benefits packages compensating for assessed social impact should not be accompanied by demands to deliver free biophysical offsets.

Equivalence: Socially-responsible offsets should generate environmental benefits satisfying biophysical criteria at costs similar to more routine offsets.

> Social benefits should not enter directly into calculations of biophysical equivalence. However, offsets that contribute to commitment and capacity can reduce uncertainty. Greater confidence about performance and security can reasonably be factored into estimates of the area multiple for dealing with uncertainty (Box 1). If a purchaser seeks formal recognition for additional biophysical benefits and/or social benefits, a premium may be paid.

Timeliness: All offsetting actions should begin as soon as practicable after residual environmental detriment is known. Search for socially optimal offsets should not unduly delay identification and implementation when alternatives satisfying other criteria are available.

> Achieving equivalence depends in part on avoiding delays in offset implementation and lags in effectiveness. In some locations, institutions needed to support commercial activity of any sort - and socially positive offsets in particular - are likely to require strengthening. In order to reduce delays, advance development of offset options matched to likely development pathways will be necessary. This is plausible because directions and locations of development are in some measure predictable and very large projects spend several years in planning. Interests in delivery of environmental services and protection of ecosystem

services should consider creation of appropriate frameworks for developing capability in favourable locations. Where advance workforce development is proposed by developers or governments, then offset framing should accompany those activities.

Active management: Offsets requiring active engagement of community members are more likely to produce enduring social benefits and secure biophysical benefits more strongly than passive offsets.

Active management of land is essential in the seasonal tropical savannas to maintain important values. Direction of part of a development investment into land and resource management for offsets can position local people and communities to take up otherwise unavailable roles and so have an important stake in effective delivery. Active employment delivers socio-economic benefits more directly and more equitably than lease or other payments going solely to traditional landowners.

Monitoring and evaluation: All offset projects must be monitored to verify delivery of biophysical benefits and the same should be true of social benefits.

Validation is an essential feature of offsets under all voluntary and compliance standards. Agreed monitoring and reporting frameworks should include indicators of social impacts on local communities, especially measures of capacity to sustain inputs that ensure security.

This set of features illustrates the value of design to promote good social outcomes, not just because that is an important goal in itself, but also strengthens quality and security of biophysical benefits. Socially- positive and responsible design does not require tradeoff against biophysical equivalence. Good social design will facilitate long term commitment from providers that is essential for offset security.

Provider obligations

Optimal offsets will achieve a tight fit between the nature and quality of products required and the methods, preferences and capabilities of providers. The features outlined above are those necessary to give enough weight to social issues to avoid obviously fragile arrangements, and make useful contributions to capacity. We have also noted where robust offset arrangements will benefits from support from government, industry and/or relevant NGOs. Would-be providers also have to make strong commitments and demonstrate capability.

Offset providers should be able to show how their management is matched to compatible actions in neighbouring sites: and how relationships with other landholders contribute to security. Offset agreements empowering local people will make clear all their obligations, the benefits they anticipate and authority they require. Recognition of all legitimate interests and fair distribution of benefits among participants will be important to assure purchasers that their investments will indeed generate additional social capital and not instead become a cause for dispute.

Proponents should demonstrate in negotiations with buyers how both local knowledge and their familiarity with technical tools will contribute to delivery and reporting. Agreements should focus on specifying the outputs required by the purchaser and/or regulator rather than the particular methods adopted. Methods should, so far as practicable, be left to offset providers, but they will need to show why they are appropriate and how they will measure performance. Taking responsibility for meeting both cultural and contractual obligations in interactions with markets is an essential ingredient for growing capacity to offer more and better products over the longer term.

Offsets will rarely - on their own - sustain a local economy. Activities should work in tandem with other social and work obligations of key individuals, groups and institutions. And where possible, they should be compatible with preferred pathways to other employment and enterprise. Negotiating offsets with local and external support can provide important exposure to commercial

activity, frequently the only direct exposure available to local groups. This experience should be exploited for application to other opportunity.

Approaches to offset design that deliver social benefits are justified by the claim that social capital will ultimately underpin durable, high quality products as capability is enhanced, collaborations reinforced and commitment fostered. If such a claim is to hold up, it will be necessary for providers and their organisations to demonstrate real and effective action to build and maintain capability among individual backed by strong institutions with wide community support. Many Indigenous organisations have demonstrated durable interest and commitment, as evidenced by the great success of collaborative, large scale emissions abatement projects over more than a decade.

Re-establishing Territory offsets: the tasks

Establishing an effective offsets regime is a significant undertaking, requiring framing of policy and (ultimately) new law, developing new or adopting existing standards, designing registries and monitoring systems, and promoting awareness. Given that all other jurisdictions have working examples in place, none of the individual steps should be extraordinarily challenging technically, but aggregate demands are substantial and should not be taken on lightly. The failure of relevant NT government agencies to advance the 2010 trial may have been due to inadequate resourcing and unwillingness to take up new roles when existing obligations were hard to meet.

Direct involvement of the Territory government is perhaps not essential if offset providers choose to operate in voluntary markets or to meet demands created under federal law, but is obviously important to send signals to industry on Territory society's expectations about environmental standards, and reassure the public that good standards will be established and met. Some essential actions - needed whether government is involved or not - are set out in Box 2. The process outlined there is to frame the intellectual and procedural core for a working system. If it appears that government action may be unduly delayed, then non-government interests may wish to proceed with some of this work in advance of government commitment.

Box 2: Some of the work needed to establish and operate Territory offsets

Foundational

(a) affirm interest among key potential participants, initially including government and landowner representative organisations;
(b) given sufficient interest, write a proposal for an offsets framework capturing key issues, including the range of impacts and offsetting responses to be covered, and seek endorsement by potential participants;
(c) identify the actions and other support required from key participants;
(d) adopt standards and other components compatible with the features outlined above;
(e) secure formal endorsement of a specific proposal from essential participants;
(f) promote the proposed framework to potential Indigenous and other offset providers and refine its detail in response to feedback;
(g) promore recognition of the environmental and social significance of offsets in reform of Territory EIA law;

Implementation

(h) maintain a watching brief on statements from governments and industry on development directions and about individual development proposals;
(i) scan NTEPA and DoE (Cwlth) websites for notice of intent (NoI) and referrals or their equivalent under the EPBCA or other relevant federal legislation;
(j) track EIA processes through the same websites, identifying potential impacts for which offsets may provide a useful response;
(k) initiate exploration of opportunities to generate new offset projects or apply existing projects to particular developments;
(l) maintain a database of offset options, opportunities, providers and projects underway;
(m) alert development proponents to opportunities to apply offsets to their project(s) and invite dialogue on standards and potential providers;
(n) alert potential offset providers to emerging or actual opportunities;

Facilitation

(o) on expressions of interest from industry or other developers, facilitate initial design of relevant offsets by interested providers or refine existing projects, including details of institutional support and other essential features;
(p) prepare outlines of potential offset projects, including the type of residual biophysical detriment being compensated, compatible offsets potentially available, and other features including duration, uncertainty and risk and an estimate of cost;
(q) as relevant EIA processes unfold, refine or archive offset proposals as appropriate;
(r) where offsets are required by regulators or seen as desirable and sought by industry, make formal proposals to potential buyers to initiate serious negotiations on supply;
(s) relate development and offset proposals to formal and informal regional or local land use and conservation plans or programs;

Ongoing support

(t) support both providers and buyers to draft related agreements and facilitate related consultations with landowners and their legal representatives;
(u) advise relevant regulators and government agencies of proposals and seek their support to secure protection of offset sites from future incompatible development;

Review and refinement

(v) at regular intervals (at least annually) review policy and practice for effectiveness and identify and implement necessary improvements;
(w) in conjunction with wider Territory EIA reforms, promote enactment of new law on offsets;
(x) promote joined up policy linking initiatives in Indigenous economic participation with improved land use planning and related policy and law.

Initial actions could be taken outside government, perhaps through a loose collaboration of organisations representing landholders and interested NGOs with relevant expertise. But after these initial steps it will be necessary to identify an individual organisation or coalition to take on system construction, operation and maintenance. Long term requirements include:

- The recurring day-to-day challenge to identify and support potential providers to respond promptly to opportunity, as individual development projects roll out or are announced. This function requires careful matching of the (initially few) providers with demonstrated capability to specific developments, plus the knowledge and skills to fill gaps in capability, especially weaknesses in the institutions needed to support long term commitment and performance.
- Fostering new and improved capacity across an expanding range of services. This requires an appreciation of likely trends in demands for particular offset types in different areas of the Territory, awareness of interest and capability among potential providers, and the credibility and resources to develop and help implement training programs, including engagement of new providers in projects run by others or local acceptance of less demanding projects that provide, with appropriate support, good training and testing options.
- Continuing to build, document and oversee application of an offsets framework robust enough to accrue credibility, working with at least tacit support of government, and capable of working at modest ongoing cost.

Given these roles, what might an effective offsets management institution look like? Basic requirements will include: compatible existing functions with no obvious conflicts of interest; technical credibility; durable financing and/or the capacity to create a related viable business; knowledge of and working relationships with relevant industry; and knowledge of landholder interests and capabilities.

Most commercial carbon offset project managers or developers and environmental assessment companies would fail to meet some of these criteria. They are not structured to perform these roles at the sort of costs that emerging providers are likely to be able to meet. In any event, a for-profit commercial operator taking on a key role usually accepted by government would create obvious conflicts of interest. In the absence of government, such a role is best taken on by not-for-profits. However, this large set of features appears likely to exceed the reach of most individual non-government or not-for profit organisations, perhaps requiring some sort of coalition.

Experience in the rest of the world and in other Australian jurisdictions shows that functional arrangements will usually require the active support of government in taking prominent regulatory and administrative roles.

Advancing restoration of the Territory's missing offsets capability, whatever the approach ultimately decided, will require that those with an interest to consider and resolve, at least in the broad, a number of key questions. Some of these are set out in Box 3. These may help inform an agenda for future discussions.

Box 3: Core questions and decisions

A useful way to begin thinking about and starting discussion of the issues raised by an offset system may be to consider some obvious questions and the decisions that may flow from their answers. The questions to follow are intended to pick up interests of government, landowners representative bodies and non-government environmental and philanthropic organisations.

Offsets or not?

Why should the NT use its limited public resources to duplicate what other states and territories are doing with offsets?

> The Territory is required by the federal government to work with offsets whether it likes it or not. The question can be rephrased to ask whether the Territory feels that leaving decisions to the Commonwealth fosters good regulatory process and develops local opportunity in an emerging environmental services industry.

Won't the Territory attract more investment if we reduce red tape by having no offsets and avoid another cost for industry?

> Offsets are a relatively small part of the total cost of development. They are designed to contain costs for developers by providing alternatives to escalating expenses in meeting targets for no on-site damage. If the Territory wants the same environmental standards as other places in Australia, it will be cheaper to do it with offsets than without them.

What sort of offsets?

No net loss or net environmental benefit?

> Some systems and some companies set out to produce a net environmental benefit from their use of offsets. This may be particularly important where past development has caused severe damage and there are many options to repair old damage.
>
> Given that both detriment and offset are hard to measure and this uncertainty requires that offsets aim high rather than risk falling short, the distinction between equivaence and positive net benefit may be somewhat academic. Nonetheless the Territory has extraordinary opportunities to improve environmental condition over large areas through relatively simple actions. It therefore makes sense to adopt a net gain target, but without specifying how big that gain needs to be. This will help avoid the risk of falling short and entrenching ongoing slides in environmental quality.

What sorts of impacts should the Territory try to offset? Why choose those?

> The fundamental purpose of offsets is to compensate society for unavoidable (residual) damage from development. To do this, the developer and/or regulator need to know how big the residual is. The environmental assessment process examines what steps should be taken to mitigate damage and therefore levels of residual damage that may be acceptable. It makes sense to apply offsets to all projects having enough impact to warrant environmental assessment because the size of the offset required will be known.
>
> In many jurisdictions, any removal of any native vegetation or native vegetation of specific types requires offsetting by protecting or restoring a (usually) larger area of the same vegetation off-site, whether the project requires environmental assessment or not. In the Territory, mangroves, rainforests, vine thickets, riparian vegetation and buffers around wetlands are considered sensitive areas subject to special consideration. Impacts of vegetation clearing will always be considered in full environmental assessments, but in isolation not always trigger environmental assessment. Clearing areas of vegetation types nominated as sensitive might also require offsetting arrangements, even outside the environmental assessment process.

In the intensely seasonal or arid environments of the Territory, reduction of water availability or quality can have many and widespread impacts on natural and cultural values. Mechanisms for “reserving” water for environmental purposes are poorly developed, which would make offsets directly based on quantities and condition of water difficult. Usually offsets for changes in water availability will be determined based on impacts on vegetation or the like, but over the longer term consideration should be given to more direct offsetting approaches as a component of improvements in water management standards.

Offsets of cultural values would rarely be considered because treated as irreplaceable (e.g. sacred sites or important built heritage). However, issues in customary use (such as on-site pollution affecting mobile fauna that could move off-site) might be considered for indirect offsets like ongoing monitoring of affected species off-site.

Options are many because the obligations of developers are weakly specified in Territory law, so many positive actions would be “additional” (i.e. not legally mandatory). Additions to the basics could be considered in regular reviews of the contribution of offsets to environmental standards.

Will the Territory need new law for offsets?

Many laws regulating developments provide considerable discretion for regulators to put conditions on approvals. Given that most relevant statutes mention environmental obligations in one way or another, offsets addressing environmental damage directly are likely to be considered within regulator power and so unlikely to attract legal challenge or reversal by the courts. Less direct offsets like funding research may be more questionable. The absence of policy and guidelines make it difficult for regulators to justify offsets in the first place and then to apply them consistently, irrespective of statutory powers.

As was proposed in the 2010 trial, it will probably be enough to issue policy statements and guidelines clearly setting out for regulators the government's intent and matters covered, and to consider the need for new law after experience is gained and other legal changes are settled.

Offset legislation is desirable, however, to provide certainty for industry about their obligations and potential providers about opportunity, so that they can plan accordingly.

Other new law may be required to, for example, establish rights in carbon sequestered in soils and plants, but this need not delay implementation of policy covering other issues.

Will small businesses and small developments get caught up in this?

If offsets are linked to environmental assessment, then small projects that do not go through full environmental assessment will not be subject to offsetting requirements.

What role should the Territory government take?

The minimum role is to provide legal backing for offsets and related mechanisms for ensuring their security. This could be done with entirely new offsets law like Queensland and/or amendment of existing regulatory instruments covering of the various forms of development. Direct government involvement in providing legal security for offsets will be useful. Additional roles could include setting standards.

Although it may be possible in theory to build an offsets system without direct Territory government involvement and rely on a mix of Commonwealth powers, a strong government role can help generate confidence in the robustness of arrangements. There are many different ways in which that could be achieved. In the Territory's financially-constrained situation, avoiding excessive complexity will be important.

Direct involvement of government in offset provision should generally be avoided because there are strong incentives to divert funds to existing functions, which are perpetually under-funded in conservation and resource management.

What role should the NTEPA take?

A key role for any EPA, irrespective of offsets, is to identify the level of residual damage that cannot reasonably be prevented by a development of the type being considered. Even if it takes no other role, the NTEPA should describe the nature of residual detriment and quantify its level to guide regulator decisions about acceptability or otherwise. But accepted best practice is to take a more active role and alert proponents to the probable need for suitable offsets as early as possible in the assessment process.

Where will the standards and guidelines for offsets come from?

All state governments have issued guidelines, many of them very detailed, for applying their offset requirements, and some of these could be modified (usually simplified) for Territory circumstances. But when it comes to offsets that are not strictly like for like, some additional guidance will probably be necessary, especially about acceptable multipliers and what sort of restoration of an offset site will count. Again there are many sources of potential guidance from around the nation and the world, and local adjustments could be made by a science and provider advisory group for government endorsement.

What does an Aboriginal landowner need to do to become an offset provider?

Helping landowners to set up to use their land to generate and maintain environmental offsets confidently is arguably the hardest part of setting up a system. However, many Aboriginal groups are already doing related work to generate greenhouse gas abatement credits and operate Indigenous protected areas. Groups and organisations doing this sort of work are well placed to offer additional services as offsets, like taking on additional finer scale work to protect and rehabilitate rainforests or other special vegetation types. The agreement of West Arnhem Land TOs with ConocoPhillips started with a requirement to offset loss of small areas of rainforest and kicked off the ~$30m pa savanna burning business. Landholders who have previously had mines, forestry, cropping or poorly-managed grazing on their lands might also be able to identify offset sites for rehabilitation.

Because offsets place constraints on alternative uses of lands and landowners must agree to maintain them for long periods, offset agreements will require careful consideration and will make most sense for landholders who have come to a clear view of how they want to use their country in the long term. Agreements will require endorsement by land councils, who have statutory roles to ensure that decisions are fully informed and to assist with negotiations.

How might pastoral leaseholders get involved and what constraints would be placed on their operations?

Areas marginal for grazing or otherwise difficult to manage would be most likely to be considered for offsets. Sites that aren't good for grazing like steep and rocky sites are often important for biodiversity. Options are many, so it is probably best to talk about some plausible examples.

If a rare species like the Gouldian Finch loses some nesting habitat to mining, a neighbouring pastoral property might set aside some of its hilly country that is poor grazing and manage it to favour nesting trees and grasses like *Alloteropsis semialata* that is an important source of seed for the birds, but can be suppressed by unfavourable fire and grazing. Or an area previously cleared may no longer be required for grazing and could be rehabilitated passively or actively to restore a rare or valuable vegetation type. Some of the active work required may be to exclude feral animals from offset sites. Work to maintain the site could be done in conjunction with native title interests.

Just as with Aboriginal landholders, making decisions about participation would be easiest when plans have been made about the longer term development of the property.

How much money can be made from offsets?

The size of the offsets market in the Northern Territory will depend on the way it is approached by government, the range of matters it covers and hence how often regulators require that damage is offset.

Even at the depressed prices paid under the publicly-funded Emissions Reduction Fund, across northern Australia carbon offsets are likely to be valued at more than $100 million per year when sequestration credits become available. Markets in biodiversity credits exist in the other states but will probably be slow to establish here. Natural systems managed to capture, store and purify water are not presently properly valued, but measures that maintain the quality and quantity of surface and groundwater available for environments, cultural use and industry are likely to be increasingly required in the future.

Who buys offsets and how will we know what they want?

Carbon markets are already well established. Many emissions offset providers in the Territory have sold their credits not only to the Emissions Reduction Fund, which offers multi-year contracts, but on the voluntary market, often for much better prices. Conoco-Philips, Qantas and Caltex have been buyers.

Demand and prices for biodiversity-related credits in the states probably do not offer valid indicators of demand or potential prices here, because so little is left of some natural systems and land valuations are so different. But buyers always meet the costs of active land management services, which has been enough in the case of emissions abatement work in the Territory to facilitate return to country, which generates the social benefits that many potential providers and buyers appear to seek.

In general, buyers who seek more than the minimum satisfaction of regulatory obligations want offsets with a strong narrative about tangible conservation benefits in attractive settings, combined with positive contributions to local employment and related social benefits. The Territory has shown that it has extraordinary opportunities to offer these sorts of combinations to create “premium” products.

What sort of monitoring systems will be necessary to demonstrate that claimed environmental benefits are real and actually delivered?

In any market it is essential that buyers know what they are paying for and that the product works as claimed. In carbon markets, this is relatively straightforward because robust systems have been developed and refined over time to show how much emissions have been reduced, or carbon stored. Providers often need to produce these calculations before they are issued with credits and paid.

In the case of biodiversity offsets, calculations will often be less direct. For example, to offset loss of habitat for a threatened species, the work needed to create and maintain a larger area of good habitat nearby will be worked out. Monitoring for success might involve measuring some aspect of the resources that habitat provides, like hollows in nesting trees or abundance of a favoured food (e.g. particular grass seeds) or, preferably, counting how many members of the threatened species are present on the offset site and how that changes through time. Because benefits may take some time to show, providers would usually record the types of work they did, the time spent and the materials used.

In all cases, monitoring and reporting obligations would be matched to the particular type of outcome needed to offset the on-site detriment. Technical problems arise in accuracy of counts, for example, of rare species, but will rarely be insurmountable. Decisions will be needed about keeping the cost of monitoring down relative to the amounts available to do the essential management work.

It is also desirable that measures of the social benefits are also made, so that offset buyers can confidently celebrate those contributions as well. Systems to do this, which include Indigenous views of the benefits and their significance are currently under development.

Why should offset systems favour Indigenous providers?

Developers should be able to choose providers with a good product at a fair price. But the outcome required will differ so much from development to development that a “standard” product comparable across providers will rarely be available. Aboriginal landowners will often be well placed to negotiate fair prices because: they have demonstrated capacity in carbon markets; have particularly strong incentives to succeed in these markets because they strengthen connections to country and are compatible with existing activities on country; and they offer options to foster cultural values in ways that other enterprise may not.

In most Territory locations, especially remote areas, the social licence to operate will require that industry seriously address Indigenous interests and concerns. Engaging local people through work to reduce impacts on the things they value will be an important way of demonstrating commitment to local peoples' interests.

Government support to foster Indigenous participation would also be consistent with social policies, including public procurement policies.

The next steps

The Nature Conservancy and the North Australian Indigenous Land and Sea Management Alliance prepared this paper to outline issues raised by the offset gap in Territory environmental management processes, and to run through the arguments for closing that gap as soon as possible. Influences on design of systems well matched to the Territory's particular needs and opportunities are considered. We believe that we have shown that obstacles to use of offsets are few and minor, in contrast to benefits, which are many and significant.

The organisations propose to take up the need for prompt action with the Northern Territory government and Land Councils, using this and other papers to inform initial discussions. Investments in this work are based on the considered opinion that the Territory's present position can be readily improved to restore offsets as a significant positive contributor to both socio-economic aspirations and customary land management obligations.

Both organisations are committed to continue to work with government, land councils and any other interested parties who may wish to contribute to achieving positive change in management standards for the benefit of Territory environments and community. To maximise benefits from better environmental assessment law, new processes must articulate well with connected activity in land use and planning. We therefore conclude this paper with a brief discussion of important connections.

Connections and context

In other papers we have summarised reasons why present processes work against Indigenous participation in the environmental assessment process[xvi]. In addition to direct changes in EIA processes to improve consultations, apply Indigenous knowledge and, most significantly for this discussion, immediately restore biophysically effective and socially responsible offsets, real and timely impact will depend on complementary actions.

Chief among these is to familiarise Indigenous landowners and rights holders with plausible options for the commercial use of their lands in advance of obligations to consider specific development proposals. Land councils and other Indigenous organisations and groups have long sought support to position Indigenous Territorians to become full participants in the Territory economy, particularly in planning for the sustainable use of their lands[lxix,lxx]. The Territory's mainland land councils are presently engaged in developing a framework for a "bottom-up", landholder and community-driven Economic Development Strategy.

Engagement in high quality land use and estate development planning is arguably the most effective way to address the conflicts inherent in laws demanding, on the one hand, prompt response to complex development proposals requiring changes not previously encountered and, on the other, establishing serious obligations to achieve and demonstrate full, prior and informed consent to those changes.

Processes for design of offsets will also play a key role in positioning people to interact more positively and effectively with industry over development proposals; and also to take up locally-recognised opportunity to apply existing local knowledge and skills. Indigenous offset providers have adapted governance arrangements for delivery of government "grants" (which effectively constitute payment for contracted delivery of environmental services) to participation in carbon markets. These institutions act as vehicles for managing other commercial and financial transactions. And robust local enterprises offering environmental management services also provide assurance to landholders that their obligations to protect important natural and cultural heritage can also be met. Greater confidence in local influence over management of development impacts improves the prospect that landholders will also have the confidence to enter into land use

agreements with outside developers. It will be important that offset policy and law is linked to other government, industry and local programs building related governance capabilities.

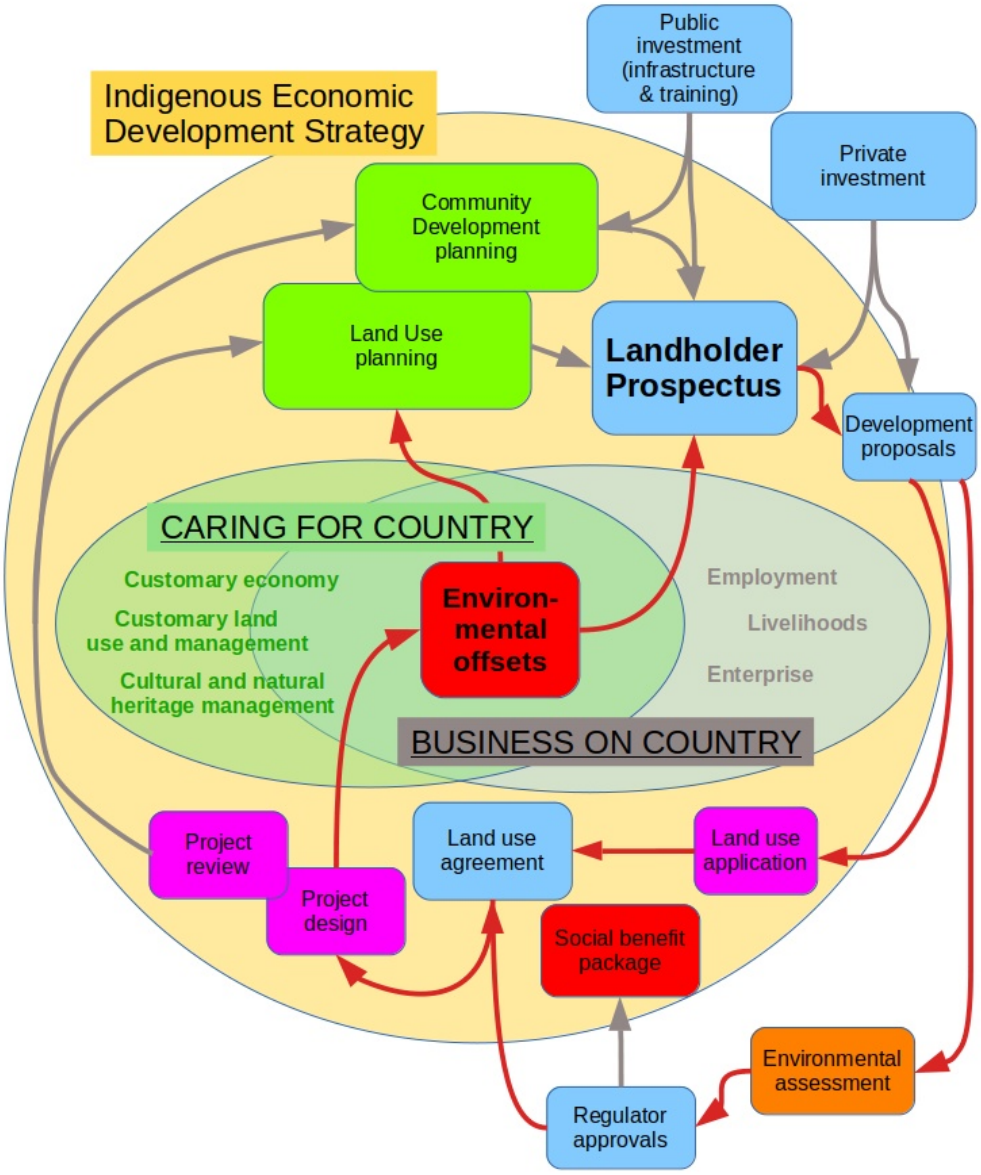

Figure 4: Context for restoration of environmental offsets and their treatment by Indigenous landowners, within the strategic framework developed by the North Australian Indigenous Experts Panel and under consideration by the Territory's land councils. Those linkages where it is expected that biophysical offsets will be require consideration in applications for development on Aboriginal land are shown as red arrows. It is important to note that the overarching Indigenous Economic Development Strategy that would inform decisions and actions taken by landowners is to be developed from the bottom up. Any external (government, industry or NGO) policies or strategies would be expected to be compatible with it.

Simple-minded and coercive approaches to Indigenous economic participation, like reducing local rights to control use of land, imposing shorter timelines on development approval processes, or weaker environmental and other regulatory standards are counter-productive. There are no convenient shortcuts to economic and social empowerment but some pathways are more likely to

reach that destination than others. Some tools and pathways have proven over decades of application and study to be much better than the top-down alternatives, and this is especially true of engagement in land management to achieve both public and private goals.

To get more feet on those pathways sooner, it is essential that environmental offsets are restored immediately, as key contributors to enhanced livelihoods, better management of land and well-being more generally. And that restoration is accompanied by complementary action in linked policies and programs.

Contact for additional information

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