URBAN GROWTH MANAGEMENT IN NEW SOUTH WALES: MARKET-BASED APPROACHES FOR NATURAL RESOURCE CONSERVATION

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INTRODUCTION

Urban growth management in New South Wales (NSW) has had a patchy history. Deficiencies have existed at the State level for example, in the policies and mechanisms for the management of the impact of development on natural resource values and environmental quality. Included in this scenario are various market-based instruments, the utilisation of which have been part of the Australian policy and regulatory landscape for more than two decades. Investigation, advocacy and, in some specific instances adoption, of a hybrid approach of regulatory, and statutory and policy-based economic, instruments has been evident over this time in the areas of urban planning, environmental protection and resource management (Williams, 2004). Yet despite this earlier promise and enthusiasm, the reality is that the extent and successful application of market-based tools in the Australian planning systems has been somewhat underwhelming. One reason for this poor record is the long-standing reliance on traditional 'command and control' approach using mechanisms such as land use zoning, development standards and other regulatory tools. Further, as market-based mechanisms constitute a more recent public policy approach, they are possibly a less understood planning tool that has been perceived to challenge the traditional regulatory framework. As a consequence there has been some reluctance on the part sections of government and other stakeholders to fully embrace this option to complement other planning other tools such as regulation.

This paper considers the potential benefits of market-based instruments, particularly from a property rights perspective. The paper examines two types of market-based instruments – transferable development rights (TDR) and tradeable offsets – that have been utilised in NSW. Several past and current TDR and tradeable offsets schemes are identified, ranging from schemes designed to conserve heritage buildings, agricultural land, scenic landscapes and biodiversity, and protect water quality. Review of the application of these TDR and tradeable offsets seeks to identify both problems experienced and benefits achieved. Identification of the difficulties faced and successful elements of these schemes permits the distillation of the necessary ingredients or conditions if market-based instruments are to be more fully implemented as part of the range of policy options or tools available to achieve planning and natural resource objectives.

Development control in NSW operates within the framework of what can be described as a *regulatory based statutory planning system* (Williams, 2007). This emphasis on regulation through statutory planning continues to have its advocates for both philosophical and practical reasons. From a conceptual perspective, regulation of development – 'development control' – is seen as fundamental to planning (Dawkins, 1996); at the same time, from a practical viewpoint, it is argued that regulation and prescriptive planning controls promote greater certainty and consistency in decision-making (Walton, 1997). The defining character of such 'command' regulation is its obligatory nature – it involves an authoritative relationship between the individuals or groups being regulated and the government (Stone, 1982).

Although the statutory and regulatory emphases remain in Australia – particularly in the form of land use zoning – more recently planning approaches influenced by United States systems of financial and planning incentives have emerged to complement this traditional 'command and control' regulation hegemony. Part of a self-styled 'smart regulation' package, these seek to give Australian planning systems greater flexibility through the use of market-based mechanisms and financial incentives (Gunningham and Grabosky, 1998). These tools include planning bonuses, green offsets, and the acquisition of development 'rights' pertaining to land. Often these also involve the utilization of traditional common law mechanisms such as covenants and easements. One sphere of application of this hybrid mix of planning approaches and tools is the protection of biodiversity and other natural resource values such as agricultural lands in areas subject to urbanization. Further fields of application of hybrid regulatory and market-based mechanisms include heritage conservation and landscape protection.

MARKET-BASED MECHANISMS

One of the attractions of a planning approach which incorporates market-based mechanisms, especially when used in concert with the existing regulatory framework, is that it can assist in overcoming one of the challenges traditionally faced by planners, namely problems arising from the restriction of real or perceived property rights through planning regulation. For example, problems have existed in recent years associated with managing the urban growth of Sydney in terms of the intersection of perceived property rights and the protection of natural resources such as biodiversity. Pertinently, the singular reliance on traditional 'command and control' regulatory approaches as both a cause and ineffectual solution to the problems faced in biodiversity conservation in the context of property rights has been highlighted (Williams, 2010).

One suite of market-based tools available to planners to manage development and its adverse impacts on cultural and natural resources involves the voluntary acquisition of the development potential or 'rights' pertaining to land. These rights may be acquired either through purchase by a public agency (that is, purchase of development rights – PDR), purchase by a private developer and transfer to another parcel of land (that is, transfer of development rights – TDR) or by donation by the landowner to a public agency, that is, 'donated' development rights (Wright, 1993), also generally referred to as conservation covenants in Australia or conservation easements in the United States (Gunningham and Grabosky, 1998, p.318). By way of clarification, this latter tool does not necessarily infer donation of development rights as a gift, as some payment is usually involved, but in the sense that the landowner freely chooses to have a covenant placed on their land in return for some form of compensation payment. Voluntary-based policies and incentives to achieve natural resource management and land preservation objectives may be contrasted with other market-based approaches such as tradeable offsets which are more reliant on regulation to ensure their implementation. This nuance of different market-based and economic approaches is discussed further below.

Any consideration of market-based tools must take place within the context of property rights and the various approaches to urban, environmental and natural resource management. TDR for example is described as a property rights-based tool since a development 'right' may be perceived as one of a number of rights accruing from ownership or other interest in property. Fundamental differences however, can be identified in the practical application and consequences of the concept of property rights. Specifically property rights have, depending on the approach taken, been ascribed as constituting an example of an economic or market-based instrument or alternatively, of being a manifestation of free market environmentalism.

Market-based instruments may incorporate the following elements: property rights; market creation (that is, creation of a market by government where none previously existed – for example of tradeable pollution or resource rights, individually transferable property-right mechanisms and certain offset arrangements); covenants and easements; leasing and licensing; fiscal instruments and charge systems; financial instruments; performance bonds; and deposit refund systems. Free market environmentalists however, "argue not only in favour of a more precise allocation and specification of property rights, … but also for the substitution of free markets for legislative solutions, to regulate the exploitation of virtually all natural resources and sources of pollution" (Gunningham and Grabosky, 1998: 84). Market-based instruments can be clearly distinguished from free market environmentalism "in that the regulator still dictates environmental aims through the manipulation of price signals or tradeable permits" (Gunningham and Grabosky, 1998: 83-84).

Under the laissez-faire land management regime of free market environmentalism, development rights are argued to be compensable if restricted in any way, such as through land use regulation. However, under a more moderate economic or market-based instruments perspective, property rights may be purchased and/or transferred, in accordance with, if necessary, a regulatory-mandated scheme. In this sense, many forms of economic instruments – including property rights and market creation – have been envisaged as a hybrid between free market environmentalism and direct regulation (Kinrade, 1995: 96), or even as market-based variants of regulation, rather than alternatives to regulation (Gunningham and Graboskey, 1998: 83). It is within this fusion of mixed economic instruments and regulation – which has been termed 'smart regulation' – that tools such as TDR and tradeable offsets should be posited. Thus, to the extent that such tools require the active involvement of regulators to work, they clearly fall within the scope of economic or market-based instruments rather than free market environmentalism, despite their conceptual basis in property rights.

The concept of property rights is integral to schemes such as the transfer and purchase of development rights. Faced with the power and influence of the property rights movement (along with the relative weakness of zoning), in the US the challenge to land use managers and planners has been to devise planning mechanisms which respect the integrity of private property on the one hand, and yet still achieve public objectives in resource and environmental planning and policy on the other. It is in this context that creative ideas and mechanisms such as transfer of development rights, purchase of development rights, and the

facilitation of non-profit, public interest land trusts, have come to the fore in the US (Jacobs, 1999: 147). It is the contention of this paper that similar challenges are emerging in Australia, and that similar mechanisms need to be more fully embraced.

Within the modern system of formalised land tenure the bundle of rights that constitute land ownership are often consolidated in the hands of a single 'owner'. As a consequence many of the subtleties that historically allowed other right-holders to access, use, or influence the disposition of land are lost. It has been argued that this process of simplifying tenure arrangements to individual ownership, and then influencing behaviour by imposing regulations, is not necessarily optimal or even necessary (Wiebe and Meinzen-Dick, 1998). More refined and flexible approaches include a focus on partial interests in land. By allowing voluntary acquisition and conveyance of specific rights for specific uses, partial interests offer this more refined alternative to a strictly regulatory approach or trading full ownership rights (Wiebe and Meinzen-Dick, 1998). In the US the acquisition and conveyance of partial interests to land has proven to be a popular, flexible and effective tool for land use and conservation policy. Schemes such as the purchase or transfer of these interests or rights have allowed public agencies and private non-profit conservation groups to influence the use of public and private land without incurring the political costs of land regulation or the full financial costs of outright land acquisition. It is a voluntary approach to influencing land use, by offering landowners financial incentives for environmental conservation, restoration, and preservation.

Development rights have been viewed as one of a number of rights embodied in the ownership interest in property. These development rights have been classified as a real property interest, which entitles the owner of a fee simple interest to deal with the land as the owner wishes, subject only to government regulation, principally through zoning (Arnold, 1992; 470). However, the right to transfer development rights is not ordinarily part of the bundle of rights that comes with land ownership: because in Australia at least there is no right to develop land except within the terms of planning instruments. Government may therefore need to enact specific legislation to legalise the sending of a development right from one parcel to another (Daniels and Bowers, 1997: 172). Once legislatively sanctioned, an owner may separate and transfer one of the rights incidental to ownership whilst retaining the other rights (Arnold, 1992: 470).

Use of TDR schemes – in relation to heritage building conservation – can be traced back to the 1970s in Australia. Over the past ten years or so a hybrid approach of regulatory and policy-based economic instruments has been advocated in the areas of environmental protection and resource management as well (Williams, 2004: 108). At a national level for example, the use of market-based instruments in natural resource management was investigated by the Commonwealth Departments of Agriculture, Fisheries and Forestry and the Environment and Heritage, as part of the National Action Plan on Salinity and Water Quality (DAFF, 2002), and also advocated by groups such as IUCN (the World Conservation Union) (Figgis, 2004; IUCN, 2004). These economic instruments have mainly included trading mechanisms such as tradeable offsets, which can take several specific applications such as carbon (greenhouse gas) trading, salinity and native vegetation protection and regeneration. Analysis of the operation to date of TDR and offset schemes in NSW is provided in next sections of this paper.

TRANSFERABLE DEVELOPMENT RIGHTS SCHEMES

In essence, TDR is one type of planning tool that seeks to compensate landowners whose development rights have been restricted by regulation. Compensation is achieved by allocating to those owners an amount of development that may be transferred from the restricted site to another site (Bindon, 1992). Fundamentally, under this government-created program development rights are severed from a parcel designated for protection ('sending area'), and the severed rights are transferred to a parcel in an area where additional development is permitted ('receiving area') (Johnston and Madison, 1997). The scheme thus allows more development on the receiving parcel while reducing or preventing development on the donor parcel. Under such a program, the development rights of the sending parcel may be either sold by that owner to the owner of the recipient parcel, or transferred directly from the donor to the receiving site if they are under common ownership. The number of development rights that can be transferred depends on how many development-rights 'credits' a planning authority allocates and how much it allows in areas designated for growth (Daniels, 1999: 224).

Like all markets, markets in TDR must possess a number of attributes to efficiently allocate resources – in this case the conservation and development of land. The first attribute is a relative scarcity in TDRs, which occurs when supply of development potential is less than demand. Supply is limited through development restrictions and additional development is only allowed through the purchase of TDRs. Second, rights need to be well defined, tradable and enforceable; third, large numbers of buyers and sellers are necessary; and finally there needs to be low transaction cost, aided by perfect information (Ryan, 2004: 6).

TDR has several attractions to commend it which revolve around its 'respect' for property rights and its capacity, when used in concert with regulatory tools, to help achieve a number of planning objectives. It is a voluntary approach to influencing land use, by offering landowners and farmers financial incentives for conservation, preservation and restoration. TDR protects land (such as land of high agricultural, conservation or landscape value) permanently, while keeping it in private ownership; TDR programs are market-driven, with the private sector paying to protect land; TDR promotes orderly growth by concentrating development in designated receiving areas; and TDR programs can accomplish multiple goals such as land protection and the development of compact urban areas (American Farmland Trust, 2008).

TDR is a (hybrid) market based mechanism under which developers pay for preservation in return for additional development potential. Where a TDR scheme is in place, a developer buys development rights, with zoning provisions identifying the number of additional units allowed in designated receiving areas. TDR is therefore effective when the TDR option is more profitable than the non-TDR option for landowners and developers. The motivation for utilizing this scheme is the ability to sell and transfer development rights – thereby increasing residential densities in targeted sites – and yet retain land and appropriate uses in receiving areas. Schemes such as the purchase or transfer of these interests or rights have allowed public agencies and private non-profit conservation groups to influence the use of public and private land without incurring the political costs of land regulation or the full financial costs of outright land acquisition (Wiebe and Meinzen-Dick, 1998).

A TDR scheme offers a means of removing inappropriate development rights without unilaterally extinguishing them. This tool provides a means of reducing development potential in areas identified for protection without the costs of compensation to the local or state authority. Herein lies the driving rationale of a TDR scheme – owners of conserved land are compensated by developers who are able to profit from higher densities while securing significant areas for the benefit of the community at minimal cost to government. Protection of property rights should be, however, seen only as a partial justification for implementing a TDR program.

Indeed, in Australia there is no such inherent right to develop land; rather a property owner may have the right to seek development consent, after the granting of which, development for the specific purpose approved can legally commence before the consent lapses after a prescribed period. Nevertheless, in practice the Australian experience is that a landowner may have certain development expectations based on the applicable statutory planning controls. Implicit in the controls is a perceived probability of gaining approval for a certain type and quantity of development (Bindon, 1992; 136). As a consequence, the fundamental principles behind the US model has been recognised and adopted by several local councils in Australia that have established TDR systems. These include heritage conservation in Sydney, Adelaide, Melbourne and Brisbane (Ryan, 2004), protection of the Mount Lofty Ranges near Adelaide, provision of open space and conservation reserves in Gosford (NSW), urban growth management in Wellington (NSW) and protection of the Illawarra Escarpment near Wollongong (Williams, 2004).

The most successful TDR schemes to date in Australia are undoubtedly those relating to built heritage conservation. Successful heritage floor space transfer schemes have been operating in the Sydney and Brisbane CBDs for many years. These are discussed further below. With respect to natural heritage and resource conservation however, it still appears that Australia is yet to apply a full TDR program. Rather, a number of councils have implemented 'bonus' development density programs, which "allow owners to conserve or donate part of their property in return for developing the remainder of their site at a higher density. Under these schemes no tradable instruments are created, there are no trades between sites and no market created in development rights therefore they are not true TDR programs" (Ryan, 2004: 2).

Despite a number of past and current examples of transferable development rights schemes in Australia, apparent reluctance for more widespread use of TDR as a planning tool remains in NSW. This is despite TDR being identified as a tool worthy of consideration, for example, in the NSW *Plan First* planning system reforms a decade ago (DUAP, 2001). Three reasons can be advanced to explain this situation. First, the utilization of market based tools is still relatively recent in Australia. There has been a tradition of reliance on 'command and control' regulation in Australia, which is quite different to the history of market based tools in the US and bargaining for planning gain/negotiated planning agreements in Britain. Second, there is a lack of understanding of the TDR mechanism by planning decision-makers (both politicians and planners). Third, there is ongoing legal uncertainty and impediments surrounding TDR. Evidence of the present legal impediments to the more widespread adoption of a TDR scheme in NSW include expression of doubt by the NSW Land Environment Court about the legality of TDR schemes (see for example *Leighton Properties Pty Limited v North Sydney Council* [1998] NSWLEC 39), concerns raised by a Commission of Inquiry regarding the transparency of Wollongong City Council's TDR scheme for the protection of the Illawarra Escarpment

(CoI, 1999), and ongoing reluctance by the NSW Parliamentary Counsels Office to support draft statutory plans produced by local councils that seek to include TDR provisions.

Over the years a few peri-urban local councils have tried to implement TDR schemes as an urban growth management tool, but there clearly needs to be a strong policy commitment from the State Government for it to work, not the least because to operate successfully such a scheme needs to apply across regions or indeed the entire state, and not just within local government boundaries. A TDR scheme had been considered by Camden Council, a local council in one of the areas of Sydney's greatest urban growth – the two *Sydney Growth Centres* – as a mechanism to maintain or possibly extend conservation corridors within one of the Growth Centres. In its strategic planning document *Camden 2025*, the Council advocated the investigation of the opportunities for the implementation of a TDR scheme as part of a suit of planning controls consistent with Council's identified landscape preservation objectives (Camden Council, 1999: 16-17). *Camden 2025* advocated the investigation of the opportunities for the implementation of a transferable development rights scheme.

Hawkesbury City Council has also investigated the feasibility of introducing a TDR scheme, believing that if a clear urban growth strategy and strong commitment to protection of agricultural land exists, then a transfer of development rights should be achievable in identified areas. Council's Strategic Planning Committee had spent some time investigating this issue, which was promoted by Council planning staff (Hawkesbury City Council, 2007: 18-19). Reluctance on the part of DoP due to legal impediments under the EP&A Act – in that the Act did not confer a right to develop – was cited as the reason for not proceeding further with these investigations. To placate DoP concerns that development rights per se do not exist under planning statute in NSW, Hawkesbury Council adopted the term *planning credits* – similar in operation to a green offset. Council officers found however, that to work properly, a regional approach was required, which of necessity would require DoP participation. Despite these obstacles, the actual formulation of TDR provisions and drafting into an appropriate statutory planning instrument was perceived to be a quite straightforward exercise.

OFFSET SCHEMES

Under an offset arrangement, industries or resource users are given the choice of either offsetting the damage they cause or paying an authority to do it on their behalf. The provision of an offset is a mandatory requirement or condition of the granting of approval to undertake development with potentially adverse environmental impacts. The arrangements operate partly through regulatory mechanisms such as permits or approvals, and partly through a market-based system, which allows one property owner who undertakes some form of environmental restoration to sell offset credits to another owner or industry seeking approval to undertake development.

Offset schemes are gaining prominence in Australia. Examples of the operation of this type of instrument in NSW include the Green Development Offset Scheme (NSW Government, 2002), and the use of offsets with respect to salinity and native vegetation (DLWC, 2001). The Green Development Offset Scheme was introduced by the NSW Environment Protection Authority to reduce water pollution in the lower Hawkesbury–Nepean River, water pollution in the drinking catchments of Sydney, and air pollution in the greater Sydney metropolitan area. The South Creek Nutrient Offset Pilot, a two-year voluntary project launched in August 2003, was the first pollution offset scheme to be trialled in NSW. The South Creek catchment covers an area of 620 square kilometres and represents 30% of the Sydney region. A significant amount of Sydney's new urban development is to occur within this catchment over the next 20 years. The pilot scheme allows developers and land owners that cause pollution and so need an environment protection licence, to offset nutrient loads by reducing pollution at locations outside (but within the catchment) of their sites (EPA, 2001).

The potential to rely on offsets for dealing with salinity and native vegetation management has existed in NSW for several years (DLWC, 2001). *Property vegetation plans* prepared under the *Native Vegetation Act 2003* ('NV Act') provide the strategic framework for native vegetation management in NSW (Farrier and Stein, 2006: 419). It is initiated voluntarily, may apply to one or more landholdings and must receive the approval of the Minister (NV Act, ss 26(1), 27). In terms of offsets, a property vegetation plan that proposes broadscale clearing of native vegetation cannot be approved unless it "will improve or maintain environmental outcomes" (s 29). Property vegetation plans may also utilise other natural resource management tools – for example a plan may provide for financial incentives to be available to landowners (s 28(d)).

In relation to native vegetation, offsets schemes aim to ensure that the negative impacts of clearing are offset by separate actions that have positive impacts. Offset actions could include improving the management of existing native vegetation, restoring or regenerating an area of degraded vegetation, or

revegetating a previously cleared area. Offset actions could take place on the same property as the clearing or, alternatively, be tradable, whereby the impacts of clearing on one property are offset by action on another property. The applicant seeking to clear would buy the required offset credits from the owner or land manager who had undertaken the beneficial action.

Offsets are increasingly promoted as a tool for facilitating biodiversity outcomes from development proposals. Offsets are meant to "enable impacts on biodiversity to be counter-balanced by action taken elsewhere" (DECC, 2007a: 5). The *NSW Biodiversity Banking and Offsets Scheme* was established in 2008 following amendments in 2006 to the *Threatened Species Conservation Act 1995* ('TSC Act', amended by the *Threatened Species Conservation Amendment (Biodiversity Banking) Act 2006* (NSW)). Introduced through a new Part 7A ('Biodiversity Banking') to the TSC Act, and known as 'biobanking', this biodiversity offsets and banking scheme is site or project specific and is linked to the development approval process under the *Environmental Planning and Assessment Act 1979*. Biobanking is an example of an offsets scheme that, as applied in NSW, has specific application to natural resource-sensitive urban growth management. It aims to achieve more predictable development and conservation outcomes by guiding development to appropriate places, and to promote private land conservation through income generating opportunities for landowners who provide biobank sites. Landowners create tradable credits by establishing biobank sites and earn income from managing land for conservation.

The NSW BioBanking and Offsets Scheme seeks to address the loss of biodiversity by enabling landowners to establish biobank sites to secure conservation outcomes and offset impacts on biodiversity caused by development. Conceptually, this is achieved through the use of an 'improve or maintain' test for biodiversity values, which means avoiding significant biodiversity conservation areas and offsetting impacts in other areas (DECC, 2007b: 4). The offsets are measured in terms of credits, using the published *BioBanking Assessment Methodology* (DECC, 2009a), and developers participating in the scheme are required to meet this improve or maintain test based on the impact of their proposed project. Under the scheme, biobank sites may be established by means of biobanking agreements entered into between the Minister and the owner(s) of the land concerned.

The BioBanking Scheme has four key components (DECC, 2009b). First, the establishment of biobank sites on land through biobanking agreements between the Minister for Climate Change and the Environment and participating landowners. A biobanking agreement is similar to a covenant and is attached to the land title. It runs with the land, and generally will have effect in perpetuity so as to offset the impacts of development on biodiversity values. Second, the creation of biodiversity credits for management actions that are carried out, or proposed to be carried out, to improve or maintain biodiversity values on biobank sites. The *Biobanking Assessment Methodology* is the tool used to determine the number of biodiversity credits that may be created for these management actions. Third, the trading of credits, once they are created and registered. The final step is enabling the credits to be used to offset the impact of development on biodiversity values. The assessment methodology is used to determine the number and class of credits that must be retired to offset the impact of a development and ensure that the development improves or maintains biodiversity values. Yet a concern which goes to the core of biobanking is whether overall biodiversity can truly be maintained (let alone improved) by offsetting. Biobanking "appears to operate on the questionable premise that areas of conservation value may be substituted by other similar or nearby areas" (Gurran, 2007: 280).

Managed presently by the NSW Office of Environment and Heritage, biobanking has not necessarily been enthusiastically received to date by other State agencies such as the Department of Planning for two reasons – first it is still largely at the conceptual stage and second the 'devil in the detail' of the operation of the scheme. Issues going to the heart of biobanking include whether overall biodiversity values can truly be said to be maintained by offsetting, how to determine the standard required for on-site environmental protection, and monitoring and review (Robinson, 2009: 220). The 'improve or maintain' test may be particularly difficult – if not impossible – to achieve given the high conservation value of the remaining biodiversity and ecological communities in the Sydney Region. The integrity of the 'improve and maintain test' has been questioned by environmental groups such as the Environmental Defender's Office for example (EDO, 2010). Disagreement exists in relation to the identification of appropriate offset ratios – i.e. the ratio of conservation land to offset developed land – with this generally well in excess of a simple 1:1 ratio. Department of Environment, Climate Change and Water (DECCW) calculations using the *Biobanking Assessment Methodology* suggest that offset ratios in the order of 7:1 will be required in the Sydney Region to meet the 'maintain or improve biodiversity values' test, representing a level of cost of land acquisition that developers will not be able to pay. While "experience suggests that developers generally prefer the flexibility of negotiated offsets rather than applying a set formula" (Connolly and Fallding, 2009: 143), organizations such as the EDO believe that there should be a clear regulatory requirement setting minimum offset ratios applying to all offsets (EDO, 2006: 5).

Nonetheless, the problem remains that the *BioBanking Assessment Methodology*, on which the biobanking scheme is based, recognizes that the biodiversity values in some areas of high conservation significance – referred to as 'red flag areas' in the methodology – may not be possible to offset because the loss in biodiversity values from clearing such communities cannot be offset by actions elsewhere. Red flag areas are areas that are important for biodiversity conservation and cannot easily be replaced. They include over-cleared vegetation types (including endangered ecological communities) and threatened species populations or habitat which cannot withstand further loss because only a small number of populations remain and/or all viable populations are considered essential for the survival of the species (DECC, 2007b: 6). The unpalatable reality is that the State Government may not be able to fully implement the biobanking scheme in the urban areas of NSW because from trials conducted by DECCW in Western Sydney (and the same scenario is likely along much of the NSW coast) most of the remaining developable land is automatically 'red flagged' under the methodology because it contains endangered ecological communities. This means that it is extremely difficult for developers and landowners to meet the 'maintain or improve' test, and so in all likelihood cannot participate in biobanking.

Concerns have also been expressed by some local councils in the Sydney Region about the location of biodiversity offsets. Such councils have argued that the offset sites should be located in the same local government area that the development is occurring, whereas some State Government agencies believe that the funds generated under the BioBanking Scheme could be better used to conserve larger areas of land outside the Sydney Region, where land acquisition costs are cheaper. Further, problems arise in relation to development pressure on smaller blocks in urban areas where the site is too small for offsetting to occur and so has to be situated elsewhere. As such offsets may not be able to located within the same local government area, a regional scheme was perceived as being required. Finally, problems have arisen in situations where developers have sought to offset the loss native vegetation on development sites with biobank sites containing ecological communities of inferior conservation status, contrary to the principles of the Biobank Scheme (DECC, 2009c).

Biobanking in NSW is still in its infancy – indeed at the time of writing only six biobanking agreements are listed publicly (OEH, 2011), although several have been shortlisted as either potential biobank sites, development sites or joint biobank/development sites. One reason for the reluctance to take up biobanking is the complexity of this mechanism, and the ability to achieve the same outcomes through less prescriptive voluntary planning agreements (VPAs) under s 93F of the EP&A Act. VPAs permit planning authorities (local councils and the Planning Minister) to negotiate planning benefit or gain with developers as a consequence of granting development consent or approving a rezoning application.

CONCLUSIONS

Where does this preceding discussion leave market-based instruments in NSW and what are the general prospects for schemes such as TDR and offsets?

Several NSW State and local government organizations have considered the use of TDR as an urban growth management tool, but any initial enthusiasm was generally extinguished by discouragement of its use by the Department of Planning ('DoP') and/or problems presented by the EP& A Act. Here, the argument rests on the fact that the Act does not presume a development 'right' – instead development is determined by land use zoning and other provisions in EPIs – and all that the Act permits is the right to seek development consent. The NSW Department of Environment, Climate Change and Water has for some time tried to persuade DoP and others to adopt a TDR scheme, and this was one of the options identified in its *Biodiversity Planning Guide* (Fallding et al, 2001). This was opposed by DoP on the basis that it creates a system of rights that landowners actually do not have.

Based on the design of existing successful built heritage TDR schemes, there are a number of ways in which a TDR program could be enabled at local government level. One option is to include provisions within a policy, such as Sydney City Council's former *1971 Floor Space Ratio Code* (Bindon, 1992). Alternatively, the policy could be codified, i.e. placed in a statutory based code or policy document, such as the *Brisbane City Plan 2000* (Brisbane City Council, 2000a). This includes transferable floor space provisions within the *City Centre Neighbourhood Plan Code* which forms part of the *City Centre Neighbourhood Area Plan* (Brisbane City Council, 2000b). Finally, a TDR scheme may be given force of law by being incorporated into an environmental planning instrument, as is the case with the Heritage Floor Space Scheme under clauses 60 and 61 of the *City of Sydney Local Environmental Plan 2005*. Under this statutory instrument, heritage floor space (HFS) can be sold and transferred to a development which is required to purchase HFS to achieve the floor space in the approved development application. In turn, Section 7 ('Award and allocation of Heritage Floor Space') of the *Central Sydney Development Control Plan 1996* contains specific details on the operation of the HFS. The DCP provides that HFS can be awarded in both the City Centre and City Edge

zones; however its allocation is restricted to sites within the City Centre zone and other sites where development exceeds floor space ratio controls (City of Sydney, 2011).

Turning to offsets, conservationists have criticized aspects of the biobanking offsets scheme in NSW, arguing that it will be difficult to ensure the 'improve or maintain' test, particularly when methods to compare the biodiversity values of different sites may be too simplistic to adequately address the complexities of different vegetation types (EDO, 2008; 2010). Their view is that:

> Offsets must be a last resort and all efforts to avoid and minimise impacts must be undertaken first. If offsets are a necessity (and environmentally acceptable) as part of a development approval, then a number of key principles apply. These principles relate to avoiding and minimising impacts first; offsets must be like for like, and offsets must be additional (EDO, 2008: 3).

In its defence, the *Biobanking Assessment Methodology* is based on ecological principles and seeks to incorporate the latest scientific knowledge in terms of current threatened species and native vegetation data (DECC, 2007b: 15). While recognizing that biobanking is based on a 'robust' methodology, environmental groups have pointed out that the potential benefits of the methodology depend on how it is applied. Nonetheless, such groups remain sceptical of biobanking, and "have generally opposed the use of offsets as they have gained the reputation as 'greenwash'" (EDO, 2008: 3). Instead, organisations such as the Environmental Defender's Office and the Total Environment Centre support providing incentives for biodiversity conservation on private land in NSW. Significantly, rather than providing a panacea when used for biobanking, these organisations believe that the methodology could be more extensively used for land use planning and strategic planning, and see it as having a widespread application to allocate stewardship payments drawn from other sources (EDO, 2008).

Despite these concerns, DECCW (now the Office of Environment and Heritage) diffidently perseveres with biobanking as it provides one of the few genuine alternatives available for biodiversity conservation in the face of continuing NSW Treasury funding restrictions for both the outright purchase and recurrent funding for the ongoing maintenance of high conservation lands. The benefits of biobanking is that tied up with the purchase by a developer of biobanking credits from a landowner are two financial components – a lump sum payment to the landowner and a portion which goes into a management trust, known as the Biobanking Trust Fund. This means that in addition to an upfront payment, private landowners also bear the risk of ongoing management of biobank sites through moneys paid out of the Biobanking Trust Fund, thus relieving government of this recurring financial burden.

A number of conclusions may be drawn from the mixed reception to, and performance of, TDR and offsets schemes in NSW to date. Perseverance with both types of market-based instruments is desirable in order to provide a range of tools in order to successfully implement planning objectives. Such perseverance is also warranted on the strength of the beneficial aspects and goals of several existing market-based schemes. Distillation of the successful elements of such schemes can provide the necessary ingredients to be replicated and extended to other applications of market-based instruments. The legal obstacles to such schemes are not insurmountable and statutory amendment, if necessary, is easily achievable. Indeed schemes such as the City of Sydney's heritage floor scheme have operated under the umbrella of the NSW *Environmental Planning and Assessment Act* for many years. If not based in statute however, TDR schemes can be adopted as government policy. In the case of offsets, whilst recent statutory amendment has created the BioBanking Scheme, the notion of developers and planning authorities negotiating and implementing similar outcomes through voluntary planning agreements pre-dates this legislation. The inference is that while legislation might be desirable, it is not essential. As is the case with TDR, it is policy intent and commitment – not necessarily legislation – that is the crucial ingredient to the success of these schemes.

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