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BLENDED VALUE INVESTING:

INNOVATIONS IN REAL ESTATE

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INTRODUCTION

¹ Available at www.weforum.org/pdf/initiatives/blended_value_report_2006.pdf

² More information on blended value and blended value investing can be found at www.blendedvalue.org.

³ Although there is a large and growing number of articles and books that explore environmental finance, of particular note is *Environmental Finance: A Guide to Environmental Risk Assessment and Financial Products*, LaBatt, S, and White, R, eds, (2002), Wiley Finance Publishers.

In March 2006, The World Economic Forum published *Blended Value Investing: Capital Opportunities for Social and Environmental Impact*.¹ That paper, written by Jed Emerson and Joshua Spitzer, presented and explored the notion that between market-rate financial investments and philanthropy lie investment opportunities that intentionally create both financial returns and environmental and social value. These investment instruments seek not simply to balance extra-financial value with financial value, to avoid doing harm, or to add token social responsibility to financial investing (as is true of many 'double bottom line' funds); rather they pursue a sustained blending of value creation – in financial, environmental and other dimensions.² That paper presented 12 case studies of funds and investment

instruments in this blended value investing category with a focus on global economic and social value creation more than environmental value creation.

In the autumn of 2006, The William and Flora Hewlett Foundation funded a new exploration of blended value, this time focused more specifically on the area of environmental and conservation finance. Many innovations are advancing the field of environmental finance, many of these strategies have been well documented in a variety of articles, books and websites.³ Nevertheless, for many asset owners and managers, creating blended financial and environmental returns still remains a difficult goal to attain. These actors continue to ask questions regarding the types of investment option before them, the degree (if any) to which they carry a financial penalty, and the nature of

the environmental value created (among other questions). Accordingly, this paper offers a broad overview of various real estate-based investment instruments and funds that are structured to generate financial returns while simultaneously advancing environmental value.

The specific audience for this paper includes foundation executives seeking to move beyond traditional grantmaking, as well as high-net-worth individuals and other asset trustees working to understand options for pursuing full, blended value investments – namely, those that create a defined level of economic value combined with environmental impact.

This inquiry introduces frameworks for approaching blended value investments, and it raises a series of questions potential investors will probably ask. While the authors believe these investments will ultimately prove viable and efficient, this inquiry stops short of comparing these blended value investments to more traditional alternatives. In the absence of further data, the authors cannot assert that these investments are superior to traditional strategies. The inquiry's conclusion suggests future studies that might bring more data to the ongoing discussion.

TWO FRAMEWORKS

FRAMEWORK: TYPES OF ENVIRONMENTAL ASSETS

The authors suggest two key frameworks for approaching blended value investing with specific environmental goals. The first pertains to the primary environmental asset addressed through the investment: *land, water or air*. Ecologically, such a division is obviously highly simplified: land, water, and air are fundamentally interdependent. Nevertheless, each of those three types of environmental assets has often been managed discretely, as suggested by key pieces of American environmental legislation (the Clean Air Act and Clean Water Act, for example). Those historical precedents and the environmental assets' different physical characteristics suggest natural guidelines for examining an ever-growing array of environmental investment strategies.

FRAMEWORK: FORUMS FOR CAPITAL INVESTMENT

This paper's second framework addresses the evolution of capital investment, which transpires in three different forums: first in specific *deals*, then

in professionally managed *funds*, and ultimately in increasingly organised *marketplaces*.⁴

Many innovative investments are first initiated on a project-by-project basis, wherein investors finance a particular venture in what could be called 'niche deals'. While individually financed projects permit creativity and innovation in capital structuring, the process is time-consuming and difficult to scale. Nevertheless, such complex deals are the first critical step towards understanding the dynamics of innovative financing strategies.

After managers and investors learn from multiple projects, they may then develop pools of capital that aggregate various investors' funds, allowing professional fund managers to invest in deals as they see fit. Such investment funds appeal to many investors, who achieve diversification across multiple deals, thereby decreasing risk and maximising value creation. These funds also appeal to fund managers who may then pursue their investment strategy and deploy capital quickly.

As fund managers and investors learn about a new type of investment, they often begin standardising investment vehicles and management structures. Such consistency often brings lower costs and less waste, which in turn may result in more investors moving more capital through a greater number of deals. Standardised investment vehicles and increased capital flows set the stage for increasingly organised marketplaces, where transactions become easier and cheaper to effect.

It would be easy to consider organised marketplaces, investment funds and individually financed projects to be natural and linear successors to one another. Nevertheless, none of those forums for capital transactions is likely to supplant the others. Instead, the three approaches necessarily co-exist, and lessons garnered from each improve the others. Movement toward organised marketplaces will be fitful and will not necessarily transpire in a linear fashion.

CONNECTING THE TWO FRAMEWORKS

Market participants may invest in each type of environmental asset in each of the three forums for capital investment (though certain environmental assets may, in the current environment, be best suited to one or two forums for investment). This paper looks specifically at land investments, exploring deal and fund-oriented investments; it then discusses how an organised marketplace may arise from these types of investments.

⁴For a more thorough examination of this framework, please see Emerson, J and Spitzer, J (2007), *From Fragmentation to Function: Critical Concepts and Writings on Social Capital Markets' Structure, Operation, and Innovation*, Oxford, UK: Skoll Centre for Social Entrepreneurship.

⁵This paper uses the term “monetise” to describe the practice of capturing financial value created by non-financial assets. The term does not, in this inquiry, refer to the practice of projecting an overall financial value for natural or other assets (eg, it does not refer to the economic value of wetlands that protect coastal areas from storm surges, though it may refer to the financial value of shellfish harvested from those wetlands).

⁶ An introductory reading list follows: Daily, G and Ellison, K (2002), *The New Economy of Nature: The Quest to Make Conservation Profitable*, Washington, DC: Island Press.

Daily, G, ed (1997) *Nature's Services: Societal Dependence on Natural Ecosystems*, Washington, DC: Island Press.

Kerry Turner, R, et al (1993), *Environmental Economics: An Elementary Introduction*, Baltimore: Johns Hopkins University Press.

DOCUMENT OVERVIEW

This paper explores several investment models through which investors can monetise or capture financial value created by enhancing the environment.⁵ The examples are not presented definitively as ‘best in class’ or ones that fit every situation. Instead, the case studies and discussions herein are examples of how various actors have structured blended value investments. Perhaps more importantly, the cases explore the fundamental attributes of such investment techniques in the context of real estate investment with an eye toward deploying them in other contexts (such as water and air investments).

Investment managers hoping to add environmental value creation to their portfolio will find certain examples especially valuable. Risk-tolerant individual investors will find they can advance the available investment space by supporting blended value entrepreneurs, some of whose work is presented throughout the document. Other actors will see leverage points in the non-market environment that can help expand and define the available investment space. Foundations and academic institutions will find a variety of areas for additional study that may further explore and define this emerging investment arena.

Investors often do not consider how their capital supports acts of environmental damage. Instead, most invest without regard to environmental impact, often donating funds to mitigate negative effects of their financial investments. We assert that investors who enhance environmental value through strategic management of capital have better prospects of achieving their goal of true sustainability. The traditional paradigm – generating financial wealth through investment and then mitigating environmental damage with grants alone – implicitly pits economic vitality against ecological vitality. Alternatively, increasing numbers of investors seek to use the engine of economic activity itself to maximise environmental value as a component of blended value.

Blended value investments, and the total value they generate, often involve critical issues of strategy and management beyond empirical proof and documented impacts. We hope this paper will assist the reader in becoming better versed and comfortable in applying these approaches to capital structure and investing.

ECOSYSTEM SERVICES: A BRIEF DISCUSSION

Before examining the tools of blended value investing, one must first address the context within which they are applied; one must begin to understand the complex ways in which ecology, economics and capital markets interact. The natural environment makes the human economy possible. Supplies of critical ‘goods’ such as timber, grain, meat and medicinal plants rely on a delicate balance of natural factors such as weather patterns, the nitrogen cycle and predator-prey networks. Similarly, large parts of the human economy are protected and enhanced by the stability of ‘services’ provided by natural systems that filter water, prevent flooding and support the production of natural goods. Hurricane Katrina highlighted the critical role of the Greater Mississippi Delta’s wetlands in protecting – or failing to protect – human settlements from tropical storms. The problem is a classic tragedy of the commons: individuals might benefit fully from developing a wetland, but they only pay a small part of the broader social cost of losing that wetland’s filtration and protection functions.

Creating strategies to avoid future tragedies of the commons may offer a variety of benefits to society as a whole, but this also faces significant political and operational challenges. Some argue for regulations that prevent individuals from exacting such social costs; others claim that clear property rights will solve the problem; still others look to cultural change. Such potential solutions can be difficult to design, launch and execute. Nevertheless, a set of examples has emerged in which individual or institutional investment can trump the tragedy of the commons and generate both financial and environmental benefits.

A discourse often identified with ‘ecosystem services’ or ‘natural capital’ explores the protection of ecosystems by pricing the services they provide society. When people define the services offered by the natural world and then compare them to human-made alternatives, it can be cheaper in many cases to protect natural capital rather than allow it to be degraded and replaced by inferior substitutes.

Many of the examples discussed throughout the paper fit under the ecosystem services rubric. Nevertheless, this paper does not explore the ecosystem services and natural capital discourses specifically. Instead, readers would be advised to consult the extensive literature that explore those concepts in great depth.⁶

ECOSYSTEM SERVICES: A CLASSIC EXAMPLE

In 1997, New York City faced the threat of having to invest billions of dollars in ‘downstream’ clean-up of its water supply.⁷ The construction of a new filtration system to serve its nine million consumers would have cost \$6bn to build, plus \$300m in annual operating costs. The City paused, looked at the entire water cycle, and decided to address the source of the problem. The city developed a comprehensive watershed protection programme (focusing on both protective and corrective initiatives) to ensure that its Catskill/Delaware reservoir system, the source of 90% of the supply’s daily demand, continued not to need filtration. The 1997 New York City Watershed Memorandum of Agreement required the development of 14 city-funded environmental protection and economic development programmes in the watershed west of the Hudson River as part of a pact that allowed the city to avoid filtering its Catskill/Delaware water supply.⁸ As a result, New York could rely on nature to clean its water by investing in restoring and repairing the Catskill/Delaware watershed and reservoir system – all for less than one-tenth of the cost of construction of a new plant. New York continues to face challenges in ensuring a sustainable water supply, but this example offers hope that protection of ecosystem services can help to minimise system-wide costs.

⁷ See: Mertz, T, “New York City Depends on Natural Water Filtration”, *RAND Issue Papers*, IP-203. Accessed online: www.rand.org/scitech/stpi/ourfuture/NaturesServices/sec1_watershed.html, 9/25/06

New York City Government, “NYC Water Supply Watersheds”, Accessed online: www.nyc.gov/html/dep/html/watershed_protection/home.html, 8/7/06
Catskill Watershed Corporation website: <http://cwconline.org>

⁸ According to the MOA, NYC must solicit owners of 355,000 acres of land in the Catskill/Delaware watershed over the next ten years. New York City backs this with a \$250m commitment. Land is to be purchased only from willing sellers and for full market price. So far, over 25,000 acres have been acquired (Mertz).

BLENDED VALUE LAND USE: NICHE DEALS AND INVESTMENT FUNDS

Blended value land investments are moving haltingly toward more uniform and marketable investment vehicles, a progression that points toward increasingly efficient, functional marketplaces for conservation real estate. That evolution is taking place around three conservation strategies:

- sustainable forestry,
- conservation real estate management that monetises conservation value, and
- wetland and habitat mitigation.

This paper will present several niche deals deploying those fundamental strategies, which will lead to a discussion of funds and fund-like structures combining such projects into portfolios. Those funds aim to lower transaction costs and improve diversification for blended value investors. Given the variety of blended value investment strategies encompassed by the three chief categories presented above, the funds that contain them may have a variety of forms that leave entrepreneurial fund managers great flexibility in building investment products appealing to particular segments of the investor market.

In several ways, building such funds is analogous to developing a high-technology product that can have many features. Often it is not the most feature-laden, capable device or product that succeeds in the marketplace. Instead, the most successful products offer exactly the right features for the customers who purchase them (even when the customers have not articulated exactly which features they want and need). Blended value investments themselves are like feature-rich products: they offer complicated ranges of risk-reward profiles, different types of social and environmental value creation and various geographic emphases. Furthermore, most of those dimensions are interrelated in complex ways. Building viable blended value investment vehicles requires financial structuring expertise and experience in managing the social-value creation mechanisms, but the task also requires a keen eye for product-market fit and product marketing.

CONSERVATION PLUS CASH FLOWS: PRECURSORS TO CONTEMPORARY BLENDED VALUE INVESTMENTS

The carefully constructed, sophisticated conservation finance investments of the 1990s and early 2000s draw on time-tested conservation strategies that advance sustainable land use and cash flows at the same time. As they are fundamental components of many of the investment vehicles discussed throughout this paper, some discussion of these strategies may be helpful.

SUSTAINABLE FORESTRY

European sustainable forestry practices developed in the 17th and 18th centuries helped initiate the early conservation movement in the US. Modern applications of similar practices remain a mainstay of conservation and environmental finance today.

Most sustainable forestry strategies capture financial value from timber harvesting while building on other dimensions of value creation. Sustainable forestry typically extracts some financial value from forests while investing in healthy long-term forest production capacity, erosion control, ecosystem health, biodiversity, landscape aesthetics, timber quality and seed stock quality. No matter what the extra-financial goals may be, sustainable forestry practices imply

that financial and extra-financial value creation are not diametrically opposed and can be advanced by drawing on scientific knowledge and market forces simultaneously. Such approaches view the many value-generating components of forests as a manageable whole: they may forgo near-term extractive cash flows to invest in the long-term value of the entire forest ecosystem.

PROGRAMME RELATED INVESTING IN CONSERVATION

Land trusts and conservation organisations have built significant land reserves through a combination of gifts from landowners and outright land purchases. Obviously, many conservation organisations have little control over when landowners choose to sell, and the organisations may not have the liquid capital to bid successfully for real estate when it comes on the market. In many cases, philanthropic investors have intervened, making below-market-rate loans (often programme - related investments or PRIs) to conservation organisations, which allow the organisations to buy important parcels when they become available. The organisations can then repay the PRIs as they raise capital from donors or other sources. Thus, the philanthropic investor can realise a nominal financial return while ensuring valuable land is protected.

MONETISING CONSERVATION VALUE

Easements are legally binding contracts between property owners and other entities, restricting the landowners' rights to develop their own property.⁹ Most conservation easements 'run with the land' and remain binding even when ownership of the property changes. Landowners who wish to preserve a particular use of their land may secure an easement of their property in perpetuity. Depending on a variety of factors, that easement can materially increase or decrease the value of the property itself.

Conservation easements are typically customised contracts, reflecting the needs and interests of the two parties crafting the agreement. Often easements limit development, land subdivision, or human impact on habitat, and in some cases they preserve historical land uses such as ranching or farming. Easements can protect wetlands, open spaces, forests and any other type of private land.

⁹ Easements can be used for all sorts of purposes, including granting rights of way and other land-use concerns.

¹⁰ The Land Trust Alliance, *Conserve Your Land – Frequently Asked Questions*, www.lta.org/conserve/faq.shtml#ce_more

¹¹ Oliver, R (2005), *Price Premiums for Verified Legal and Sustainable Timber*, North Yorkshire, UK: Forest Industries Intelligence Service, February. www.illegal-logging.info/papers/Pricepremiumstudyfinal1.doc

¹² Clay, J (2003), *Borrowed from the Future: Challenges and Guidelines for Community-Based Natural Resource Management*, New York: Ford Foundation. www.fordfound.org/elibrary/documents/514/toc.cfm

While landowners often enter into easements without direct remuneration, organisations and government agencies will sometimes purchase easements, thereby compensating the landowners for curtailing their rights.

Often landowners can derive property, income or estate tax benefits by donating conservation easements. According to the Land Trust Alliance, by 2005 land trusts and private land owners had protected 6.2 million acres of land with conservation easements, a total that does not include easements financed through public programmes.¹⁰

Improving a land's ecological value can improve its financial value. In many cases, when a section of land is legally preserved, the values of adjacent properties also rise as such properties become scarcer and increasingly surrounded by natural environments.

On occasion, a piece of land can be rehabilitated ecologically so that it can generate increased income over its previous purpose. A piece of degraded but remote agricultural land, for example, might be repurposed for recreational use once the land is sufficiently returned to a natural state. The recreational users may generate more income than farming could.

LAND SWAPS

Landowners may also build value in financial and non-financial dimensions by participating in land swaps that exchange ecologically valuable land for property that holds development or other potential economic value. For example, landowners whose property abuts a state forest might exchange a portion of that forested property with the forest service, which would grant the deed to a less ecologically valuable piece of land that would better suit the landowners' goals.

EXPLORING STRATEGIES IN GREATER DEPTH

The next sections will explore sustainable forestry, conservation real estate, and compensatory mitigation strategies in detail, exploring key aspects of the strategies through project-oriented and investment fund-oriented case studies.

SUSTAINABLE FORESTRY: FUNDAMENTALS AND CASE STUDIES

The cases included in this section are simply a small sampling of the various funds which have been launched in recent years. The reader may also be interested in learning about such leaders as Lyme Timber (www.lymetimber.com) and other funds leading the way in this field of work.

Timberlands generate and store financial value in a number of ways. The land itself, independent of the trees growing on it, holds value regardless of the health of the forest. The standing trees contain value, depending on the maturity, health and species mixture; harvesting them converts some of that growing value into cash flows. Additionally, the land can generate cash flows through non-forestry activity (hunting, tourism or livestock grazing, for example) and through the harvest of non-timber forest products (such as mushrooms or sap).

Interest in green building materials and the rise of sustainable forestry certifications (including the Forest Stewardship Council's FSC certification standards) have helped increase the value of sustainably sourced wood products, which, in turn, has made sustainable forestry more economically viable for many landowners. A survey of the UK markets for sustainable timber products reported a price premium of up to 30% for verifiably sustainable wood over the commodity alternative.¹¹ A Ford Foundation survey reported premiums between 4% and 100% for FSC-certified timber.¹² Nevertheless, those premiums depend on many factors and in some cases do not cover the additional costs of certification and the reduced revenues from less frequent timber harvesting, as demanded by the certification standards.

Altogether, sustainable forest management demands continuous scientific and financial management to be viable. The growth cycle for many forests lasts at least 60 years and varies according to several factors. Sustainable forestry plans must remain in place for decades, often outlasting a given forester's career and an owner's lifetime.

SUSTAINABLE FORESTRY PROJECTS: NIPF COMPOSITE CASE STUDY

The Sustainable Forests Partnership and the Ford Foundation published a series of sustainable forestry case studies in 1998, among which are seven brief examples of non-industrial private forests (NIPFs).¹³ Based on 1995 data, the Sustainable Forests Partnership noted: "The NIPF category includes properties not held by government or forest products manufacturing firms... 90% of the NIPF owners hold less than 100 acres. These small parcels account for 30% of NIPF acreage. Just 3% of private owners hold about 29% of the private forest acreage in parcels greater than 1,000 acres."¹⁴ Such landowners control 58% of total commercial forest acreage in the US.

The typical NIPF case study covers a forest less than 1,000 acres that does not provide its owners with their sole source of income. The landowners deploy sustainable forestry for a variety of reasons: to preserve a spiritual retreat, to provide hunting and fishing opportunities or to protect a beloved ecosystem. They want their forestland to stay in their families through generations and to provide income beyond covering the costs of maintaining the property. In most cases, taxes factor considerably into the forestry management practice. Property taxes are due every year, while timber harvest income is likely to occur much less frequently. (It can be uneconomical to remove only a small number of trees each year for the purpose of covering tax liabilities, and so selective harvests on NIPF properties are typically separated by several years.) Estate taxes also influence harvesting. For example, an inheritor of a carefully managed forest may need to deviate from the established forestry plan to harvest trees in order to pay estate taxes, an alternative being to sell some or all of the land. The case studies note that the standing timber can be harvested and easily converted to cash, meaning that one can 'use the timber like a savings account' when expenses arise.¹⁵

The regularity of taxes can drive landowners to harvest financial value from their forests in other ways as well, encouraging them to seek

creative solutions. They may graze cattle on certain portions of land, sell hunting and fishing permits, sell conservation easements or harvest non-timber products.

The Sustainable Forests Partnership draws the following conclusions from the NIPF examples:

- Cost of land is not included in the sustainability calculus [for most NIPF owners].
- Annual property taxes are a major concern.
- Changes in capital gains taxes worry NIPF owners.
- Estate planning is a necessity for sustainability.
- The intensity of management is highly variable.
- Sustainability will look different on small properties than on large properties.
- Professional advice is a necessity for sustainability.
- Landowners who are better informed make decisions that favour sustainability.
- Certification of NIPF lands requires new models.

These case studies suggest that a minimum size of forest may be necessary, with larger tracts of land benefiting from these strategies more easily than smaller tracts.

SUSTAINABLE FORESTRY INVESTMENT FUNDS: NEW FORESTS PTY LIMITED CASE STUDY¹⁶

David Brand, Managing Director of New Forests Pty Limited in Australia, matter-of-factly noted that the growth of trees continues steadily without reference to prevailing economic trends. Growing trees create timber stock that will be valuable when eventually harvested, though they do not need to be harvested to increase the value of the property. A forest owner who does not need current cash flow can ride out low prices and only harvest trees when timber prices are high, thus partially insulating the investments' value from

¹³ For additional, more detailed case studies in sustainable forest management, see Sustainable Forestry Working Group (1998), *The Business of Sustainable Forestry: Case Studies*, Washington: MacArthur Foundation, as well as Jenkins, M and Smith, E (1999), *The Business of Sustainable Forestry: Strategies for an Industry in Transition*, Washington: MacArthur Foundation.

¹⁴ The NIPF case studies can be found at Washburn, MP, et al (1998), *Nonindustrial Private Forest Landowners: building the Business Case for Sustainable Forestry*, Sustainable Forests Partnership. <http://sfp.cas.psu.edu/nipf.htm>

¹⁵ Ibid.

¹⁶ This section draws on information gathered through interviews with David Brand, managing director of New Forests Pty Limited.

fluctuations in demand. Accordingly, forestry investments are uncorrelated with most other assets, making them an attractive asset class for many professionally managed portfolios.

Responding to demand from portfolio managers in the 1970s, timber investment management organisations (TIMOs) arose, creating an asset class to meet those investors' needs. TIMOs pool investors' capital to acquire a portfolio of timberland investments that are then managed to generate financial returns for the investors. TIMO investments tend to have an extended time horizon (given the time it takes trees to mature before they can be harvested), and they are fairly illiquid investments. Accordingly, an investor would demand an illiquidity premium that would increase returns in exchange for the difficulty of exiting the investment before it comes to term. Thus, TIMOs, which increase in value steadily and not in volatile swings, tend to appeal to long-term investors, especially those with diversified portfolios that can compensate for the illiquidity of timber investments.

Entrepreneurs have moved beyond TIMO concepts to develop sustainable forestry propositions that monetise some of the additional ecological value of a standing forest. Brand's New Forests manages timber stands for financial returns while monetising environmental benefits, such as sequestering carbon dioxide from the atmosphere. The approach requires the forestry assets to include a certain amount of standing timber that functions as a carbon 'sink' which helps ensure that the fund will not clear-cut its land to monetise its investment quickly (as doing so would invalidate the terms of the carbon sink). Instead, the fund can certify the carbon sink potential and then sell the credits generated by the sequestration into open markets or directly to entities wishing to offset their emissions.

In 2006, New Forests offered several products and services. Brand noted that the firm advises companies in monetising ecological assets, and it consults with governments in developing new regulations for forestry practices. Though the consulting side of business does not generate most of the firm's revenues, it allows New Forests to remain involved in cutting-edge thinking

and practice. The firm also manages forestry investments for various large investors.

Brand separates the firm's investment products into two different strategic approaches. The two types of investment strategies allow New Forests to offer products that appeal to different investors seeking specific blends of returns and risk profiles. The first investment product, which he calls 'Timber-Plus', manages tens of thousands of forest acres as a TIMO that sells credits for the standing forests' service as a carbon sink. The value of the growing timber on those lands accounts for the bulk of the internal rate of return (IRR), but monetising the carbon sequestration increases the IRR. Brand also remarked that the firm continues to seek other ways to monetise conservation value to increase the investors' financial returns, including products related to protecting habitats, endangered species or water quality. In mid-2006 the firm had over AU\$100m of forestry assets under such management.

The firm also developed a separate type of investment product for investors interested in deriving financial returns from the ecosystem services that the forestry assets provide. Though the management principles are similar to the Timber-Plus investments, the 'Ecosystem Asset Management' investments generate proportionally more of their IRR from monetising ecosystem services and conservation value. These investment products use TIMOs-like partnerships to acquire ecologically degraded land (instead of productive forestry land), which can then be rehabilitated, restoring the properties' ecological value. Those properties have the potential to generate returns in a variety of ways – selling carbon, biodiversity or water quality credits based on the rehabilitated land's ability to store carbon dioxide, support wildlife and maintain watershed functions – to generate 30% to 40% of the investments' IRR. The remainder of the returns from those investments would be contributed by more traditional strategies, including timber harvesting.

Beyond the firm's forestry and ecological asset investment products, the principals continue to innovate. Brand noted that biodiversity offsets and habitat banking had great potential to become viable investment products as Asian

countries sought ways to cope with the biodiversity impacts of oil palm plantations.¹⁷ While oil palm plantations produce biofuel feedstock, they also often displace native forests that support diverse species. Brand's offsets, which would create and enhance native forests, could help oil palm growers compensate for the negative biodiversity impacts of their plantations.

Brand noted that most of the demand for New Forests' products comes from large institutional investors, particularly Australian pension funds seeking forestry investments to complement their diversified portfolios. Those investors had aimed to deploy large sums on particular plots of New Forests-managed lands – they were not seeking to invest in funds with other limited partners. Nevertheless, Brand observed a diversification of demand. Investors from all over the world, including North America and Europe, were interested in New Forests' products. Brand observed that forestry 'punches above its weight' in conservation, where consumers readily identify trees and forests with environmental value. Thus, Brand sees potential new markets that may demand new investment products that include monetising ecosystems' goods and services.

CONSERVATION REAL ESTATE DEVELOPMENT: FUNDAMENTALS AND CASE STUDIES

Landowners can directly and indirectly monetise the conservation value of their land through a variety of tactics. Uniting all of those strategies is the premise that land conservation – restricting landowners' rights – can actually increase property values if pursued appropriately. In the following cases, negotiated transactions begin to reveal the economic value created by increasing conservation value. Many individuals and organisations (including the US Nature Conservancy and others) are exploring similar strategies.

CONSERVATION REAL ESTATE PROJECTS: SUN RANCH CASE STUDY^{18, 19}

In 1998, Roger Lang bought Sun Ranch, located in the heart of Montana's Madison Valley. The previous owners of the stunning 25,000+ acre ranch west of Yellowstone National Park focused

on their own privacy, which kept them away from their neighbours and out of the ranching discourse. They tended to close the ranch to public hunting and fishing on the land's world-class streams. Over the years, previous owners had erected barbed wire fences that kept cattle in and migrating wildlife out. Some of Lang's predecessors further alienated neighbours by allowing invasive weeds to infiltrate the property, which decreased the productivity of the land and helped the scourge to spread to neighbouring property.

Lang set out to manage the property with a very different ethos, one that would maximise blended value for ecosystems and people, while also allowing Lang to capture some financial value himself. He began by getting to know his neighbours. His investment in the community, combined with a genuine interest in productive ranching (as opposed to creating an amusement park mock-up of a ranch for his own entertainment), were key conditions for winning the respect of initially suspicious neighbours.

Lang hired ranch managers to establish sustainable, holistic ranching practices, some of which his neighbours have eventually come to adopt. Sun Ranch reduced its herd size and rotated grazing sites so the cattle could be weaned from commercial feed and fed only natural grasses. Though the practice is more labour-intensive, the ranch could sell the healthier grass-fed beef for a premium that improved the economics of low-impact ranching. Meanwhile, the revised grazing regime mimicked the patterns of extirpated bison, which restored the health of the ranch's grasslands. Restoring the range improved the health of herds of elk and other ungulates. Lang's ranch manager began systematically scaring wolves away from cattle herds, reducing cattle mortality rates, with a lower impact on the predators. The practice also caught on with neighbours.

To allow elk migrations to proceed through valuable wildlife corridors, Lang replaced barbed wire fences with flexible electric fences that could be relocated or removed during periods of peak migration. The herd has burgeoned and Sun Ranch now offers sustainable hunting compatible

¹⁷ Please see the wetland mitigation discussion later in this section for additional conceptual information on these strategies.

¹⁸ This section draws on information gathered through interviews with Roger Lang, owner of Sun Ranch, Montana. It also draws on Rogers, P (November/December 2004), "Betting the Ranch", *Stanford Magazine*, Stanford, CA: Stanford University. www.stanfordalumni.org/news/magazine/2004/novdec/features/ranch.html

¹⁹ Since work on this paper commenced, Jed Emerson and Joshua Spitzer have established formal business relationships with Roger Lang and the Sun Ranch. Emerson is managing director, strategic development, for the Sun Ranch Group family of enterprises, and Spitzer is the executive director of the Sun Ranch Institute (on whose board Roger Lang sits). The authors have worked to eliminate any biases that their affiliations may engender.

²⁰ One such development is the Ameya Preserve, a 10,500 acre residential real estate development and wildlife preserve in Paradise Valley, Montana, a few miles from Sun Ranch.
www.ameyapreserve.com

with regional wildlife management plans. The income from hunting (as well as fishing) helps support the conservation of the elk and trout. Lang donated conservation easements on portions of the property and continues to explore other potential easements. While he may be able to derive cash flow from such conservation easements, Lang discovered that protecting portions of land from development helps create scarcity and actually serves to increase the value of the rest of the property.

In 2001, Lang and Sun Ranch opened Papoose Creek Lodge, a high-end ecotourism destination offering luxury accommodations plus horseback riding, fishing and other wilderness activities made possible by the surrounding ranchlands. Income from the lodge further supports the ranch's cash flow requirements.

As the ranch aims to improve habitat and build ecologically sound enterprises, Lang founded the Sun Ranch Institute, employing a scientific team to assess the ranch's ecological outcomes. Lang noted that it is the scientists' job to be skeptical of the owner's, ranchers', and the lodge manager's work, while also tracking results and providing feedback on the ranch's approach to ecology. The Institute has initiated a community outreach and education programme that keeps Sun Ranch responsive to the community while helping others adopt sustainable ranching practices and blended value strategies.

Lang noted the entire enterprise (including the ranch and lodge) was close to cash flow breakeven in mid-2006, with profitability likely in the near-term. In the meantime, the property's value was appreciating dramatically, notably outpacing national benchmarks for real estate inflation. Like many sustainable real estate investments, the increase in property value without synchronised increases in current cash flows can create problematic incentives. While Lang's ranch-based enterprises can meet Sun Ranch's cash flow needs, the cash flow pressures could lead some property owners to subdivide and sell land to generate ready cash.

As part of his overall vision, Lang is beginning selective, low-density residential development

in certain small portions of the ranch. Those sites can generate significant returns for the enterprise. However, he has great concerns about structuring such real estate deals so the developments will remain ecologically sound and keep the land in the hands of like-minded owners. He noted that the process will be driven by science, using wildlife as the ultimate filter for lot density and locations.

Of his enterprise, Lang lists four pillars of value creation:

- Sustainable ranching
- Ecotourism
- Real estate transactions
- Sound science.

Success in a complicated investment like Sun Ranch requires the owner to build capabilities in each of those areas, all of which are essential. Lang has built human and intellectual capital that may be difficult to copy. In mid-2006, Lang was contemplating how best to deploy those resources to create value on a much larger scale.

Sun Ranch has a particular mixture of development and conservation (with a heavy emphasis on conservation – over 95% of the ranch will be protected from development), but Lang can list a series of other projects in Montana that mix conservation and development in different proportions.²⁰ One approach confined housing development to a small portion of land that was less ecologically sensitive than the larger conservation plot associated with the development. Another project relies on low-density housing development that preserves much land around carefully sited houses. At the other end of the spectrum, Lang quickly listed many nearby development projects close to ski mountains and golf courses, all of them developed for maximum financial gain with little consideration of conservation or the interests of neighbouring property owners.

There is a set of key, privately-held ranch properties in Montana likely to change hands

in the next decade that offer unparalleled ecological value in wildlife habitat and migration paths. These properties may either be acquired by developers who would subdivide the land for maximum financial gain while destroying ecosystem value – or they could be acquired by investors with sustainable development and blended value objectives.

Part of Lang's goal is to use Sun Ranch as a model and source of capital to preserve and manage dramatically more land. Innovation in four different areas would make it possible to scale-up the Sun Ranch model to protect significantly more land across the American West and beyond:

1. The enterprise needs to develop a sound scientific understanding of its operational practices to transfer it to other properties and ecosystems.
2. There is a need for more comprehensive outcome measurements to assess the value created for ecosystems, rural communities and the people who appreciate the ranch lands. (They would be essential, Lang noted, to convince new investors to participate.)
3. Lang and his associates must continue to develop creative transactions that help manage cash flows, advance appropriate real estate development, improve habitat conservation and bring new investors to the table.
4. Finally, Sun Ranch needs to address a marketing problem: the enterprise must offer services and products to entice people while simultaneously advancing its sustainability.

The latter challenge may be key to addressing the others. Lang had been pondering various ways to apply Sun Ranch's assets to the vast conservation challenges facing the western US and beyond. In mid-2006, he was exploring different products and transactions – from a complex real estate sale to various new ecotourism products. On the financial engineering side, Lang was exploring various investment

and co-investment structures for other ranches (borrowing against Sun Ranch's existing assets, using other investors' capital, and other models).

Lang's Sun Ranch enterprise has many moving parts and requires careful hands-on management of the engaged owner and staff. Such management has built a robust asset with the potential to protect vast stretches of land in the western US. Lang noted that he hoped someday to be remembered for having preserved a few hundred thousand acres of the US while pioneering a new conservation model that would further magnify that impact.

CONSERVATION REAL ESTATE INVESTMENT FUNDS: BEARTOOTH CAPITAL²¹

Beartooth Capital's general partners, Carl Palmer and Robert Keith, found inspiration in a variety of conservation projects that had rehabilitated degraded agricultural lands to improve their ecological, recreational and financial value. In such investments, the partners saw opportunities to generate market-rate financial returns while managing ecologically important land for other non-financial value. That premise became the investment thesis for Beartooth Capital's first sustainable real estate investment fund.

The firm operates in the Greater Yellowstone Ecosystem and certain markets in California, where it purchases ranchland (typically ranging between 500 and 2,000 acres in size). The firm's principals then develop the properties in order to increase ecological and recreational value, deploying strategies that both generate cash flows and enhance the overall equity value of the property. Beartooth's conservation goals give the firm access to proprietary deal flow – much of it sourced by collaborating conservation organisations – and allow it to consummate purchases that would be unavailable to non-conservation buyers.

Beartooth's investment strategies define various drivers of financial and non-financial value on the land, and then the principals seek to increase the overall blended value of each property by improving each of its value streams. The firm targets under-valued properties, many of which have been ecologically degraded after years of over-use that has left little

²¹ This section draws on information gathered through interviews with Carl Palmer and Robert Keith, the general partners of Beartooth Capital.

habitat for elk, trout and other wildlife. The properties' natural value can be restored through rehabilitation, often making the property more appealing for recreational use, which, in turn, increases the properties' financial value.

The firm monetises ecological value by selling and donating conservation easements, selling or swapping ecologically valuable property to conservation organisations, banking mitigation credits, and other similar strategies. While Beartooth protects most of each ranch's acreage, it may also sell small, carefully restricted sites for 'green' residential development as appropriate. The investments in conservation increase the financial value of the saleable plots, both by making them scarce and by preserving the views, recreational opportunities and biodiversity surrounding them (which makes them more desirable than plots that are surrounded by less natural environments).

Before launching their first investment fund, the principals pursued such deals on a project-by-project basis. In late 2003, Palmer managed the purchase and development of Adobe Ranch (located near Yosemite National Park in California). Though the investment had not been completely exited by late 2006, the principals anticipated that the deal would generate a net internal rate of return (IRR) in excess of 30% for the investors. To date, the investment has generated cash flows through the sale of a parcel of land and the sale of a conservation easement, which together returned the bulk of the capital invested. A conservation land exchange and several parcel sales are expected to complete the investment.

Based on their success with the Adobe Ranch investment, Palmer and Keith sought to pursue comparable investments on a project-by-project basis. However, the partners lost their next deal to another investor while they raised the last portion of capital they needed. That outcome revealed the high transaction costs and risks of proceeding project by project. Palmer and Keith decided to raise a blind fund so they could purchase appropriate ranches whenever they became available. The limited partnership would also give Palmer and Keith the freedom to

manage the investments and develop properties while keeping their incentives aligned with their investors' around maximising blended value. By lowering transaction costs and standardising the investment structure, the partners aimed to attract more capital to their approach to conservation. Eventually, the Beartooth partners plan to build a family of similar funds for investors with different blended value objectives.

Unlike Lang, Palmer and Keith would not be living on their properties, and the likely geographic dispersion of Beartooth properties would require that they manage them with a slightly different mixture of value-creation strategies. Relative to Lang's Sun Ranch, Beartooth Capital's investments are more focused on ecosystem services transactions and contracted ecological rehabilitation to unlock value. Beartooth Capital's first fund focused on relatively smaller ranches, where the partners could deploy a similar suite of improvements across all of the properties.

The principals found their value proposition appealed most strongly to investors whose personal values (and in many cases whose philanthropic efforts) align with Beartooth's conservation mission. Palmer reported that while investors cared deeply about the preservation of open spaces and valued the fund's conservation goals, most investors were interested first in the economic fundamentals of the strategy. To get commitments of capital, Beartooth had to demonstrate that the firm was investing in an inefficient market where the partners could generate outsize returns through their domain expertise and unique strategies.

Palmer noted that the sales cycle for the Beartooth investment units was a long and high-engagement process, but the partners discovered that their typical investor had a particular profile. Many Beartooth limited partners are themselves principal investors (venture capitalists, private equity fund general partners or hedge fund managers) who have an interest in conserving western land, enjoy outdoor recreation or who own ranches. Ultimately, Beartooth generated more interest in its fund by offering limited partners a unique set of privileges, including

recreational access to the fund's properties, the opportunity to co-invest in the fund's deals and a right of first refusal to make market-rate purchases of properties upon resale.

In September 2006, the partners effected a first close on more than \$11m of an expected \$30m fund. As of the end of 2006, Beartooth had two deals under way and several more under negotiation while continuing to raise capital for the fund.

Looking to the future, Palmer noted that while Beartooth's current fund focused on a tight geographic area, there were conservation real estate investment opportunities in many areas of the US and beyond. The opportunities were great but were limited by inadequate capital flows and too few entrepreneurial managers to develop the investments. Nevertheless, he envisioned a vast range of potential investment funds with different geographic foci, different mixtures of financial and conservation value creation and various new ways to monetise ecological value.

Assuming there are sufficient conservation-development real estate opportunities, Beartooth and similar investment management firms face a product-market fit problem. They have the potential to build funds of investments that can generate a very specific mixture of value components. Thus, they must ask what characteristics would be demanded by what segment of likely investors. In the case of Beartooth's first fund, the principals crafted an investment vehicle that has appealed to the investor described above. Entrepreneurial investment managers could also develop new funds to appeal to philanthropic investors seeking lower financial returns and even higher conservation returns. Alternatively, they could craft a fund that might appeal to investors with long time horizons seeking long-term capital appreciation as opposed to shorter-term gains.

The Beartooth principals – indeed, all fund managers structuring new investment vehicles – must attend carefully to the blended value return hurdles of potential investors. The many variables associated with conservation real estate mean that managers and investors need not be satisfied with whatever blended value returns can be wrung out of one particular strategy;

instead, they can tune their strategies to create a particular mixture of blended value returns. When projecting or explaining a particular blended value target return, the fund managers must be able to articulate, measure and be accountable for extra-financial returns.

In spite of the potential for various fund products, Palmer noted, 'we're barely even at square one' in that process. He predicted that it would take at least ten years before conservation real estate funds proliferated and diversified across a large range of return profiles. In the meantime, the next decade would probably hold many more one-off projects. As managers, investors and conservation organisations learn from them, he predicted the rise of larger funds as well as boutique ventures that would develop a precise mix of blended value returns. At this early stage in the creation of a new industry, Palmer also noted his concern that high-profile start-up projects or funds might fail on either the financial or ecological dimension, casting a pall over the rest of the developing industry. "The key to success for the field and for individual firms at this stage is focusing on getting it right at a small scale to start – accomplishing bona fide conservation while exceeding investors' return targets – and doing so in a highly transparent way", Palmer concluded. "This industry has the potential to advance conservation efforts at a scale that is otherwise not possible. Those of us working in the field feel a weight of responsibility to live up to that potential, along with the very real responsibility we have to our investors."

WETLAND COMPENSATORY MITIGATION: FUNDAMENTALS AND CASE STUDIES

The US Environmental Protection Agency calls wetlands 'among the most productive ecosystems in the world'. Wetlands are defined as habitats where persistent water coverage determines the quality of the soil, vegetation and wildlife present. They include coastal swamps and salt marshes, as well as inland wetlands, including vernal pools (forest floors that are dry most of the year except when spring rains fill them), swamplands and playas (desert basins that occasionally flood with water). Not only do wetlands provide rich

²² In this situation, “fungibility” refers to the interchangeability of pollutants. It indicates that within certain boundaries, a unit of negative impact (say, a ton of polluting emissions) has the same effect no matter which entity released the pollution. Likewise, a unit of positive impact (in this case, the reduction of pollution) will have the same effect no matter who is responsible for the improvement. It means that positive and negative changes do not necessarily need to be effected by the same parties or in precisely the same locations.

²³ *Federal Guidelines for the Establishment, Use and Operation of Mitigation Banks*, 60 Fed Reg 228, 58605-58614 (1995).

²⁴ The section draws on information gathered through interviews with Jerome Ryan of Sustainable Environments, LLC.

habitat, they provide benefits that in some cases cannot be duplicated. Wetlands provide flood and hurricane protection, water purification and erosion protection services. They also offer rich opportunities for recreation and the production of economic products (such as shellfish).

‘Compensatory mitigation’ schemes require parties that have negative impacts on a particular ecological resource to mitigate that impact in a different area. Mitigation strategies depend on two key principles. First, they rely on a regulatory body to determine that a particular resource can be considered in aggregate. It can be easy to consider a certain resource (like an aquifer or the water quality in a pond) as unified so that someone creating damage can measurably repair it. Similarly, the relative fungibility of airborne pollution makes mitigation strategies possible for greenhouse gases or smog-forming emissions.²² A polluter that emits carbon dioxide in one location can reduce emissions of the same pollutants at another location, thereby generating relatively quantifiable impacts on the aggregated resource of air quality.

Using compensatory mitigation to manage resources that are less obviously fungible – such as wetlands, endangered species habitat or biodiversity – can be a more complicated proposition. Mitigation schemes for these types of ecological resources pose difficult measurement challenges. For example, an acre of wetland can serve myriad purposes, including flood-control, water purification, species habitat and other ecological values. The types and admixtures of ecological products and services provided by wetlands are infinitely broad. Thus, building a mitigation scheme is fraught with scientific and political judgments when the resources and their benefits are difficult to measure, dispersed geographically or not obviously fungible.

Most wetland mitigation remains a localised phenomenon so that the impact and restoration are comparable and result in no net destruction of local wetland functions. While the EPA and the US Army Corps of Engineers have established guidelines and regulations for compensatory mitigation, state and local government agencies often include their own restrictions and

guidelines. Those different jurisdictions have also established various monitoring and enforcement schemes so that any mitigation project requires extensive local knowledge.

The US Clean Water Act mandated that there be no net loss of wetland habitat and function in the US. The Act established the potential for compensatory mitigation and appointed the US Army Corps of Engineers to supervise such mitigation. For unavoidable wetlands impacts, the wetland destruction must be mitigated, defined as “the restoration, creation, enhancement, or in exceptional cases preservation of wetlands and/or other aquatic resources for the purpose of compensating for unavoidable impacts.”²³ The first method (creation of new wetlands where they did not previously exist), is often the most expensive and risky approach to compensatory mitigation.

WETLAND COMPENSATORY MITIGATION PROJECTS: GENERAL CASE

Project-specific mitigation allows developers (or other entities) creating some level of impact on wetland areas to perform compensatory mitigation and to be responsible for its success. Often, the negative impacts (frequently caused by development) and the mitigation may occur simultaneously, as the Army Corps of Engineers approves development and mitigation plans in conjunction.

Though the developer may be held legally liable for unsuccessful mitigation, there is an ecological risk that the development and wetland impacts may proceed but the mitigation may fail. Furthermore, self-mitigation often requires developers to manage processes outside their expertise. Thus, the risks of failure are significant and the costs of mitigation are relatively high.

WETLAND COMPENSATORY MITIGATION INVESTMENT FUNDS: SUSTAINABLE ENVIRONMENTS, LLC CASE STUDY ²⁴

Jerome Ryan and his partners at Sustainable Environments, LLC pursue financial returns while remedying some of the risks and inefficiencies associated with self-mitigation. They manage fund-like investments called wetland mitigation

banks. As of mid-2006, the partners working with Sustainable Environments had certified eight different banks with total anticipated sales of \$169m. The team was also in the process of certifying six more banks, which themselves would have additional expected sales of \$155m.

Under the regulations enforced by the Army Corps of Engineers, a party responsible for wetland impacts may also purchase rights to a portion of a wetland mitigation bank to effect the compensatory mitigation. Mitigation banks are wetlands tracts that are managed to improve their ecological function. They may use any of the four mitigation strategies listed above (subject to oversight by the Army Corps). The bank's manager must protect the land with a conservation easement and then certify the wetland improvements, which are then considered wetland mitigation "credits". The bank can then sell the credits to entities that will engender negative impacts on similar land. Thus, instead of financing a project-based mitigation, a developer can buy an interest in a larger, professionally managed mitigation project while transferring the mitigation responsibilities to the bank.

While the ecological (and financial) returns of any mitigation bank are subject to many factors, mitigation banking offers several likely benefits over project-based mitigation. Most mitigation banks are larger than most self-mitigation projects. Larger congruous wetlands typically promote better ecological value than do isolated or patchwork preserves that can arise from project-based mitigations. Furthermore, a larger area would be more likely to recover from adverse ecological actions. For example, drought conditions might degrade 40 wetland acres, but if they are part of a larger wetland preserve, those affected areas will probably recover quickly as plants and animals can more easily move from adjacent healthier wetlands when the negative conditions abate.

There are two types of mitigation bank, and they operate on similar principles: single client and entrepreneurial banks. Single-client banks exist for large developers or, more often, government agencies that create negative wetland impacts through multiple projects.

A state's department of transportation, for example, may mitigate all of its negative impact through a single bank that exists exclusively to provide compensatory mitigation for that agency. Entrepreneurial banks, on the other hand, create mitigation credits and then sell them to anyone creating wetland impacts, from developers to homeowners to government agencies.

Wetland banks' ecological economies of scale mean that often they can be monitored more easily than many smaller projects that cover a similar acreage. In the past, mitigation banks have had to meet higher standards of scrutiny before their credits were available for sale, while self-mitigation often had to clear lower hurdles for ecological performance. Furthermore, managing property as a wetland bank can increase the land's value significantly, making banking a potentially appealing source of income for landowners with unproductive or undervalued properties. Many developers prefer to purchase credits from mitigation banks rather than self-mitigate their impacts in order to transfer the ecological and regulatory risks to the bank in exchange for a one-time payment.

Wetland mitigation banks do have a number of drawbacks that, for the most part, make them difficult to manage and bring beyond a certain scale. Mitigation banking is an inherently local business, as most schemes require that wetland impacts be remedied in the same vicinity as the damage. Furthermore, all wetland mitigations are governed by federal, state and local regulations. Some areas in California, Ryan noted, require that mitigation occur within the same county as the impacts that necessitate them. In such situations, even an ecologically valid mitigation project cannot proceed if county lines divide it from the negative impacts.

Managing a wetland mitigation bank can be a complicated proposition. The business model requires the bank to possess finance expertise, ecological certification and regulatory expertise, along with real estate and legal expertise. Though consultants specialising in each of those key areas may help provide some of the banking functions, the mixture of necessary skills can be complicated to assemble.

Similarly, the rehabilitation that is part of most wetland banking schemes can take years of hands-on management, which makes it difficult for wetland bank owners to achieve liquidity before they can eventually sell their credits. Furthermore, demand for mitigation credits depends on the real estate market – when development booms, demand rises for mitigation, but a cooling real estate market can dampen demand. Ryan noted that those factors have inhibited institutional investors from directing capital to mitigation banking. While some institutional investors might be interested in backing a well-run, sufficiently large bank, most would think twice about investing in an enterprise that has principals who would be very difficult to replace – which is often the case in a mitigation bank.

Ryan also noted that while managing a mitigation bank is arduous, it serves as a barrier to entry that has allowed his firm to build competences that are difficult to replicate. Among the firm's key skills, Ryan mentions that it effectively engages in 'regulatory arbitrage', selecting mitigation projects where regulations make it likely for a bank to succeed while imposing high mitigation standards. Recent federal regulatory changes which require the Army Corps to hold self-mitigation projects to the same conservation standards that the Corps holds mitigation banks should make those regulatory arbitrage opportunities more numerous.

When considering managing a new bank, Sustainable Environments first verifies that the land exists in a favourable regulatory environment, without which the bank cannot be successful. The partners then assess the likely demand for credits. If there appears to be demand in that wetland service area, the firm then begins to seek a suitable property. If such land is available, the firm can then begin negotiating with property owners and certifying the site with regulators. Then it can initiate the ecological enhancement of the property and begin to market the credits once they are certified.

Looking to the future (beyond mid-2006), Ryan believed that mitigation banking would remain a local business, but, through repetition

and replication, regulatory best practices would spread across geographies. While they will never be uniform from place to place, he anticipated some streamlining of local regulations. Ryan also expected that changes to federal regulations would increase the demand for mitigation credits, which, in turn, would give rise to more entrepreneurial banks over several subsequent years.

Taking inspiration from wetland mitigation, entrepreneurs are building conservation banks that would facilitate compensatory mitigation for damage to threatened and endangered species' habitats. Ryan explained that in Arizona conservation entrepreneurs were experimenting with aquifer recharge banks, which grade land in ways that would improve ground water supplies. Though many pieces of a successful mitigation scheme were not in place, the Arizonans hoped that they would be able to sell recharge credits to enterprises or developers depleting the aquifer. Ryan concluded that in the future, 'almost anything impacted by development will be bankable.'

A DISCUSSION OF BLENDED VALUE REAL ESTATE MODELS

In the coming years, more blended value investment funds with sophisticated and sound structures are likely to appeal to an increasing number of investors. Indeed, some cite the lack of such funds as the reason why they are not committing capital to blended value strategies. Nevertheless, most professional investors will only invest in funds that have established track records and are managed by principals with a long history of market-beating returns. Many entrepreneurs creating blended value investment funds find themselves in a difficult chicken-egg scenario: they are preparing the investment vehicles that investors demand, but those investors will not commit capital because the funds are too new. Thus, new blended value fund managers must focus specifically on the ideal 'early adopter' investors who recognise the opportunity and understand the risks of being an early investor.

The emergence of funds attracting professionally managed capital is an outcome sufficiently desirable that one might be inclined to suggest their hour has arrived and try to wish

them into existence. In truth, such funds will emerge only after blended value investors pursue a great many other niche deals, wherein several people from different backgrounds converge to begin pricing previously unmeasured components of value. Only when the fundamentals of those transactions are well understood, carefully measured and benchmarked against other such investments can savvy investment managers pull those deals together into funds. That information has been sufficiently developed within certain investment strategies (such as sustainable forestry) that are attracting professionally managed capital. Nevertheless, it remains less accessible to other strategies (such as mitigation banking), which predictably find it difficult to attract the attention of pension, endowment and other professional asset managers.

Once investment managers and experts have developed a facility with the blended value investment fundamentals, they must engage financial engineering and product-marketing frameworks to develop products meeting the expectations of investors and the needs of investees. Of course, those investment managers must themselves be paid, a proposition that can be especially difficult in the early stages of a new asset class. Since many of the current funds are small, they may lack the necessary scale to compensate fund managers at or near market rates.

Furthermore, some of the blended value strategies generate below-market rates of risk-adjusted financial return from which fund managers can be compensated.²⁵ While it would be nice for fund managers to accept below-market compensation, few are willing or able to do so. Some of the critical fund management skills (particularly the financial engineering and product marketing functions) rarely come cheap and may be sacrificed by the poor economics of such funds in their early years. These realities will probably slow the process of bringing blended value investment funds to market.

FROM FUNDS TO MARKETPLACES

Returning to the “deal-fund-marketplace” framework, a preview of future conservation real

estate marketplaces might be seen in existing markets for real estate investment and for private equity/venture capital funds. Emerging conservation real estate investment funds are structured similarly to venture capital and private equity funds; understanding the markets for private equity clarifies how to structure blended value funds. Additionally, understanding how real estate value is traded in mainstream marketplaces can project future blended value real estate marketplaces.

Christopher Leinberger has noted that the American commercial real estate market has developed standard categories for income-generating real estate development.²⁶ He notes that there are “19 standard real estate product types that can readily obtain financing... [and] these are the only products most banks and publicly traded real estate investment trusts (REITs) can build, finance, trade, and own, according to the real estate industry’s new ‘gatekeepers’ on Wall Street.”²⁷ Leinberger asserts that such categories have homogenised recent real estate development, promoted suburban sprawl, and inhibited progressive mixed-use development; nevertheless, standard categories have promoted larger-scale investment in real estate development.²⁸

The categories simplify many parameters in order to create a development typology, which allows market participants to compare investments more easily. That typology helps financiers more accurately understand and predict the financial performance of developments that conform to the standardised list; in turn, such projects tend to have relatively easy access to capital. The blended value real estate marketplace might also emerge with a similar product standardisation that would help market participants better understand the value-creation potential for different types of investment. This study, for example, devotes several pages to characterising the different value creation strategies of Beartooth Capital, Sun Ranch and other conservation-development projects emerging in the western United States. Without the benefit of an extended discussion, it can be difficult to understand differences in expected blended value returns from those investment strategies.

²⁵ While many funds project returns in excess of historical average returns for public equities, most cannot match the outsized returns generated by the best private equity and venture capital investors.

²⁶ “For instance, a ‘neighborhood centre’ is a retail product that occupies 12 to 15 acres, anchored by a supermarket/drug store of between 50,000 and 70,000 square feet. It also includes in-line stores of national chains and franchises. The buildings occupy 20% of the site and are set back from the street; the balance of the land is surface parking. The location has a minimum of 20,000 people living within a three-mile radius and will have appropriate demographic characteristics appropriate for the particular supermarket chain.” From Leinberger, CB (May 2001), *Financing Progressive Development*, The Brookings Institution Center on Urban and Metropolitan Policy and Harvard University Joint Center for Housing Studies.

²⁷ Leinberger, CB, “Developer’s Viewpoint: Urban Markets Strengthen, But Standard Real Estate Products Are Not Suited for Mixed-Use Urban Development Communities”, *Community Development Cascade*, Federal Reserve Bank of Philadelphia. www.phil.frb.org/ccca/winter05.html

²⁸ See www.cleinberger.com for additional information.

²⁹ Emerson, J and Spitzer, J (March 2006), *Blended Value Investing: Capital Opportunities for Social and Environmental Impact*, Geneva, Switzerland: World Economic Forum.

³⁰ See www.ecosystemmarketplace.com

As conservation real estate developments proliferate and managers tune them to different investors' needs, professional investors will need to develop a typology similar to the mainstream real estate investment markets. Those developments will expedite analysis, invite relevant comparisons, and clarify the investment proposition for investors. The challenge will be to keep the categories flexible enough that they will not engender damages like those observed by Leinberger.

Additionally, real estate markets include a variety of information clearing houses, most notably the Multiple Listing Service (or MLS). Information forums like the MLS are not financial exchanges (they are not forums for transactions); instead, they provide information about property for sale and about historical sale prices. The blended value real estate industry could move towards such clearing houses, which would require market participants to share information about transactions. Only with increased transparency about financial and ecological performance can market participants begin to understand how to price various value-creation strategies and investment products.

The market for private equity and venture capital funds also includes a model for information clearing houses. Companies such as Thompson Financial collect information on private investments and then publish it in aggregated form. Individual venture capital partnerships often provide information on their investments (including the investee, the size of the investment round, the company's valuation, etc) and then purchase access to the aggregated information from Thompson. Such data are often incomplete (firms rarely share information about investment exits), but they help participants better understand capital flows and market actors.

Participants in conservation development strategies can speed the development of more efficient markets – with their increased capital flows and reduced transaction costs – by sharing information on the investments they have already effected. Indeed, this task remains critical in the evolution of most types of blended value investment. Of the microfinance and community economic development investments, this paper's authors wrote in a previous study:

Open communication about investment methodologies, pricing, failures, and equity-holders' profits will be essential to pricing these blended value investments correctly. Keeping the data private introduces the chance that other funds will erroneously price risk. When substantial capital enters (or fails to enter) a market based on mispriced risk, that market is prone to dramatic failure. Markets cannot accurately price the risk associated with their securities unless they openly explore failures as well as successes... The emerging blended value capital markets simply cannot afford for participants to be secretive about their data, ashamed of their failures, or fragmented in their terminology.²⁹

Forums like the Katoomba Group's Ecosystem Marketplace, which publishes thought-leading studies and other relevant ecosystem services market information, suggest the future of information sharing.³⁰ Xigi.net, another forum mapping the overall blended value investment space, is beginning to collect and present data about deals and funds. Timothy Freundlich, one of xigi.net's founders, suggested that it could eventually become the Thompson VentureXpert (Thompson Financial's information clearing house for the private capital market) for blended value investing.

Freundlich and others studying the capital markets serving blended value enterprises identify a variety of obstacles to sharing information. They range from concerns about private placement regulations to a well-intended desire not to discuss an investing strategy without a better understanding of its returns. Furthermore, many participants note that investors have not adopted these investment strategies as quickly as many managers hoped they would. An investment manager in the microfinance capital markets suggested that until the investment vehicles can demonstrate results – and then garner future investments based on historical returns – fund and deal managers will continue to guard jealously their investors and information like trade secrets

At last, some blended value investors – including many aiming to advance ecological goals through profit-generating enterprises – do not necessarily wish to see the conservation real estate market (and other blended value investment markets) become highly automated enterprises that reduce or eliminate the need for specialised knowledge and involvement. The Beartooth Capital principals, for example, noted that the investment product that most interested limited partners offered them recreational access to Beartooth's investment properties, an unusual feature for a limited partnership. Thus, a blended value marketplace may benefit from allowing some investors to remain personally engaged in their investments even as market structures help to lower transaction costs and increase the liquidity of the markets.

CONCLUSION: MEASURING IMPACT

Understanding and measuring the value created by many blended value investment strategies remains a complicated but important proposition. Measuring the outcomes and impacts of environmental blended value investing can help:

- assist managers in improving the efficiency and effectiveness of the aforementioned strategies
- guide managers of capital in allocating funds to the most efficient investment vehicles
- enable investors to compare the relative impact of blended value strategies with more traditional conservation strategies.

All of the investments discussed in this study track financial return and allow investors to predict (with varying degrees of certainty) the financial value their investments will create. Some of these models also allow investors to measure extra-financial value. Regardless, investors, asset managers and stakeholders must not let the easily measured financial returns substitute for a rigorous accounting of an investment's blended value returns. In the cases discussed here, environmental value creation is directly, if sometimes subtly, tied to financial value creation. In none of them is there a true 'zero-sum dissonance', wherein one must sacrifice financial value for environmental value creation

or must degrade the environment in order to reap profits. Instead, in each of the examples here, investors expect to create environmental value while capturing profits. Financial and environmental value creation are inextricably tied together and interact in complex, mutually beneficial ways. To a limited extent, one may use financial value creation as a partial measurement for environmental value creation (providing that one has a detailed understanding of how the two dimensions of value interact).

Nevertheless, completely understanding the environmental impact of these strategies – or almost any other activity – remains difficult. The global climate system, for example, is so complicated that decades of scientific inquiry have only developed an imperfect understanding of how it functions. No single individual or organisation can master that knowledge and then deploy it to monitor its environmental impact with complete certainty. Thus, measuring environmental impact of blended value investments will probably be an imprecise proxy for the more complicated elements of value created, though such impact measurement will improve through refinement and continuing iteration.

In complicated land deals, outcome measurement may be relatively easy to assess (in contrast to investment strategies in the air and water realms). First, many (though not all) of the strategies create environmental value that is more localised than those of, say, global climate change strategies. That local impact will probably take place more quickly (ie attempting to restore the health of a meadow offers more outcome feedback more rapidly than attempting to slow the pace of climate change). The impact measurements for different real estate deals will probably differ from one investment to the next (as the environmental impacts of a deal on western ranch land would be different from one in the Pacific Northwest). Regardless, there is growing potential to create

a single platform of commonly endorsed metrics by which to assess the total, blended value generation of such ventures.

Fortunately, many managers of complex land deals have incentives to measure environmental value creation. For example, if Roger Lang wishes to replicate the Sun Ranch model, he would need to demonstrate to investors that not only could they earn competitive financial returns but that they would also generate real environmental value. The financial returns on a similar deal (a second Sun Ranch in a different location) would probably not match the expected returns on investment if Lang were to sell that ranch to a buyer who would subdivide and develop the land to maximise financial returns with little regard for environmental value. In this case, Lang has strong incentives to understand and increase his environmental value creation: doing so increases the appeal and competitiveness of his investment offering versus alternatives.

In contrast, impact measurement in other types of environmental investments would involve different complications. In the carbon markets, for example, actors generally disaggregate the steps of measuring impact. Consider the following simplified case of a company that takes steps to reduce and mitigate its greenhouse gas emissions. It might hire outside consultants to measure and verify the reductions in emissions at individual project sites. Another party might gather the reductions and mitigation outcomes into a single assessment of the company's net change in emissions. Scientists across the world may study and debate the many subtle impacts of greenhouse gas emissions. At last, the company can pull together particular information to understand its changes in environmental impact. While the company may also develop a strong capacity to measure its immediately produced outputs, deriving a true understanding of the outputs' impact requires the work of outside

parties, involves judgment calls about where in the system to assess impact and includes monitoring the evolution of scientific understanding of global climate change. Fortunately, if there is a generally accepted understanding of how outputs (eg greenhouse gas emissions) lead to changes in impacts (eg temperature increases) then individual actors can focus their measurement and value creation at the output level and still be aligned with broader markets and discourse.

EXPLORING THREE THESES ABOUT BLENDED VALUE INVESTMENT RETURNS

The investment examples presented in this study focus on how to capture a portion of the financial value created by environmental improvement. This paper's examples demonstrate that one can make money by practising conservation and creating environmental value. Nevertheless, a foundation programme officer asked the authors of this paper a different question. In essence, she said: "For these strategies to be useful to me, I need to know if these investments are made on faith that they are efficient in generating non-financial impact. I want to know that they really are efficient, especially how they compare to the alternative, which is grantmaking to achieve non-financial goals while maximising financial value in the endowment only." The programme officer raised the larger question of whether linking conservation to profit is the best way to create environmental value.

Overly simplified, the impact-measurement situation can be posed in three complementary theses:

■ **Thesis A:** One can generate competitive financial returns by practising conservation.

■ **Thesis B:** One can have a large conservation impact through financial investing.

■ **Thesis C:** Conservation impacts can be most significant when achieved through non-market strategies.

The authors believe that the first two theses better articulate the sentiments behind the increasingly tired phrase 'doing well while doing good'. Thesis A indicates that people can pursue their financial goals in ways that also enhance the natural world. Thesis B, a more complicated proposition, asserts that financial investments can be especially expedient ways of enhancing the environment. Thesis C speaks to strategies that this inquiry has not explored in depth. Nevertheless, many such strategies – including top-down regulations, organised protests and boycotts, and civil disobedience – have been vitally important to the creation and preservation of environmental value.

Readers wishing to align a financial investment strategy with a programmatic one may be content to invest under Thesis A. Readers deciding between making a grant or engaging in a blended value conservation investment would probably want to know the extent to which Thesis B is true. While this paper explores the second thesis in part, it remains a question with which the field still struggles. Both of the first two theses appear to reject Thesis C, but the authors would assert that the three are compatible if examined with more nuance.

Positing these theses alone simplifies the situation. They do not reflect how those components of value (financial and environmental) interact with other dimensions of value. Nevertheless, the authors believe that those theses (explicitly or implicitly) influence investment decisions of many actors. Finally, the degree to which each of the theses is true depends significantly on the specific investment context: In certain cases, Thesis B is likely to

be strongly true, while in other cases it will be patently false. The authors believe that deeper, more nuanced exploration of these theses will be critical to wise investment.

THE FUTURE RESEARCH AGENDA: EXAMINING ECONOMIC PERFORMANCE AND ENVIRONMENTAL VALUE CREATION

Assessments of Thesis B are few, and rarer still are tests of Thesis B comparing a blended value investment strategy to a more traditional grantmaking or government-mandated solution. Such a test might ask if one generates more environmental impact by seeking the donation of land to conservation organisations or by advancing a conservation-development investment model, such as that pursued by Sun Ranch and Beartooth Capital. The lack of such studies reaches to the heart of the impact measurement issue. One must first agree on the appropriate measure of value by which to compare the grantmaking and blended value investment opportunities. Assuming one could determine an impact metric, one must implement it. Then, one needs to develop an experimental design that would compare the impact generated by the two different strategies.

A research agenda that would test the verity and applicability of Thesis B should consider studying some of the following topics:

- apt comparisons between blended value models and their traditional alternatives (including strategies practiced under Thesis C)
- further explorations of blended value models that have succeeded
- explorations of blended value models that have failed to generate significant environmental value

Even without a scientifically valid test of Thesis B, one can assert that in the following circumstances Thesis B is likely to be true.

■ When top-down control is difficult:

In the case of the American Clean Air markets (which regulate acid-rain and smog-forming pollutants through cap-and-trade market mechanisms), Thesis B would seem to be true. In theory, aggressive command and control regulations could have lowered SO₂ and NO_x pollutants below those achieved with the EPA's pollution credit-trading programme. Nevertheless, attempts to do so would have met with stiff political opposition, legal challenges and any number of other obstacles to implementation. Thus, the pollution markets probably had a higher than expected environmental value than did the command and control policy. This condition holds because the non-blended value solution (in this case the command and control regulation) would be expensive and difficult to enforce, while the blended value strategy decentralises decision-making and helps motivate companies to comply.

■ Where blended value investing brings new capital to bear on environmental problems:

A simplified example may help to illustrate this point. A grant may create 100 units of environmental value, while an investment strategy might, with the same number of dollars, create only 50 units of environmental value. However, if the blended value strategy attracts three times the amount of capital, it would generate more overall environmental value and be more environmentally effective than the standard method. A blended value investment strategy can drive large-scale environmental value creation when it attracts capital that had been deployed in environmentally agnostic financial investments. If, for example, Beartooth Capital can successfully create blended

value and then demonstrate that its financial returns have a weak correlation with other real estate investment vehicles, the fund's innovation will draw capital that would otherwise have been invested in environmentally agnostic or even destructive enterprises.

■ **Where capital can be recycled efficiently:**

When capital can create environmental value, be returned to the investor, and then be redeployed to create more of the same value, such a strategy can be more environmentally valuable than an alternative 'one-time charity' strategy that does not recycle capital. This condition only holds when the environmental value is created by the input of financial capital and is not erased by its withdrawal. One blended value investment that does not leverage the recycling of capital would be a below-market-rate loan used to make a conservation purchase – and which must be repaid by grant funds. (Such a transaction can be vitally important, but it does not affirm Thesis B.) Mitigation banking that uses capital to establish a bank and then uses the proceeds of credit sales to start another bank is one example that would support Thesis B by efficiently recycling capital.

■ **When regulatory change creates fungibility or other appropriate conditions:**

In some circumstances, changes in the non-market environment – the advent of tradable property rights or the forum for market-based exchanges – can encourage blended value investment strategies that may outperform traditional strategies. When regulators initiated the fungibility of certain wetlands, thereby permitting compensatory mitigation, they changed the overall environmental game such that mitigation banking may become more effective than alternative approaches to protecting wetlands.

■ **Where new models can permanently alter incentive systems or cultural assumptions:**

The greatest potential for Thesis B is not necessarily in those investments explicitly called 'blended value'. Instead, enough examples may shift cultural assumptions to the point that it is no longer acceptable to think about a deal without considering environmental value – and the incentive systems that guide behaviour change to reward multiple kinds of value. Such 'mainstreaming' change is the hardest to measure and the riskiest to bet on, but it might ultimately create the most value.

With these examples in mind, researchers and investors would still be wise to consider blended value investing as an innovation that remains imperfectly understood and, at this time, inefficiently deployed. Harvard Business School professor Clayton Christensen coined the term "disruptive technology" (or disruptive innovation) in his book *The Innovator's Dilemma* (1997). Disruptive innovations represent new approaches to accomplishing technological goals. Typically, the earliest products deploying the disruptive technology will under-perform established products using existing technology, which is braced by extensive infrastructure, supporting technology and consumer habits. Often, the companies deploying the early products fail in the marketplace, which does not know what to make of the new innovation. Furthermore, often the earliest applications of the disruptive technology do not deploy it for the purposes that will ultimately supplant the dominant incumbent technology. Only through repeated innovation cycles, entrepreneurship and the evolution of the marketplace do most disruptive innovations become dominant.

Blended value investing is in a relatively early stage of market adoption. The pioneers of blended value investing, who have generated extensive knowledge about structuring and managing investments, probably have a limited sense of where and how this disruptive financial technology will eventually be deployed and become dominant. Regardless, over the long term it would not be surprising to see such disruptive innovation begin to outperform the current mainstream approaches to creating environmental value. Not long ago the concept of wetland mitigation banking was all but unfathomable. Today, mitigation banking is being applied to many different problems (from biodiversity to underground aquifers), and mitigation bankers are refining their practices and learning how best to market their products, while others develop supporting innovations and create the appropriate non-market environment for such investment practices.

Observers may look at mitigation banking (or conservation real estate development or any number of other blended value investment models) and conclude they under-perform traditional approaches to creating environmental value – that Thesis B does not hold. Entrepreneurs like those at New Forests, Sun Ranch, Beartooth Capital, Sustainable Environments and many others will continue to expand the utility and efficacy of blended value investing. Each year brings new innovations around what kinds of environmental value may be created through the appropriate use of blended value investing. In certain areas – more and more with each passing year – these environmental entrepreneurs will demonstrate in what applications Thesis B holds true. Ultimately, there may be no limits to the ways that creative financial engineering and innovative environmental strategies can enhance ecological value and deploy capital more effectively.



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