



## Paper 2c: Toward Sustainable Financing and Strong Markets for Green Building:

Valuing Sustainability

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In January 2007, *Business Week* reported a fifteen-fold rise (to US\$178bn) in sustainable mutual fund investment,<sup>1</sup> with UNEP's PRI tracking US\$6 trillion in funds committed to sustainable principles.<sup>2</sup> A million square foot building being developed by Bank of America is aimed at achieving LEED® Platinum.<sup>3</sup> Business is starting to invest in the environment and its value, emulating government investment, which has been going this way for some time.<sup>4</sup>

The public is starting to demand that a company, its products and services are environmentally sensitive and it is increasing companies' corporate and social responsibility reporting.<sup>5</sup> Business, finance and corporate perspectives are thus starting to adapt to this shift in demand. Historic views that the environment only adds cost without value are in consequence being reviewed. Companies known for their profit focus, such as Wal-Mart,<sup>6</sup> are raising their environmental commitment.<sup>7</sup>

Underpinning the economics of supply and demand for any business is value, where inclusion of sustainable aspects such as pollution and emissions are redefining the business case. With real estate assets contributing over 40 percent of greenhouse gases,<sup>8</sup> studies have focused on the link

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<sup>1</sup> See [Beyond the Green Corporation](#), *Business Week*, 29 January 2007. Tracked by the [Social Investment Forum](#).

<sup>2</sup> Per United Nations Environmental Program, [Principles for Responsible Investment](#) staff, December 2006.

<sup>3</sup> See [Bank of America press release](#).

<sup>4</sup> See, for example, [The Business Case for Sustainable Design in Federal Facilities](#), especially s.2, [The Economic Benefits of Sustainable Design](#).

<sup>5</sup> See the [2006 survey](#) by KLD Research & Analytics, Inc. reported by the Social Investment Research Analyst Network (SIRAN).

<sup>6</sup> See [Wal-Mart: Big Strides To Become The Jolly Green Giant](#), *Business Week*, 29 January 2007.

<sup>7</sup> For example, Hawken and Lovins, [The Ecology of Commerce](#) and [Natural Capitalism](#).

<sup>8</sup> Reported for example in "[The Relationship between Sustainability and the Value of Office Buildings](#)" relative to Australia.

between value, assets and the environment:<sup>9</sup> if the link can be proven and adds value, then profit motivation will over time make the real estate market to go green.

There is however, reasonable question<sup>10</sup> whether there is a link between value and the environment because certain indicators have historically been unable to conclusively demonstrate extra value.<sup>11</sup> More recent or comprehensive studies, however, suggest that demand is starting to change. While early studies couldn't find a rent or sale price link because it was not clear, other aspects of value have been found and even rent and sale value are showing some signs of tangible change.<sup>12</sup> Less direct indicators of the value of environmental services have long been documented.

As the type and extent of the eco-value connection evolves,<sup>13</sup> owners with non-green buildings are expressing concern about protecting their income and value, suggesting real and positive value growth.<sup>14</sup> On the downside, however, owners negatively affected by climate change events, for example in flood plains, have no doubt about the financial and insurance impacts.<sup>15</sup>

Positively or negatively, value and the environment are linked. This paper, therefore, looks at value, how it sits within business, how and why it is evolving, and how it might be defined in the future.

## 1. The Role of Value and Valuation

Investors want to know that the business case for an enterprise is sound, so valuations are required as independent assessments of worth. Used for centuries<sup>16</sup> for financing, securitization, everyday transactions, company accounts and corporate reporting, valuations are embedded throughout everyday business and thus have to address sustainability.

Valuation professions and stakeholders govern valuation standards. North American real estate appraisal standards are largely defined by the Uniform Standards of Appraisal Practice (USPAP),

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<sup>9</sup> See, for example, the studies “[Green Value](#)” and “[The Dollars and Sense of Green Buildings](#).<sup>9</sup>” The author instigated and led Green Value.

<sup>10</sup> See, for example, footnote 8 above.

<sup>11</sup> See, for example, an Australian qualitative review from 2005/6 by Jones Lang Lasalle, “[Assessing the Value of Sustainability](#),” which was based on a survey of office tenants. This reflects similar studies in other markets, for example the UK, reported to the [Vancouver Valuation Accord](#). This contrasts with evidence from other locations, including one by [Jones Lang Lasalle reported at CoreNet Asia 2007](#), which have demonstrated value improvement from sustainability.

<sup>12</sup> The value is not always reflected solely in rent or sale price, but in other attributes that contribute to financial value such as tenant inducements, absorption, turnover, approvals and other aspects. These are noted in [Green Value](#) (ibid.) and almost the identical conclusions were reached separately and conterminously in “A note on Environmental Value Added for Real Estate” by Masato Ito, General Manager, Sumitomo Bank in Tokyo, for the 10<sup>th</sup> Anniversary of the Tokyo Association of Real Estate Appraisers.

<sup>13</sup> See, for example, “[The Economic Benefits of Natural Green Space Protection](#),” which provides a desktop summary of articles supporting this perspective, and provides many references. In the same sector, the more authoritative “[Corridors of Green and Gold](#),” Hamilton/Quayle 1997, identified a 15 percent differential for riparian proximity to housing. The authors are both former deans at the University of British Columbia and one is currently a deputy minister.

<sup>14</sup> This was a concern raised by investors at both the First and Second [Green Real Estate Forum](#) in Ottawa and Toronto, 2006, 2007.

<sup>15</sup> See the US Congress report “[A Failure of Initiative](#)” and “[On Risk and Disaster: Lessons from Hurricane Katrina](#)” [University of Pennsylvania provost Ronald J. Daniels, political science professor Donald F. Kettl and Howard C. Kunreuther, Wharton professor of operations and information management]. These point to the impact on loan risk and value from climate change-related disasters.

<sup>16</sup> Arguably the first formal valuation was the Domesday Book. Completed in 1086, it took approximately six months to complete and valued every asset, including farm and business assets, in England.

governed by the Appraisal Foundation.<sup>17</sup> Largely funded by US Congress,<sup>18</sup> they also involve stakeholders from the finance and investment sectors, with other representation. USPAP is linked to international standards through the International Valuation Standards Committee (IVSC), with which it has agreed to harmonize standards.

Because valuers are largely client- and market-led, appraisals may not find extra value or clients may not seek it. The ability to identify and track value is compounded when the issues affecting it are non-financial, as with many social and environmental factors.<sup>19</sup>

To summarize then, valuation has an established role in business, driven by standards, but market value may not always reflect sustainability. However, the mechanisms exist for valuations and valuers to adapt, especially if the value is found and the clients demand it.

## 2. Valuations and Corporate Accounts

Valuations are reported in most corporate accounts and changes are under way to financial reporting standards.<sup>20</sup> Simplistically, these include that assets will be valued using market value, whereas cost is the current common method. The change will impact environmental value:

- Cost typically reports the higher initial cost to build a more sustainable asset, but may not reflect investment well because this is usually discounted. This especially tends to affect full life-cycle valuation.<sup>21</sup>
- Market valuations have a better chance of reflecting both the cost and the value of sustainability in a single reporting measure.
- With environmental changes affecting asset risk, market value is better adapted than cost approaches to reflect value impact from storms, floods, fire and so on, which are some of the main results of climate change.
- Corporate accounts—and valuations—do not usually capture free goods or services, which include environmental services. Thus, demand on, or damage to environmental

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<sup>17</sup> The [Appraisal Foundation](#) has international representation, not purely US direction. Sixty countries support [IVSC](#).

<sup>18</sup> The Financial Institutions Reform, Recovery and Enforcement Act (FIRREA), passed by Congress in 1989, included (in Title XI) a requirement to establish a real estate appraiser regulatory system involving the federal government, the states and the Appraisal Foundation (see its [Bylaws](#)).

<sup>19</sup> Standards' requirements are generally limited to environmental impairment. The requirement for valuers to undertake risk review was removed some years ago from some valuation standards, at stakeholder request.

<sup>20</sup> Enron and similar collapses prompted the shift, forcing the European Union to seek change from the accounting professions. The main changes are to International Financial Reporting Standards. Source: Professor Sir David Tweedie, Chairman, International Accounting Standards Board at The International Summit on Financial Reporting, Toronto, Canada, 21–23 October 2003. Europe implemented changes on 1 January 2005, and Canadian and American standards are proposed to be harmonized with international standards in 2008. Changes to valuation from IFRS are summarized in a document by the [Royal Institution of Chartered Surveyors](#); see “[Property under IFRS](#).”

<sup>21</sup> Segregated reporting compounds this issue and further weakens sustainable investment. It can lead to a tendency to reduce investment to manage costs because longer life-cycle returns are proportionately lower.

services goes largely unreported on corporate accounts, especially for companies without a CSR commitment and reporting.<sup>22</sup>

To simplify, therefore, cost may have little or nothing to do with value and this can be problematic where the environment is concerned.<sup>23</sup> Accounting changes<sup>24</sup> thus come at the right time to start reflecting the value of environmental services and companies will arguably benefit, especially providing they are able to take a longer-term view to their investments. If governments implement carbon taxation, the debate over valuing environmental goods will be simplified as corporate accounts will have to capture the cost or benefit on corporate account.<sup>25</sup>

### 3. Measuring Value

Two factors in current valuation mechanisms primarily affect the relationship between value and the environment—risk and profit. But the manner of valuation and techniques applied add complexity to how value has to be measured:<sup>26</sup>

- The role of corporate liability is beginning to impact decisions by larger corporations and funds, not just due to the environment but also due to social responsibility.<sup>27</sup>
- The insurance sector knows that environmental risk is rising<sup>28</sup> and it thus makes sense to reflect environmental impact and risk in valuations. Government will also benefit, for much the same reason. Lenders, owners and developers especially will want to know if their investment is affected by aspects related to climate change.<sup>29</sup>
- The impact is not limited to the real estate sector as businesses whose valuations appear on corporate account will also be affected.<sup>30</sup>

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<sup>22</sup> Multiple articles have pointed to this. In the economic field books such as “[The Origin of Wealth](#)” by Eric Beinhocker, Harvard Business School Press, 2006. Articles covering this include “[Green, Red or Black?](#)” by Djuna Ivereigh and “[Learning to Value Nature’s Free Services](#),” by Janet Abramovitz. More can be identified by researching the “[Tragedy of the Commons](#).”

<sup>23</sup> Interestingly, government assets are largely “Special Purpose Assets” destined for continued use of cost approaches, yet other approaches such as Alternate Use Value can reveal significant potential in these assets and both improve accountability for government actions, and improve accountability for their re-use and life cycle, which cost approaches are less suited for.

<sup>24</sup> The standards being used will reference and are being integrated with the international valuation standards and both accounting and valuation professions have been cooperating on the changes. The author is a founding signatory of the Toronto Valuation Accord, a commitment by some of North America’s leading valuation professions to work on the changes.

<sup>25</sup> For example, British Columbia has launched a “[Climate Action Charter](#),” which includes an agreement that municipalities value their GHG profiles (Clause 5.a.ii).

<sup>26</sup> Articles on this include “[Property Valuation and Analysis Applied To Environmentally Sustainable Development](#),” “[Theoretical Foundations for Integrating Sustainability in Property Investment Appraisal](#)” and others. Books covering this area include

<sup>27</sup> See Freshfields Bruckhaus Deringer. 2005, “[A Legal Framework for the Integration of Environmental, Social and Governance Issues into Institutional Investment](#).” UNEP Finance Initiative.

<sup>28</sup> See [Swiss Re](#) and [Munich Re](#) summaries on climate change.

<sup>29</sup> Several papers on this have been collected on the United Nations Environmental Program’s Finance Initiative website [http://www.unepfi.org/work\\_streams/investment/amwg/](http://www.unepfi.org/work_streams/investment/amwg/).

<sup>30</sup> See, for example, “[Carbonizing Valuation](#),” which notes that the carbon impact of energy generation systems will become a legacy issue unless more sustainable approaches are adopted. It terms this “corporate value at risk” from carbon impact, which means valuing the carbon impact of the energy [generation] plant (and by extension, other enterprises, including buildings). This will become especially relevant if governments impose carbon taxation, which is increasingly being signalled in North America. (See the BC Premier’s [speech to UBCM](#), in which carbon trading was presaged).

- Valuation standards could require environmental and climate change review in the valuation process and some are adapting in this direction.<sup>31</sup> Articles noted in this review consistently indicate this step would help safeguard value and mitigate risk.
- Everyone with an interest in assets will want to know if sustainability can add more value, or impact asset value, either currently or in the future. This will especially impact markets if climate change affects demand for environmentally compatible real estate<sup>32</sup> or carbon tax/credit systems proliferate.
- Valuers are market driven and reflect market demand. They are conservative, in great part for reasons of liability.<sup>33</sup> They can only reflect climate change if it affects value and they are spurred by client requests to comment on the value of environmental attributes. Lenders and buyers, owners and governments, need to demand the service and valuers need to improve.<sup>34</sup>
- More research is desirable on the attributes and effects of sustainability on value, communicated simply in ways that each recipient group can easily grasp. This will help assess what profit in environmental investment exists and inform industry.<sup>35</sup> It will clarify whether there is value from sustainability, thus assisting appraisers.
- Value is affected by laws, bylaws, statute and other government processes, practices and requirements, some of which act as barriers preventing sustainability, or increase cost, time, risk, etc., dissuading sustainability. Papers have been published attempting to document or support this change.<sup>36</sup> Independent review of government processes and changes that reduce barriers and encourage sustainable behaviour are desirable.<sup>37</sup>
- Renovations are currently more important to reducing greenhouse gases in most developed countries than new construction, due to the larger volume of existing non-green building stock. These older, less efficient buildings are larger contributors to climate change than more modern buildings.<sup>38</sup> There needs to be greater emphasis on the value and benefit of green renovation to improve efficiency and safeguard asset value. Tools such as BOMA Go Green and Go Green Plus are aimed at this market in North America, as is the LEED® Commercial Interior standard.<sup>39</sup> Each helps establish metrics

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<sup>31</sup> See RICS' document "Comprehensive Project Appraisal," RICS Books, 2001, quoted in a paper presented to the [American Real Estate And Urban Economics Association Conference](#). Developed by the RICS with the UK's Environment Agency, the publication is at the time of this writing undergoing revision for publication of a Guidance Note to be appended to valuation standards.

<sup>32</sup> See, for example, "[Value at Risk: Climate Change and the Future of Governance](#)."

<sup>33</sup> See "[The Trouble With Valuating Green](#)" by Kennedy Smith, which notes some of the problems valuers have in appraising green assets.

<sup>34</sup> This was called for in the Green Building Council of Australia's paper, "[Dollars and Sense of Green Buildings](#)."

<sup>35</sup> The UK's Building Research Establishment ("BREEAM") has published [guides and information by sector](#). Canada Green Building Council has also published a shortened paper, "[Green Buildings in Canada](#)." More work on documenting the value of sustainability is proposed by a consortium including the Cascadia Region, US Green Building Council, under a "[Green Building Value Initiative](#)."

<sup>36</sup> For example [Smart Growth Bylaws](#) developed by West Coast Environmental Law.

<sup>37</sup> See, for example, the City of Seattle's "[Green Factor](#)," which encourages sustainable behavior.

<sup>38</sup> Noted, for example, in "[Special Considerations in the Valuation of Sustainable Properties](#)" by Tim Lowe and Theddi Wright Chappell.

<sup>39</sup> See websites for BOMA Go Green in the [US](#) and [Canada](#), Go Green Plus in [Canada](#), and LEED® CI for [US](#) and [Canada](#).

by which sustainability can be measured; however, they mostly do not directly translate into market value.

- Some investors are concerned that their portfolios of “non-green” buildings may reduce in value. For most, ‘green upgrading’ will only be undertaken as part of life-cycle replacement and the benefit is largely being valued as life-cycle and cost payback, which needs to be distinguished from market value. If cost savings are the only metric, change to existing building stock is going to take some time because they aren’t large enough to motivate owners.
- Unless salesmen can understand and explain the additional value, the extra benefit of sustainability won’t be sold, occupiers won’t pay more for it, it won’t show up in the valuation, and extra value won’t be achieved. Salesmen are important to communication of sustainability and need to be better engaged and informed. Again, establishing and measuring the business case for sustainability is important.
- Given all this, developers and owners may find the challenge and risk of being sustainable often too great a shift, for little reward.

Clearly, information and communication is an underlying theme with the measurement and documentation of value central to each sector, expressing the risk and value benefit—or detriment—to each audience in their own terms. It cannot be undertaken solely by groups seen as ‘green advocates,’ as this will tend to invalidate the impartiality of the information.<sup>40</sup> Change is inevitably going to be slower than some desire and will be incremental due to the complexity of change.

Simplistically, there are two possible solutions to trigger change. Personal and/or profit motivation is one, the other is regulation. Value can be useful to both and provides neutrality: if the value exists it will be reflected in valuations, whether positively or negatively. Marketers can explain the impact when selling or renting. Fund managers can advise on green investments. Lenders and insurers will know whether loans and risks are secured and appropriate. Governments can tax or credit value once it is known and tracked. None of this is possible unless the environment starts to be valued properly.

This presents a systemic “change management” challenge but there are signs it is happening,<sup>41</sup> with innovators and entrepreneurs pioneering the change. Providing these early adopters’ value is proven take-up should broaden, but in the interim the inability to consistently prove sustainability’s value will hinder change.

On 2 March 2007, the [Vancouver Valuation Accord](#) was launched, building on the Green Value study. It intends to improve knowledge of the connection between sustainability and value, for

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<sup>40</sup> Attempts by green building councils to communicate the value have gained traction but arguably remains limited. Despite rapid growth in Canada over a short time, but when public interest in sustainability is high, CaGBC’s 2006 market penetration for new construction is in the order of three percent. Valuation is used for almost 100 percent of the market. Rightly or wrongly, documents published by CaGBC and others come from a sector that is associated with the product being advocated; thus, the independence is not always given full appreciation.

<sup>41</sup> Jones Lang Lasalle’s “[Assessing the Value of Sustainability](#)” noted the knowledge gaps in the industry relative to Australia.

valuers and other associations and interested parties. Meanwhile in the United States, the [Green Building Finance Consortium](#) aims at addressing the need for independent research and analysis of investment in green or energy-efficient buildings. The two initiatives have similar and compatible objectives, are linked and are working together.

#### 4. The Valuation Challenge

Valuation isn't solely practiced by valuers and appraisers, but their methods are vital to understanding the issue being faced. Understanding some of the main components may help how sustainability can be addressed through valuation.

- With relatively little supply of sustainable buildings, evidence is often insufficient to allow easy comparison of sustainable buildings, or sustainable attributes of buildings, making it more difficult to prove value.
- There are several techniques used to value assets but not all are equally suitable or efficient at valuing environmental services.
- The use of Discounted Cash Flow methods (DCF) reduces the benefits from sustainable investment since these are often received as a long cash flow and thus deferred. Future benefits are literally discounted, reducing the financial value today but emphasizing the investment cost, which may be higher. Careful consideration of the discount rate is central and the greater certainty of environmental benefits, and higher risk from environmental impacts, will affect the discounted value. IRRs will be arguably less accurate than MIRRs<sup>42</sup> in reflecting sustainability.
- Risk is handled differently in some valuations and especially in smaller markets, which use an “all risks yield” to value cash flow. Conversely, the multiple yield approach allows each aspect of an investment or risk to have its own risk/return rate, which allows individual sustainable aspects of a building, and broader environmental services, to be adjusted and better recognized.
- Life-cycle benefits may not have a market value, or they may be reduced. For example, a buyer may not be prepared to pay for the entire benefit of a geothermal system or energy reduction program, because it may be risky or have questionable life term. Thus, not all life-cycle value is captured in market value.
- Market valuations are basically an estimate of the highest value a single entity is prepared to pay, termed the “highest and best use and value.” Environmental impacts are not borne by the single developer or investor, however, and would require a different approach for valuation, known as “Public Interest Value,” which is debated by some. The truth is that not all value is reflected in market value, and climate change is more completely addressed once non-market value dimensions are taken into account.

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<sup>42</sup> IRR is an Internal Rate of Return, an MIRR is a Modified Internal Rate of Return. While an IRR uses a single discount rate, an MIRR uses different rates for compounding and discounting, improving the likelihood that sustainable life-cycle value is more accurately reflected.

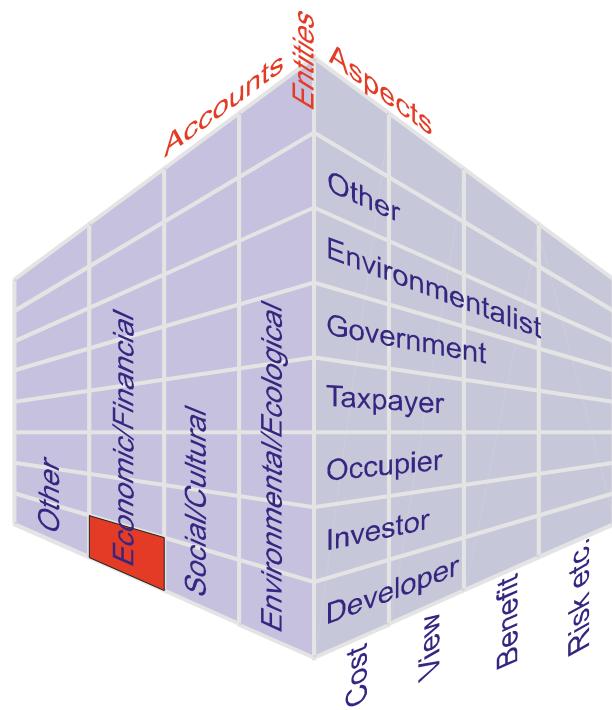
There is thus a need to consider a wider range of aspects of value than is reflected currently by market value. Figure 1 illustrates how a wider range of considerations, more like Public Interest Valuations, are important and affect not only multiple parties, but are also felt in different ways:

- Typical real estate developments happen because an *entity*—often the developer—anticipates that the project will be profitable. This is a view on the economic or financial *account*, shown as the red square in Figure 1. This drives development to happen.
- Other *entities* will be affected by the development. Each will have their own view of the risks, costs, view attributes and other *aspects* affecting them, some of which may be social, cultural, or ecological and not just financial. Each of these *aspects* defines their attitude to the project.
- When climate change is involved, items such as loss of swamp, reduced water supply, pollution, etc., may affect the wider community if, for instance, a hurricane hits, as with Hurricane Katrina. However, because the impact is dispersed and the valuer only looks at market value, the broader impacts of climate change decisions may go unnoticed or be undervalued.

Changes to valuation practices to understand the impact of sustainability will not be simple, even if it is agreed that they are appropriate. That change is desirable is debated, or often goes unrecognized (or is even refuted), and the impact on standards and practices is likely to be technical. Some deny this change even before the need is assessed, but gradually the number of articles, publications, and discussions on this topic is increasing. That there is debate is at least a start in the right direction.

## 5. The Move to Broader Valuation

Arguably, the reason we have a global warming problem is because, for example, environmental impact, or benefit, is under-recognized.<sup>43</sup>



**Figure 1: “Sustainability Cube”**

<sup>43</sup> The “[Tragedy of the Commons](#)” and other concepts have increasingly been used to describe the broader impact

- The first challenge is perhaps to move beyond a single way of looking at how value is defined, to recognize environmental, financial, ecological, cultural, social and other aspects. This is where Triple Bottom Line<sup>44</sup> accounting comes in.
- The second challenge is to realize that value affects more than the person willing to pay most for something and considers more than the highest and best use and purchaser. This means including other parties' interests and how they may be affected. This is termed Public Interest Value.
- The third challenge is to better recognize longer time-scales when considering sustainability, and the other attributes of risk. This tends to run contrary to most North American enterprise and business practices, which reward short-term financial approaches.

The problem can best be illustrated by the example of a Thai shrimp farm, illustrated in Figure 2 and Figure 3.<sup>45</sup> Analyzed in the Millennium Ecosystem Assessment, it shows that, valued traditionally for the shrimp farmer or his lender, the valuer would conclude the value to be worth \$2,000/hectare (net of building costs—Figure 2). The mangrove swamp it replaces only yields about \$160/hectare net, and thus cannot compete. In a traditional valuation, the shrimp farm is the highest and best use and value. Theoretically, it should outbid everyone and be built.

The problem is that the wider public interest is not addressed by this. It turns out that government subsidizes the shrimp farm and the loss of the mangrove swamp increases the potential for storm damage (Figure 3). Adjusted for these factors that affect other *accounts* and *entities*, the shrimp farm is only worth \$70/hectare and the mangrove swamp is worth \$3,840/hectare. Finally, because loss of the mangroves increases storm impact, the cheapest solution is to restore the swamp, which takes time (and considerably more money).

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<sup>44</sup> The Triple Bottom Line concept was first proposed by John Elkington in *Cannibals with Forks*. The three bottom lines comprise social, environmental and economic accounts. Since then, other accounts have been proposed.

<sup>45</sup> S Sathirathai and EB Barbier, 2001, [Valuing Mangrove Conservation in Southern Thailand](#), *Contemporary Economic Policy* 19(2): 109–122 (April).

Adjusting for the public interest, therefore, government is in fact the highest and best purchaser and would logically restrict the use to mangroves or buy the land, as it is worth more to the taxpayer as a mangrove swamp than in any other use. A traditional valuation for the lender to the shrimp farm will not identify this.

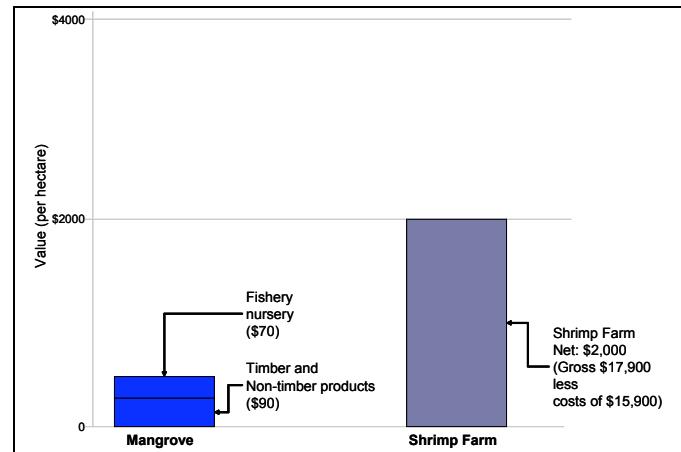
Governments do not usually require these kinds of valuation (either in Thailand or elsewhere). A Public Interest Valuation that considers the perspective of the environment and other parties would probably be the only solution.

The same concept applies in NAFTA countries; for example, Public Interest Valuations might have identified the potential results of losing Mississippi Delta swamps to development, and thus reduced the impacts of Hurricane Katrina.<sup>46</sup>

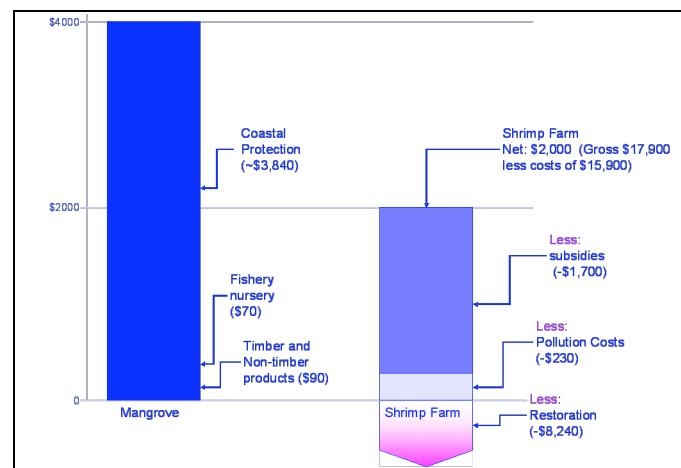
## 6. Valuation and Finance

It will be easier to work with existing, proven financial value within existing business processes than to effect fundamental change to valuation standards. Some examples of how this is changing may be of benefit.

Lenders are gradually supporting sustainability in the United States and Canada. In British Columbia, Credit Union VanCity has established grants supporting community initiatives<sup>47</sup> and is backing development projects such as the proposed LEED® Platinum Dockside Green.<sup>48</sup>



**Figure 2: Traditional Valuation—Thai Shrimp Farm vs. Mangrove Value**



**Figure 3: Public Interest Perspective—Thai Shrimp Farm**

<sup>46</sup> According to a review by the Senate Committee on Homeland Security and Governmental Affairs ([Hurricane Katrina: A Nation Still Unprepared](#), Special Report 109-322), the total cost of Hurricane Katrina exceeded US\$300bn. Given that this was one storm event and does not preclude others, the recovery and restoration of delta areas may be worthwhile. The public interest valuation in the Thai study suggests that this is indeed the case.

<sup>47</sup> See <https://www.vancity.com/MyCommunity/CommunityFunding/GreenBuildingGrant/?id=communityMain> and its involvement in Dockside green at <https://www.vancity.com/MyCommunity/AboutUs/WhoWeAre/Subsidiaries/VancityEnterprises/CurrentProjects/>.

<sup>48</sup> See <http://www.docksidegreen.com/>.

VanCity also supports green homes, for example, through its Bright Ideas home financing initiative (which also supports home retrofit), and a separate initiative that funds geothermal exchange. The pension fund British Columbia Investment Management Corporation invested in the energy company Corix, which provides a similar mechanism, illustrating pension fund interest in sustainability.

Internationally, financing has gone further. For example, one Japanese bank<sup>49</sup> makes available a mortgage finance rate as much as 1.5 percent lower for homeowners in green buildings. This has increased demand from buyers and owners and accelerated CASBEE, the Japanese equivalent of LEED®, raising developer and lender interest in building green, driven by public demand for green buildings with lower mortgage rates. The principles driving the banks to offer the lower rates are reduced risk and improved loan security, not just competition.

Sustainability can thus gain traction in the real world by reporting its different value, demand and risk, and does not need standards or processes to have an impact. But it requires that fund managers, investors, lenders and others be able to impartially and knowledgeably value sustainability, risk and other attributes, and reflect this value in financing and investment decisions. This means, pivotally, that the differences need study and communication.

## 7. Conclusions and Recommendations

Assets are responsible for over 40 percent of greenhouse gases and more sustainable development and ownership of buildings is necessary.

Value is a driver to sustainability as it can help engage profit motivation. With changes to accounting and valuation professions and standards, and increasing recognition of the value of the environment, value and risk will form an increasing part of the progress of sustainability.

- Case studies should be funded across all relevant sectors. They must be impartial and peer reviewed to avoid possibility of claims of partiality, advocacy or influence. The professions and associations are the logical parties to handle this, with external input and peer review.
- Communications should be aimed at each sector in terms that are understandable, that explain the different attributes of sustainable assets and amenities.
- Accounting and valuation standards should continue to harmonize and improve recognition of sustainability on corporate accounts, using market value in preference to cost approaches and reporting this in accounts.
- Governments should be encouraged to fund review of sustainability by valuation professions and this should cover the aspects raised by the Sustainability Cube.

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<sup>49</sup> Reported at a Japan-Canada symposium on green building leadership, held at the University of British Columbia, 6 September 2007.

- The clients of valuation professions should encourage valuers to review risk, including environmental risk, and consider whether it should be embedded within valuation standards and processes.
- The valuation professions should consider the role of environmental risk in valuation reports. Valuers should consider the impacts on multiple accounts and to multiple parties.
- Guidance Notes should be published to supplement standards, covering them and providing guidance on the impact of financial and non-financial aspects on parties beyond the highest and best user.<sup>50</sup> Both the valuation and accounting professions may wish to consider requiring the environment to be considered, within professional standards, rather than waiting for government legislation.
- Companies and governments with Special Purpose Assets may wish to consider reporting Alternate Use Value, so there is quantification that assets have a benefit and life beyond their current use. This should include an assessment of the value of environmental attributes. Such assessments can be undertaken as additional reporting measures alongside existing reporting.
- Governments at all levels should consider establishing review laws, bylaws, practices, processes, etc. Those with a conflict of interest in the status quo should not undertake the review. Barriers to sustainable action should be reduced or removed.
- Greater consideration of Public Interest Value and not simply cost, will be desirable for major project decisions by government. It may be necessary to mandate that GHG status be valued and reported in corporate and government accounts.<sup>51</sup>
- Governments should consider encouraging sustainability through positive reinforcement, by establishing criteria for developments, renovations, etc., that if met, accelerate processes, reduce costs and improve value (e.g., through density bonuses or bylaw relaxation). This will encourage change through increased value.

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<sup>50</sup> RICS has commenced this item in the UK. Its document “Comprehensive Project Appraisal,” published in 2001, was developed over a four-year period in conjunction with the UK’s Environment Agency. It covers many of the broader environmental issues noted in this paper. It is proposed that Comprehensive Project Appraisal will create a Guidance Note attached to the RICS’ Manual of Valuation and Appraisal (“The Red Book”). Valuers are required by professional standards to include Guidance Notes in their considerations. Thus, and for the first time known to this author, the environment will start to be a significant part of standards. Comprehensive Project Appraisal is currently out of print while it is being revised.

<sup>51</sup> See Footnote 25. The Climate Action Charter is one step in the move towards client demand for reporting carbon.