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Investing in ecosystem health: Using rivers as a case study

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PERSPECTIVE

Investing in ecosystem health: Using rivers as a case study

By Jeff Bennett

Ecosystems are assets

Accountants define assets as 'resources which promise future economic benefits to the business' (Hoggett & Edwards 1987, p.15). Even though accountants see assets as being diverse — ranging from tangible assets like buildings and equipment through to intangible assets, such as patent rights and goodwill — the accounting definition is limiting. First, the notion of an asset should not be restricted to the business world. Individuals hold assets. Society as a whole holds assets. Second, some resources promise benefits that are outside the realm of 'economic' in the financial sense of the word.

It is by extending the accountant's notion of an asset that the issue of investing in ecosystem health can be analysed.

Begin by considering the asset holdings of individuals. People hold financial assets in the form of bank accounts, shares and bonds. These assets hold out the promise of financial returns in the form of interest payments and dividends. People also hold physical assets like cars and houses. These assets are valuable because they promise the benefits of the services they can provide — mobility, shelter and so on. Some of the assets individuals hold are intangible. Among these are the knowledge and skills people acquire. They promise returns in terms of financial income. But they also offer non-monetary returns defined in more nebulous terms, such as satisfaction and utility.

Now consider ecosystems and their components as assets. They promise a wide array of future benefits both financial and non-monetary. Take one of the most vulnerable components of ecosystems, rivers, as an example. Some businesses use them as their source of water for irrigating crops and livestock that are sold for profit. Other businesses use them as the basis for white-water rafting ventures, again in search of financial rewards. Individuals who enjoy picnics by a river or who go boating, fishing or swimming will see that river as an asset that provides benefits to them through time. These benefits are enjoyed as a result of people coming into direct contact with the river. Other

benefits are generated without direct contact. For instance, a river can be a source of biological diversity benefits ranging from gene-pool maintenance to the protection of endangered species.

Hence, rivers and other elements of the ecosystem are assets that provide future benefits to society that are tangible and intangible, monetary and non-monetary. Some of the benefits can be received by individuals as private profits while others are available to the broader community as public goods.

Depreciation of assets

A further basic concept of accountancy of relevance to assets is depreciation. But you don't need to be an accountant or in business to understand the concept and its importance. We all live with depreciation. If you own a car, you'll know that as you use it you progressively wear it out, and as you wear it out, the value of the car falls. That fall in the price of the asset is depreciation. The falling price is simply a reflection of the reducing future benefits that the asset will be able to provide.

What you need to do to cope with depreciation is to keep putting aside some of your hard-earned money in order to either buy a replacement car or to pay for repairs to the old one. If you don't do this — if you instead consume all your income — the time will come when your old car gives up and you'll not be able to afford a new one or you'll have to go into debt to buy a replacement.

Businesses do the same. They set aside some of their profits as 'depreciation allowances' to allow them to maintain or replace their assets. They do this in the knowledge that if they don't, their continued ability to produce income will be jeopardized. They recognize the need to keep investing this depreciation allowance into the maintenance of their asset base. After all, it is that asset base that generates the future benefits for the business, and the concept is not just true for tangible assets like machines and buildings. A business's intangible assets can also depreciate. For instance, the skill base of a business's work force can become outdated. The human capital asset of the company is in that way depreciating. Maintaining the skill base of its employees through the provision of training is thus a form of investment in the asset base of the business.

The concept of depreciation is also relevant to ecosystems. The more ecosystems are used to provide benefits to individuals and to the broader community — particularly when their use involves the extraction of resource elements — the less able they are to maintain their promise of future benefits. Returning

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