Glossary

Autistic economics — European students made this critical comment on the failure of NeoClassical economics. They argued that economists typically make highly complex calculations of profit and loss without ever considering humans, the environment, or the future. This leads to precise but completely wrong analyses.

The Task Force on Climate-Related Financial Disclosures (TCFD) —publishes recommendations for climate-related financial risk disclosures.

Cradle to cradle — and economy based on the production and use of materials that are infinitely reusable or recyclable

Deferred maintenance — neglect of critical maintenance, particularly common in government operations. Often with exponential growth in costs for repairs when finally made. Studies by several DOTs have shown that every $1 spent on pavement preservation can save $10 or more in future future rehab costs. San Diego has 2800 miles of road with half in poor condition in 2015.

Depreciation — the reduction in the value of an asset over time from wear and tear. One of the first uses was in plantation management before the civil war to value slaves through their lifetime. Depreciation wasn't used in accounting textbooks until the 1880s.

Discount rate — the rate of devaluing the future. If the discount rate is 10% then we are saying the future 7 years from now is worth only half as much as today. This may be appropriate for a 70 year old man – but leads to catastrophic policy choices for a company, state or nation.

Ecofootprint or ecological footprint — the impact our lives (products, companies or countries) have on the Earth's resources and support systems (on line calculators often display this as the area needed to support our lifestyles). Even at the relatively low resource consumption rates of college students we would need 3 more planets!

Ecofootprints can be general or specific. It some cases it may make sense to determine just the energy or water footprint of a project or action.

Ecopreneurship — creation of sustainable businesses to meet human needs and protect and restore the planet.

Equity — the fairness of income distribution. Typically given as the GINI coefficient. The Gini coefficient of the U.S. was 45 in 2007, this represents high inequality and is very close to the average Gini coefficient of African countries. In contrast, Nordic countries in Europe—such as Finland (27.2) and Sweden (24.9)—have a similar income per capita as that in the U.S., but much lower Gini indexes. The lower inequality in these countries is partly due to tax systems that redistribute income across countries and includes social security, health insurance, education and unemployment benefits.

External costs – the currently uncounted costs of our actions, products and services. Often dominated by health impacts, pollution, resource depletion, loss of ecosystem integrity, disease and damage. For example, coal fired power plants lead to acid rain, mercury pollution and nitrogen pollution. These have enormous environmental and health costs.

Factor 4 – four times as efficient as today, getting equal quality of life and productivity with only 25% of the resource investment. Factor 10 would use only 10% as much, Factor 20 only 5% as much. We have a number of examples where Factor 10 has been achieved.

Four Rs – reuse, reduce, recycle, return to nature (what we should have learned in school).

Full costs — this can be confusing as some people use this instead of True Cost. However, full cost is more appropriately used for developing very careful accounting for existing financial impacts and effects. The cost of deferred maintenance, for example. is often ignored until it is too late. Full cost accounting can also be helpful in attributing "overhead" costs to actions or products and developing a more accurate view of the financial status of a company or effect of a government program.

Genuine Progress Indicator (GPI) – a more comprehensive evaluation of progress in a Society, including terms for health, educational achievement, environment, resources (an alternative to the meaningless Gross Domestic Product (GDP).

GINI coefficient — A Gini coefficient of zero expresses perfect equality, where, for example, everyone has the same income. A Gini coefficient of one (or 100%) expresses maximal inequality, e.g. where one person has all the income or consumption, and all others have none

Global reporting initiative –- an independent stakeholder developed sustainability reporting process. GRI looks at the company's impacts on the world - SASB looks at the worlds impact on the company.

Green fee (Pigouvian fee) – a method of including external costs and risks in product and service costs.

Ilth – the opposite of wealth, a useful term from John Ruskin.

Internal costs — currently counted costs of products (labor, shipping, sales, ads, manufacturing).

LEED — is a building rating system that supports projects with sustainable and healthy building designs, materials, and detailing to realize environmental, economic, social and community benefits for decades to come.

Life cycle costs – the cost of a product from its inception to demise (landfilling or recycling). Includes the cost of mining to create the machines that made the machines that made the product, transportation, maintenance, repair and replacement, disposal.

Material intensity per service (MIPS) – an ecological footprint or "rucksack" for materials, including external costs. Excellent work by the Bio Schmidt-Bleek and the Wuppertal Institute in Germany provides some detailed comparisons of true costs.

Natural Capital – the often uncounted value of wild lands and natural areas. Forest value includes timber, biodiversity, water, etc. Fish stocks, beneficial insects, ground water, and many other resources are part of our Natural Capital.

Nature's Services – the services Nature provides for free, including such things as oxygen from trees, dust and sound suppression by trees, pollution cleanup by bacteria, fungi and sunlight.

Open access problem - the problem of an un-owned resource, like fish in the center of the Pacific Ocean. Whoever gets there first and takes the most wins (current government subsides are $1.50 per $1 of fish harvested). Sometimes incorrectly called the "tragedy of the commons" after a paper by Garrett Hardin, who had a poor understanding of how tightly regulated many traditional common areas.

Opportunity costs – the cost of making choices. For example, rather than spending 113 billion in corn subsides from 1995-2019 we might have research new perennial crops, dealt with critical health care issues, invested in education, repaired parks and forests, and provided safe drinking water to everyone on earth (estimated to cost just 50-60 billion dollars).

Perverse incentives — often well-intentioned programs that un fortunately lead to unwanted impacts. The perfect example was a major airlines effort to conserve fuel during an oil price spike. Pilots were rewarded for saving fuel. They did this by flying slower and closing fresh air vents to reduce drag. Customers were not delighted to have stale, hot air and repeated delays and missed connecting flights. Eventually the policy was rescinded.

Even with new programs like LEED many parties involved in new building construction have perverse incentives to do the things that increase life cycle costs, energy use and life cycle cost and ecological footprint. The lowest price at any cost is a big driver.

Race to the bottom – the Neoclassical economist's belief that work should be done in the cheapest way possible (neglecting external costs of course). Thus if you can manufacture in a country where the pay rate is 9¢ hour and there are no labor or environmental laws then you must, or you are violating the trust of your shareholders.

Savage capitalism – a European comment on American capitalism pursued with little regard for morality, ethics, justice, equity, community, health or environmental quality. The slave based cotton and rice economies of the South before the Civil War are were exemplars of Savage Capitalism. The reign of King Leopold II of Belgium was even worse. He ruled the Congo Free State from 1885 to 1908. During his absolute rule of the Congo, an estimated 2-10 million Africans were killed or died, many from torture.

Socially responsible investing (SRI) – investment with an effort to reduce harmful impacts. Often the SRI screens are very weak (i.e. no tobacco stocks but Halliburton is ok), so investor beware.

Subsidies — money, avoided taxes, or regulatory relief granted by the government or a public body to assist an industry or business. The goal is to reduce the apparent price of a commodity or service. Too often in environmental programs the subsidy is offered to offset the low prices of unsustainable actions that have very high, uncounted external costs. Almost all subsidies distort the market and reward neglect of true costs.

For example, the Crescent Dunes solar power tower in the Nevada desert was enabled by a $737 billion loan from the U.S. Department of Energy and $119 million in tax credits from the state of Nevada. It produced just 45 jobs at a cost of $22 million each. It operated for just 3 years and produced electricity at a cost 4 times as much as wind energy and more than twice as much as natural gas.

Sustainability – the use of resources, people and capital in a manner that will not degrade or decrease future generations ability to achieve a comparable quality of life. Investors, lenders, insurance underwriters, and other providers of financial capital are increasingly attuned to the impact of environmental, social and, governance (ESG) factors on the financial performance and risk profile of companies.

SASB, Sustainability Accounting Standards Board— is a non-profit organization, founded in 2011 to develop sustainability accounting standards. Initially the goal was to develop standards for use in corporate filings to the U.S. Securities and Exchange Commission (SEC). Now with global reach, 200+ countries. In 2019, SASB began a collaboration with the Climate Disclosure Standards Board (CDSB) to create an effective solution for TCFD implementation by global organizations across all industries.

Triple bottom line – corporate profit measured in terms of economics, environment and social considerations.

True costs – the full cost of our actions including internal and external costs. The external costs often may exceed the internal benefits. Health costs are often the largest and easiest external cost to estimate. Ecological long term costs can be very large but are harder to quantify.

War capitalism —the recognition that many economic bonanzas were made through violence. For example, the, at the time, very profitable fur trade in western North America often involved violence against the First Nations. Furs were stolen, obtained by holding hostages, and forced labor. The destruction of villages and massacres of natives was often done without cause.

Highly recommended – join the United States Society for Ecological Economics. www.ussee.org

David A. Bainbridge was trained as an ecologist and earth scientist, but has had a career long interest in understanding the economic signals and incentives that drive development and resource management. He was a founding member of the USSEE. One of his mentors, ag engineer Loren Neubauer, had a banner above his workbench. ***"It is better to be crudely right than precisely wrong."***