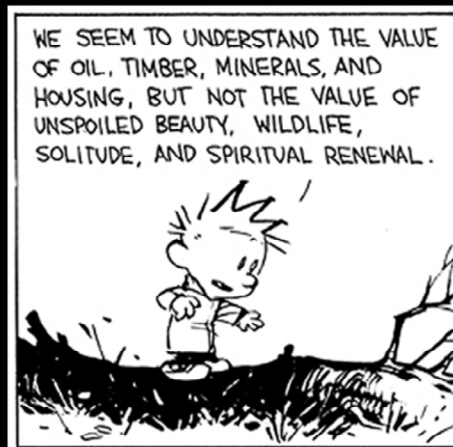


## Can Natural Assets Be Accounted for Economically?

- This is an important question because current approaches to economic accounting do not include natural assets – that is, the environment is not included as having any value.



*"[We measure] neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country' It measures everything in short, except that which makes life worthwhile."*

Robert Kennedy, 1968

- This Calvin and Hobbes cartoon illustrates the problem.
- And the quote by Robert Kennedy elaborates.
- The quote specifically refers to human qualities, but also what “makes life worthwhile” is natural capital (the environment).

## Can Natural Assets Be Accounted for Economically?

- So, as Kennedy asked, can we account for the things that make life worthwhile, especially the environment?
- This question requires explanation of two things:
- What are “natural assets” and why is it important to consider them?
- What is “economic accounting” and what does it tell us and doesn’t tell us?
- Let’s take these in reverse order.

## The System of National Accounts (SNA)

*“The System of National Accounts (SNA) is the internationally agreed standard set of recommendations on how to compile measures of economic activity. . . The SNA is intended for use by all countries. . .”*

<https://unstats.un.org/unsd/nationalaccount/sna.asp>

- The System of National Accounts is an internationally agreed upon framework to measure the economic activity of all countries.
- It involves a number of factors but is heavily dependent on Gross Domestic Product (GDP).
- It is intended for use by all countries of the world and allows for comparisons across countries.
- It is useful in many ways, but it has limitations.

Important points:

- It is a gross measure of ALL activity (bad things as well as good, such as cleanup of an oil spill or body shop work after a car crash)



<https://www.sciencephoto.com/media/184321/view>



<https://russellgrayblog.wordpress.com>

- Chief among these limitations is that it is a measure of gross economic activity that includes bad, destructive things as well as positive things.
- For example, it includes money spent on cleanup of an oil spill or on fixing cars after they crash.

Important points:

- It is a gross measure of ALL activity (bad things as well as good, such as cleanup of an oil spill or body shop work after a car crash)



<https://www.sciencephoto.com/media/184321/view>



<https://russellgrayblog.wordpress.com>

- It is monetary exchange in the formal economy (does not include things such as housework, child care or elder care at home, unpaid labor or services provided voluntarily, or environmental degradation)



<https://pluralist.com/how-elder-care-will-change-in-the-next-decade/>



<https://www.worldatlas.com/articles/what-is-environmental-degradation.html>

- It also fails to include many things that people consider important but for which no money is exchanged.
- Examples include elder care or environmental degradation.
- In 1968, Robert Kennedy stated that we count “*air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. It counts napalm and counts nuclear warheads and armored cars for the police to fight the riots in our cities. It counts Whitman’s rifle and Speck’s knife, and the television programs which glorify violence in order to sell toys to our children.*”

## The System of National Accounts (SNA)

Invented in 1934 by Simon Kuznetz and updated several times since then.

Kuznets warned that it was an imperfect measure of the welfare of a society and that, *“The welfare of a nation can scarcely be inferred from a measurement of national income. . . . Distinctions must be kept in mind between quantity and quality of growth, between its costs and return, and between the short and the long term. Goals for more growth should specify more growth of what and for what.”*

<https://gnhusa.org/gpi/the-case-against-gdp-made-by-its-own-creator/>

- The System of National Accounts was invented in 1934 and has been updated several times since then.
- Its inventor, Simon Kuznets, warned that it was an imperfect measure of the welfare of a society and that, *“The welfare of a nation can scarcely be inferred from a measurement of national income. . . . Distinctions must be kept in mind between quantity and quality of growth, between its costs and return, and between the short and the long term. Goals for more growth should specify more growth **of what and for what.**”*

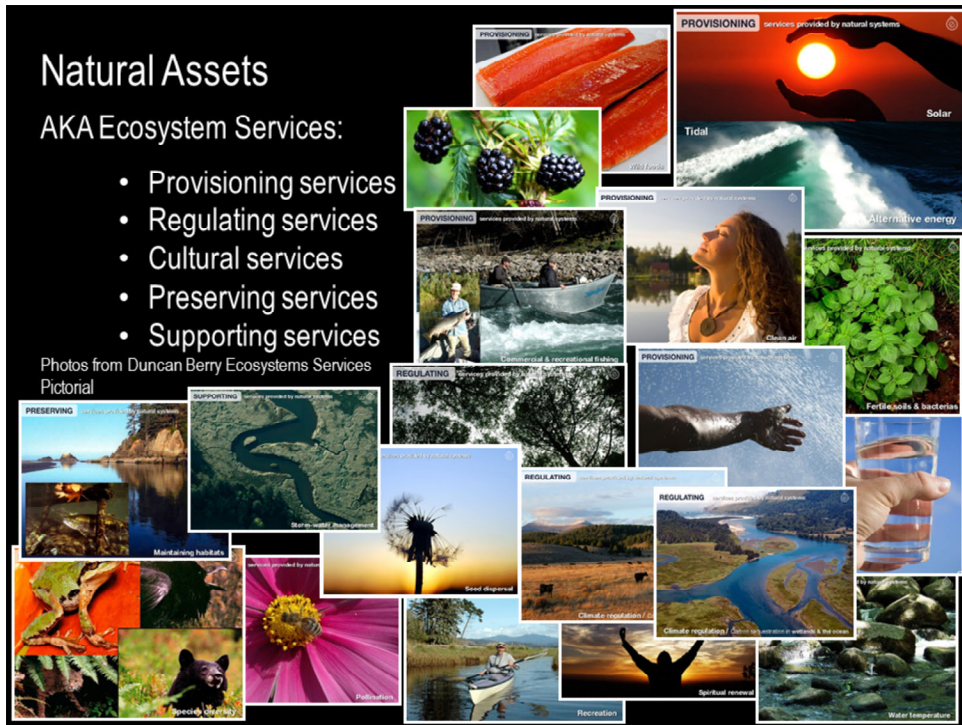
## Natural Assets

*"[T]he world's stock of natural resources, which includes geology, soils, air, water and all living organisms. . . All of these underpin our economy and society, and thus make human life possible."*

[https://en.wikipedia.org/wiki/Natural\\_capital](https://en.wikipedia.org/wiki/Natural_capital)

- Natural assets (also called “natural capital”) have been defined as “[T]he world's stock of natural resources, which includes geology, soils, air, water and all living organisms. . . . All of these underpin our economy and society, and thus make human life possible.”
- As the quote states, they underpin our economy and society and actually make human life possible.





- They are sometimes called “ecosystem services” because they are aspects of the environment that provide services to humans.
- And the environment provides a phenomenal amount of services:
- Provisioning services include things like wild foods, medicines, wood products, fertile soils, bacteria, various forms of energy, water for myriad uses and especially for drinking, fishing, and clean air.
- Regulating services include things like the regulation of water temperatures, regulating the climate through plants, soils, and wetlands, and the oceans that regulate weather as well as climate.
- Cultural services include things like recreation, inspiration, spiritual renewal, reflection, educational opportunities, scientific inquiry, community building, and a sense of wonder.
- Preserving services include things like biodiversity, wildlife, and habitats.
- Supporting services include things like pollination, seed dispersal, filtering, pest and disease control, storm water management, nutrient cycling, and waste decomposition.

## The System of National Accounts (SNA)

Does not account for these natural assets.

*“The world's ecosystems are capital assets . . . Often the importance of ecosystem services is widely appreciated only upon their loss.”*

Daily et. al. 2000. The value of nature and the nature of value. *Science* 289(5478). Available at <https://www.science.org/doi/10.1126/science.289.5478.395>

- Unfortunately, the System of National Accounts does not account for these natural assets.
- As this quote from Daily and colleagues indicates, ecosystems should be considered capital assets and their importance is often not appreciated until they are gone.
- But not everyone agrees.

## The System of National Accounts (SNA)

Does not account for these natural assets.

*“The world's ecosystems are capital assets . . . Often the importance of ecosystem services is widely appreciated only upon their loss.”*

Daily et. al. 2000. The value of nature and the nature of value. *Science* 289(5478). Available at <https://www.science.org/doi/10.1126/science.289.5478.395>

George Monbiot has argued against the concept of natural capital stating that the valuation of nature is *“morally wrong, intellectually vacuous, and most of all counter-productive.”* He suggests that trying to account for the value of nature will inevitably lead to its commodification, marketization, and ultimately destruction.

<https://www.theguardian.com/commentisfree/2018/may/15/price-natural-world-destruction-natural-capital>

- George Monbiot has argued against the concept of natural capital stating that the valuation of nature is “morally wrong, intellectually vacuous, and most of all counter-productive.”
- He suggests that trying to account for the value of nature will inevitably lead to its commodification, marketization, and ultimately destruction.

## The System of National Accounts (SNA)

Does not account for these natural assets.

*Monibot offers “a valiant, if misguided, attempt to shut the barn door long after the horse has bolted. The fact of the matter is, our global economic system already places economic values on the natural world – it’s been doing so for centuries, in fact. The problem is that the price placed on many parts of the natural world – ecosystems, biodiversity – is effectively zero . . . Without our deliberate intervention to value nature, markets remain largely blind to these benefits, and thus we consume them to the point of destruction.”*

<https://www.greeneconomycoalition.org/news-and-resources/natural-capital-what-we-dont-value-we-destroy>

- Others have argued that the global economic system already places an economic value on nature and that the value it places on it is zero.
- Consequently, it is essential to deliberately place a value on nature so that the market economic system is not blind to it.

## The System of National Accounts (SNA)

Does not account for these natural assets.

*“It is a misconception to assume that valuing ecosystem services in monetary units is the same as privatizing them or commodifying them for trade in private markets . . . privatization and conventional markets work poorly, if at all [so] knowing the value of ecosystem services is helpful for their effective management.”*

Costanza et. al. 2014. Changes in the global value of ecosystem services. *Global Environmental Change* 26. Available at <https://www.sciencedirect.com/science/article/pii/S0959378014000685>

- Moreover, Costanza and his colleagues argue that it a misconception and not the case that valuing ecosystem services necessarily leads to privatizing or commodifying them.’
- They echo the idea that knowing the value of ecosystem services is essential for their management.

## What Are Ecosystem Services Worth?

125 – 145 trillion dollars per year (in 2007)  
compared to  
World GDP of 57.86 trillion dollars (in 2007)

Costanza et. al. 2014. Changes in the global value of ecosystem services. *Global Environmental Change* 26. Available at  
<https://www.sciencedirect.com/science/article/pii/S0959378014000685>

- Costanza and his colleagues have estimated that they are worth \$125 to \$145 trillion per year, measured in constant 2007 dollars.
- For reference, world GDP during this year was 57.86 trillion dollars, which means that the value of natural assets upon which the economy and human life depend is two to three times greater than the economy itself.
- Costanza and colleagues state that this is possible because much that ecosystems provide is not captured in GDP but is embedded in services that are not marketed or not fully captured in marketed products and services. Services such as storm protection, climate regulation, and etc. are much larger in relative magnitude than the sum of marketed goods and services (GDP) because not all human benefits are marketed and captured in GDP.

## Efforts to Account for Natural Assets

### System of Environmental-Economic Accounting (SEEA)

#### A number of Accounts:

- (1) agriculture, forestry, and fisheries;
- (2) air emissions;
- (3) energy;
- (4) environmental activity;
- (5) ecosystem;
- (6) land;
- (7) material flow;
- (8) water

<https://seea.un.org>

- The System of Environmental and Economic Accounts (SEEA) has been a decades-long project by the UN to integrate “economic and environmental data to provide a more comprehensive and multipurpose view of the interrelationships between the economy and the environment.”
- <https://seea.un.org>
- National accounting is a complex endeavor and integrating environmental measures has been a long process. SEEA has a number of types of “accounts,” and a few of the thematic accounts include:
  - (1) agriculture, forestry, and fisheries;
  - (2) air emissions;
  - (3) energy;
  - (4) environmental activity;
  - (5) ecosystem;
  - (6) land;
  - (7) material flow;
  - (8) water.

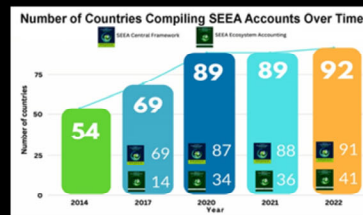
## Efforts to Account for Natural Assets

### System of Environmental-Economic Accounting (SEEA)

- 1987 Brundtland Commission.
- 1992 Earth Summit in Rio de Janeiro
- 1993 Handbook - interim publication
- 1994 London Group
- 2000 Operational Manual
- 2003 Updated SEEA handbook
- 2007 UNSC decision to elevate SEEA to international standard
- 2012 SEEA adopted by the UN as international standard
- 2022 SEEA Global Assessment (92 countries are adopting it)



<https://seea.un.org>



- This is the timeline of the SEEA:
- 1987 Brundtland Commission. To promote sustainable development and the change of politics needed to achieve it, the report *Our Common Future* clarifies the link between economic and social development and the environment's capacity.
- 1992 Earth Summit in Rio. Agenda 21 is adapted as a blueprint to rethink economic growth, advance social equity and ensure environmental protection. It firstly recommends that countries implement environmental-economic accounts.
- 1993 Handbook - interim publication. In 1993, UNSD published the Handbook of National Accounting: Integrated Environmental and Economic Accounting - commonly referred to as the SEEA - as an "interim" publication since the discussion of relevant concepts had not come to a conclusion.
- 1994 London Group. Several countries start experimenting on the compilation of SEEA based data. The London Group is created under the auspices of the UNSC to provide a forum for practitioners.
- 2000 Operational Manual. The Handbook of National Accounting: Integrated Environmental and Economic Accounting - An Operational Manual is prepared by experts from national and international agencies and NGOs



(Nairobi Group).

- 2003 Updated SEEA handbook. The updated Handbook of National Accounting: Integrated Environmental and Economic Accounting 2003 represents a step forward in terms of breadth of material and harmonisation of concepts, definitions and methods.
- 2007 UNSC decision to elevate SEEA to international standard. Recognizing the increasing importance of information on the environment, UNSC agrees to start a second revision process with the aim of adopting the SEEA as a statistical standard within 5 years
- 2012 SEEA adopted as international standard. The SEEA Central Framework is adopted as the international statistical standard by UNSC and is published by the UN, the EU, FAO, IMF, OECD and the World Bank.
- 2022 SEEA Global Assessment. Ninety-two countries are adopting it.
- You'll notice that the US has not yet adopted it.

## Efforts to Account for Natural Assets

### National Strategy to Develop Statistics for Environmental-Economic Decisions

- 1. Develop U.S. natural capital accounts and environmental-economic statistics that provide pragmatic information.
- 2. Produce natural capital accounts and associated environmental-economic statistics that provide domestic comparability through time and pursue an approach that supports international comparisons and harmonization. Enable the US to lead with respect to the development of global standards and lead in implementation of those standards.
- 3. Embed the system of natural capital accounts and associated environmental-economic statistics in the broader U.S. economic statistical system.
- 4. Use a phased approach to transition from research-grade environmental-economic statistics and natural capital accounts to Core Statistical Products, and produce a single headline summary statistic, along with supporting products, tables, and reports that provide information in monetary and physical units. The full system is operational by 2036.
- 5. The Federal Government should apply existing authorities and make use of the substantial expertise within Federal departments and agencies, by coordinating across agencies, to develop and update the system of natural capital accounts and environmental-economic statistics in an efficient manner.

- But the U.S is working on integrating natural assets into the System of National Accounts.
- In January 2023, a publication was produced titled the *National Strategy to Develop Statistics for Environmental-Economic Decisions*.
- The Office of Science and Technology Policy, the Office of Management and Budget, and the Department of Commerce co-chaired a multi-agency working group to develop a plan for the creation of a U.S. system to account for natural assets.
- The plan contains these five major recommendations, with associated supporting recommendations.
- As you can see, the plan is to fully incorporate environmental measures with economic measures and to be a world leader in this regard.

Can Natural Assets Be Accounted  
for Economically?  
Yes. We can do it.

- So, yes, natural assets can be accounted for economically, and they can be integrated into the System of National Accounts.
- The world has been working on this for decades, and the US is putting its extensive expertise into the effort.
- We are on the road to accounting for the environmental assets that make human life possible and “worth living.”.