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Abstract

The roots of System of Environmental-Economic Accounting (SEEA) goes back to the 1970s, but its establishment only took off after 1992. Since then SEEA has been implemented in many countries, and parts of the SEEA accounts are now mandatory reporting under EU law. In this article, I present some of its various uses. As I will show, SEEA is at best a mixed blessing, with strong theoretical ties to neoclassical environmental economics and its capital approach to sustainability. Also, the newer extension of SEEA, including ecosystem accounting and their monetary valuation, are unlikely to support an agenda for a radical social-ecological transformation.

Keywords: environmental accounting, ecosystems, radical transformation, monetary valuation

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Background for establishment the System of Environmental-Economic Accounting (SEEA)

The history of environmental-economic accounting can be traced back to the 1970s and to a criticism of GDP for its neglect of scarcity of natural capital and of the costs to society of environmental degradation. Methodologies for how to make environmentally adjusted national accounts and alternatives to GDP had already been explored for some time, but gained momentum with the Earth Summit in Rio in 1992. In deliberations about why former environmental policies had failed, one explanation was fragmented and eclectic policies and strategies. A shift towards more integration of environmental issues into economic policies was then followed by a call for more integrated data, including development of a system for integrated environmental and economic accounts (Uno and Bartelmus 1998). *Agenda 21*, for example, called for an integrated approach, both in terms of (integrated) policy and in terms of the information needed for such policy (i.e., integrated information) (UNSD 1992: Chapter 8).

Neoclassical (micro)economic theory had already started to influence policy and political arguments to a large extent. In this vein, such integrated information was meant to provide a tool for improved policy design, for example by helping decision makers choose, e.g., quantify trade-offs, help allocate resources, and maximise policy's objective function (Cervigni et al., 2005). The OECD had already since long promoted efficient decision-making using economic analysis (OECD 2006), and in terms of data needs pointed out that efficient environmental decision-making relied strongly on monetary environmental measures.

One of the big projects set up to answer to this call, was the Integrated Environmental and Economic Accounts (IEEA), a set of satellite accounts to the System of National Accounts (SNA). It took another eleven years before the first full compendium was published as a large cooperative project between the UN, the European Commission (EC), the International Monetary Fund (IMF), the OECD and the World Bank (WB) (United Nations, et al. 2003). The system was further elaborated and established as a statistical standard in 2012. In addition to the central framework, a new set of accounts - ecosystem accounts – were added in 2021. The new extension is called SEEA-EA.

The number of countries undertaking environmental-economic accounting is increasing. As of June 2020, 89 countries had implemented SEEA accounts. The number of countries that had implemented SEEA-EA was 34 as of September 2020, with 13 additional countries that were experimenting (UN CEEA, 2021).

The SEEA Central Framework

The SEEA central framework builds on internationally agreed concepts and definitions pertaining to

the measurement of environmental flows (e.g., water, energy, waste and emissions); environmental transactions (e.g., environmental taxes and expenditure); natural resources (e.g., minerals, timber, fish) and ecosystems and the services they provide. The system includes both physical accounts and monetary accounts. These are organised in a common framework of goods and sectors, according to the standard economic-statistical classification (ISIC), whereby they can be linked to create so-called hybrid accounts. Further, the accounts cover both flow accounts and stock accounts, similar to the national accounts themselves.

SEEA pursues the consistent comparison and exchange of data and aims to underpin a range of applications, including the derivation of indicators that reflect the impacts and dependencies of the economy on the environment. These include for example evaluation of an economy's dependence on certain resources (or environmental inputs) and assessments as to what extent a country's economic growth (in GDP terms) is dependent of the consumption of its natural resources.

Environmental flow accounts

Examples of SEEA's physical flow accounts are resource use accounts and greenhouse gas emissions accounts, where the environmental load or resource use is broken down according to economic sector. Resource use accounts show the material and energy input side of the economy while the various emissions and waste accounts add up to the environmental output side. Combined with conventional economic statistics, showing the production of goods and services, and imports and exports, these accounts allow material flow analyses of the whole economy. Such analyses have been much used within industrial ecology and ecological economics to demonstrate the ever increasing material throughput of modern, industrial economies.

Greenhouse gas emissions can also be combined with production statistics to create so-called intensity measures, e.g. emissions per output (measured in money). Such measures have been much used to show whether an industry has improved its environmental performance relative to its economic value production. This kind of use aligns with mainstream policy focus on efficiency and relative improvement, also allowing comparison between countries or in one country or sector over time. More recently these statistics have also been used by advocates of degrowth, to show that the much promoted decoupling is actually not happening, thereby supporting the argument that green growth is difficult or impossible.

Economic activity related to the environment

Some parts of the environmental flow accounts only cover monetary flows related to the environment, including environmental protection expenditure, environmental taxes and subsidies and environmental industries and green jobs.

Stocks of environmental assets (natural capital accounting)

Some kinds of natural capital were already included in the standard part of the national accounts, but only natural capital with property rights attached to it. The SEEA expanded these accounts to also include, in a single measurement system, information on water, minerals, energy, timber, fish, soil and land.

Expansion of SEEA: Ecosystem Accounts (SEEA-EA)

SEEA Ecosystem Accounting expanded the SEEA to include data on habitats, landscapes and (so-called) ecosystem services. The SEEA-EA consists of five different accounts:

1) ecosystem extent (area)
2) ecosystem condition
3) ecosystem services, flow accounts in physical terms, measuring benefits from ecosystems and the end-use of those services (by economic sector)
4) ecosystem services, flow accounts in monetary terms
5) monetary ecosystem assets

A special feature concerning the SEEA EA, is its spatial foundation. This spatial focus identifies the location of ecosystem assets, the ecosystem services provided, and the location of beneficiaries (households, businesses and governments). Therefore, the EAs are commonly presented using maps, and can hence be useful for the purpose of land-use planning at different geographical scales. Further, the SEEA-EA also expanded the classification of economic sectors, by including nature as a 'producer' of goods and services.

The SEEA-EA incorporates a wider scope of benefits than conventional measures of income and production by including a range of 'ecosystem services'. These services include air filtration, climate regulation, flood mitigation and amenity-related services that are commonly non-market services and hence not explicitly identified or valued in the general national accounts. This introduced the challenging topic of valuation, going beyond actual money transactions, and the need to include theoretically estimated monetary values.

Monetary valuation also produced the most controversy when the the United Nations Statistical Commission (UNSC) was to adopt the expanded SEEA with section on Ecosystem Accounting (EA). In the end, the commission only adopted the chapters which describes the accounting framework and the physical accounts (1-7) as an international statistical standard. The chapters describing the valuation of ecosystem services and assets, were recognised as “internationally recognized statistical principles and recommendations for the valuation of ecosystem services and assets”, but were not adopted as part of the statistical standard (UNSD, 2021).

The «Capital Approach» to Sustainability

Many conventional economists (see for example Asheim 2016; Pearce 1993) came to support stock accounts which became the mainstream economics model for sustainability. This 'capital approach' to sustainability was mainly driven by interest in monetary conversion of nature to achieve commensurability and hence substitutability between different kinds of capital. The approach defines sustainability in the following way in the SEEA manual:

> "Sustainable development is development that ensures non-declining *per capita* national wealth by replacing or conserving the sources of that wealth; that is, stocks of produced, human, social and natural capital." (United Nations, et al. 2003: 4)

The implication is that, as long as we have stable or increasing capital, our future income is secured or 'sustained'.

Various ways to measure sustainability, from this capital approach perspective, have appeared over the years (Arrow et al. 2012, Dasgupta 2021, Hamilton & Clemens 1999). They all build on the insights of the possibility that GDP, which is a measure of flows, grows over time solely as a result of running down the national wealth. They also, to a varying degree, include other kinds of capital (human, social, natural) than the ones included in the national accounts and national wealth measures, and generally argue that GDP be replaced by, or at least complemented by, different measures of economic performance that can indicate long-term sustainability (Stiglitz et al. 2009).

Beyond appealing to the development of new measures of macro-economic performance, those working with the capital approach concept generally recommend policy consisting of reinvesting rents from non-renewable resources (which value the decline in this form of capital) in other forms of capital, to maintain a capital stock of equal value (e.g., Barbier, 2019; Dasgupta, 2021). Although, in theory they recognise that much natural capital is non-substitutable for other capital stocks, this insight is in practice sidelined to be able to calculate change in overall wealth. The sidelining of such a key aspect of human dependence upon nature, and the misunderstanding of how various resources are complementary in production rather than substitutable, have led ecological economists to coin the concept of weak versus strong sustainability. Weak sustainability is the requirement to keep total capital intact over time, while strong sustainability is about keeping natural capital intact over time. The capital approach is criticised for (amongst several things), not making this distinction (Holland [1997] 2009).

Valuation and its many problems

Beyond the substitutability aspects of the capital approach, there are other problematic aspects of the SEEA accounts. A key one is the whole monetary valuation aspect, which covers both the capital accounts and the SEEA-EA flow accounts.

National accounts typically cover only products and services exchanged in the market economy and their related monetary values, i.e. they account for actual flows of money. Where market values are not available (e.g. for public services), the production cost is used. Accounting for ecosystem services and attributing them an estimated monetary value, hence breaks thoroughly with former practices of accounting. The SEEA-EA is particular because both the non-marketed services (flows) and the non-marketed ecosystem (stock) needs to be attributed a monetary value.

When it comes to valuing capital, a few more methods exist, but also here the reliance on existing market-prices is high. In agriculture for example, capital assets like animal stocks or orchards, are valued using current market prices, while the aggregate concept of produced capital is usually based on replacement costs.

The various ways to measure sustainability from a capital approach perspective hence all have the same neo-classical economics underpinnings: that non-declining wealth means non-declining inter-temporal well-being over time. The difference between the approaches lies in the specific methods used to estimate the economic value of the national capital or wealth (hence the approaches are sometimes called national capital accounting or measures of national wealth). The main two methods are 1) estimating the present value of the future flow of benefits from all wealth, and 2) directly estimating the value of the stock of national wealth. The World Bank has used the first one, measuring wealth across manufactured, human, natural and other capitals by calculating the present value of future consumption that will not reduce national wealth (World Bank, 2006), while the United Nations has valued national wealth and its capital stocks directly by estimating physical units of capital and multiplying them by a social price (UNU-IHDP & UNEP, 2014).

Typically, the capital approach to sustainability is praised for its theoretical consistency, although this argument of course only holds if one is convinced of the conceptual framework and explanatory power of neoclassical economics in the first place. The main challenge for those favouring the capital approach is the severe data limitations, particularly for the measurement of biodiversity and ecosystem services. Here the hope is that SEEA and the SEEA-EA will contribute substantively. However, the challenge still remains of how to «fill» the SEEA with the relevant physical and monetary data. This is a huge and costly job, especially the valuation part.

Although a range of creative methods have been developed to be able to price non-marketed goods and services (e.g. willingness to pay, contingent valuation, replacement costs), carrying out surveys or other valuation work should in principle be done for each resource, habitat, species or ecosystem. This is what takes time and is costly. 'Pragmatic' suggestions have therefore been put forth, including to use a 'value-transfer' method, where valuation results from one place is transferred and used in another place, with some adjustments done.

As indicated above, capital accounts are mostly considered useful only from a specific

theoretical point of view. Understanding capital as something that provides an 'automatic' stream of income is an approach based in neoclassical growth theory. Although, Keynesian economists originally opposed to this kind of understanding, cf. the so-called 'Cambridge capital controversy' (Cohen & Harcourt 2003), post-Keynesians and neo-Keynesians do not seem to be concerned about this critique of growth theory any longer. However, both evolutionary economists and Austrian economists, concerned with the creative and entrepreneurial aspects of economic development, are highly critical of it.

Monetary valuation of nature has also been critiqued from a perspective going beyond the capital theory assumptions. Ecological economists have challenged monetary values from a plural values perspective, arguing that placing a monetary value on nature relies on commensurating nature's values in a way that does not hold theoretically, while also bringing in the question of what kind of meaning a price on nature has (see Spash 2008 for a deconstruction of the various aspects of monetary valuation from a plural value perspective).

Despite elaborate critiques, valuing nature or "accounting for nature's values" - now a slogan in itself – is on the rise, and has been promoted through a range of methods and projects in the later years. One of these projects is the initiative called The Economics of Ecosystem Services and Biodiversity initiative (TEEB). This project delivered some confusing messages, on the one hand appealing to a variety of valuation methods, while at the same time heavily promoting both monetary valuation and natural capital accounting based on the SEEA (for a critical review of TEEB, see Smith 2017).

The recent IPBES (2022) report on multiple values of nature, is also confusing in this respect. While on the one hand promoting diverse values beyond purely instrumental values related to nature, the report is in particular promoting monetary valuation of nature beyond the narrow set of values captured in the market. This is simply another way to say what neoclassical economists would express as "internalising the externalities". The authors suggest that the step from 'market values of economic assets' to 'market and non-market values of economic and natural assets' may seem small from the perspective of value plurality. However, they claim, this approach to accounting might challenge the standard application of economic theory, transforming standards for environmental measurement and could hence "pave the way to a more plural accounting of nature-human relations".

A closer reading, however, reveals that this statement is based on understanding SEEA-EA as a project for broadening values because it includes *new categories of nature*. It is the physical accounts (ecosystem extent, ecosystem condition and the physical flows of water and energy) that are seen to represents different values beyond a narrow market exchange view of accounting. Actually, physical accounting or data, are presented as a measure for the intrinsic values of nature.

However, as long as the monetary accounts rely on first establishing the physical accounts, it is a bit of an artificial argument to highlight these accounts as representing intrinsic values of nature.

The IPBES interpretation of SEEA is hence that, from a valuation perspective, the SEEA aims to broaden traditional accounting by adding part of natures' values to an instrument currently inconsiderate of these values. Beyond the use of the SEEA's biophysical data, the future development of pilot and experimental accounts might provide complementary data reflecting additional monetary value perspectives currently not reflected in an accounting context, such as consumer surplus and welfare values, non-use and relational values.

The use of the word 'broad' in this context is quite particular, and one should not be mislead to believe the SEEA allows plural values outside of the instrumental, utility-based framework. Simply adding more bits of nature into the accounting framework or extending the area to which monetary valuation is applied, has nothing to do with being plural. Rather the opposite: it is subsuming an ever larger part of the world under a specific value frame of economic utility. It can be assumed that the effect of making the economic case for environmental protection will simply strengthen the specific kind of values being appealed to.

The Nature that Capital can See

We must also consider the broader cultural or economic consequences (intended and unintended) beyond the immediate use of the statistics for planning and steering purposes. When it comes to SEEA-EA, the concepts included will surely contribute to the ongoing discursive change in the way we talk about and hence relate to nature. Nature has for some time already been referred to using economic language, a shift which has been particularly successful amongst policy makers. Nature has been turned into capital (i.e. natural capital) and ecosystems into service providers (ecosystem services). As we have seen, both are central concepts in the SEEA-EA.

Although the term natural capital was used already in the first SEEA handbook from 2003, there is still a substantive difference between calling marketed nature, like a forest or fossil fuel reserves, 'natural capital', and calling *all* nature 'natural capital'. All of nature is now to be considered within the utilitarian framing, constituting what we shall live from in the future, and what shall provide jobs, well-being or economic growth and development.

As Michel Foucault (1961) was the first to theorise, statistics and statistical categories are not just about describing reality, but can also be used to judge and control. However, coercion also happens through individual internalisation of specific ways of classifying and counting - or specific ways of 'seeing'. The SEEA-EA core concepts of natural capital and ecosystem services have a range of consequences, including how we perceive the world and specific phenomena in it. The way we categorise objects to be able to measure them, starts impacting on how we see nature, for

example as a sink for pollution which must be ‘filled up’ or as the biggest economic service sector! This is how indirect coercion or exercise of power through hegemonic categories and numbers work. Hence, measurement systems are not innocent, but rather power laden.

Inspired by Foucault, political ecologists have demonstrated that measurement practices can have substantive impact also on the physical world, on the natural landscape (Scott 1998), a phenomenon also theorised under the concept of ecogovernmentality. It is to be expected that ecosystem services accounting will add to this kind of experience.

This new way of perceiving of nature, might also facilitate markets and business opportunities. Although these natural processes do not have property rights attached to them, and therefore might seem to have little commercial potential, things are changing. To borrow from Robertson (2006), this is about 'the nature that capital can see'. Estimations of economic value, has released a lot of creativity in terms of how this value can be captured, especially through financial instruments. In terms of common pool natural resources, tradable fishing quotas have been around in many countries for a long time. The US has championed biodiversity banking where a company can buy various credits (species, wetlands) to compensate for nature destroyed through infrastructure or other building projects. We have also been acquainted to words like carbon credits which actually means a right to pollute a certain amount. But the creativity in terms of tradable right to the use of nature's sinks might have no end. We might all have made the joked that one day we will have to pay for the air that we breathe. Well, it might not be that far. The London Group, an informal group of experts and practitioners on environmental accounting, is now exploring the potential inclusion of the atmosphere as an asset into the SEEA.

The Political Economy of SEEA

So far, I have suggested that the effect of monetary valuation of nature and of “making the economic case” for environmental protection first and foremost will strengthen the specific values that is appealed to, which in turn might support the further commodification nature. However, it is also worth looking beyond the critique of monetary valuation of nature, and study the role of SEEA within the larger political economy.

We can understand more clearly how the SEEA and the national accounts underpins a particular political economy, through Alain Desrosières' analytical framework. Desrosières (2008) challenges the image of the rational state prevalent since Max Weber, which include standardisation and anonymisation of the social world, development of bureaucracy and the increasing role of experts. In the Weberian account, rationality is something coming from the outside and contributing to progress, and science/statistics is seen as a linear and cumulative process. Desrosières challenges these assumptions, and shows that the history of the tools for rationality, in terms of ways to think

of society and politics, has been tumultuous and non-linear. There is not just one given development of statistics as 'a natural evolution' of scientific description of the world, a technical thing living its own life. The numbers have been developed in close connection to the given state rationality at each point in time. From this perspective, Desrosières looks at how statistics perform 'the society' in various configurations. To do this he studies the relationship between the statistical tool, the types of arguments and the nature of the problem. He then demonstrates how, historically, numbers have not played only one, but several and different roles depending on the societal and political organisations of their time.

The purpose of this exercise is to show how the kind of statistics (or 'knowledge') considered useful for the state changes over time. Because statistics is both a tool for evidence and a tool for steering, the two aspects should be examined in combination. From this undertaking, Desrosières compiled a stylised division of five historical types of states: the physiocrats/engineering state, the liberal state, the welfare/social state, the Keynesian state and the neoliberal state.

Each type is characterised by i) specific ideals and values or different ways of thinking about society and the economy, including the relationship between state and market; ii) different modes of action and policy; and iii) production of different types of statistics that fitted the needs of these various concerns of society, the related policies, and the modes of action of the state. Desrosières (2000) argues that statistics are not 'given' as an objective representation of reality that evolves independently of social and political circumstances, but rather is something to study and problematise in relation to the political economy.

Desrosières' scheme of various kinds of state regimes can be usefully combined with a French regulation theory understanding of the capitalist economy. Regulation theory is concerned with how various stages of capitalism, with its specific accumulation regimes, are being stabilised by specific institutions and public policies.

The basic assumption of regulation theory, distancing it from neoclassical theory, is 'that capitalism is not a self-equilibrating process, but requires intermediation from external structures' (Petit in Durand and Légé 2013). The intermediation happens through 'modes of regulation', i.e. the set of institutional laws, norms, forms of state, policy paradigms, and other practices that provide the context for the operation of the accumulation regime. Generally speaking, the modes of regulation support the accumulation regimes by providing a conducive and supportive environment, in which the accumulation regime is given guidelines that it should follow. Social compromise is needed to secure growth and accumulation. The main focus is therefore on the regulation of capital accumulation through economic and political procedures as they change to secure the reproduction of capital in successive stages of capitalism (Jessop 1990).

How can we interpret the SEEA with the help of the insights from Desrosières and regulation

theory?

Regulation theorists have in particular tempted to provide explanations of the various periods and crises in capitalism, starting with the crisis in Fordism and the Keynesian welfare states in the 1970s and studying the various attempts at establishing new growth economies since then (i.e. the knowledge economy, the IT-economy). The apparatus for producing statistics and numbers that feed into the state steering system, can then be understood as part of the mode of regulation (part of the institutions) that aims stabilise each accumulation regime for a certain period.

Let us first remember that the national accounts were set up in the post-war era when Keynesian politics were dominant. The Keynesian state did not question the market economy, but rather intervened in the macroeconomic structure which had been made into a manageable object through the national accounts. Of particular importance was the possibility of following the development in aggregate demand. The importance of GDP only came in at a later stage (see Schmeltzer 2016).

During the neoliberal era the general policy shift from regulation to economic incentives was particularly evident in the environmental domain. This change was underpinned by the dominance of neoclassical economic theory and its focus on efficiency and market-based solutions, and led to the development of a range of new financial instruments and the broader phenomenon known as 'financialisation of nature' (Smith 2022). Another characteristic of public policy in the neoliberal era was the introduction of new public management with its extensive measurement regime. In terms of statistics, and linked to the SEEA in particular, this manifests in a range of relative measures allowing for benchmarking, including pollution intensity measures like emission per unit of GDP or per capita, or economic measures like environmental taxes as a percentage of total taxes paid. In practical terms, this meant that publicised statistics drew much intention to performance and «who is best?» rather than to whether the environmental problems had actually been solved or the situation improved.

In the current times, when growth is not secured and new imaginaries of green growth are being suggested and promoted (Sum and Jessop 2013), one must ask: what kind of numbers or statistics is of relevance? It seems quite clear that especially the monetary parts of SEEA and the ecosystem service extensions, can be seen as part of the transition to a period focused on green growth and green economy (i.e. “green capitalism”). It is hard to find any political strategy currently, at least in the Western world, that has not turned the environmental crisis into a new opportunity for growth. The EU Green Deal (heavily promoting valuation of biodiversity) is a showcase in this respect. These attempts at continuing the growth economy, by trying to green it, can get much help from the SEEA, while it is not so clear what the usefulness of those accounts are, beyond serving as simple proof of nature being downgraded.

Conclusion: Resisting or making use of SEEA?

That things and people can be acted upon and governed on a large scale by virtue of statistical aggregates is today often taken for granted, although the history of statistics shows that this was not always the case. Historically, the realism and meaning of statistical aggregates have been the object of fierce disputes. Statistical categories have been challenged and sceptics have argued that the 'homogenization of infinitely diverse units' fail to do them justice or produce misleading insights (Desrosières 1998).

However, resisting the development of a whole statistical system that underpins certain aggregate measures is a larger task. It is maybe harder in today's world to follow statistical processes and resist when necessary. These are large processes with a mass of underlying documentation to read through. The SEEA-EA disagreements shows this clearly. Looking into the documentation on the SEEA-EA consultation, it is clear that small, critical NGOs have not had the capacity to give any feedback, while the large market-aligned NGOs or coalitions (like IUCN, Conservation International and the Capital Coalition) have.

The statisticians themselves have the tendency to always present the issues as being of a purely technical character. That a number of countries voiced concerns about including monetary valuation as part of the standard (UN CEEA, 2021) was dealt with as a purely methodological question. The decision adopted, therefore includes a request to promptly resolve the outstanding methodological aspects in chapters 8-11 as identified in the research agenda. This happened despite some of the objections from statistical office experts being of a principled scientific character.

Such practice is unfortunately widespread, hiding that there are also political sides to an accounting framework, and that attributing a monetary value to the parts of nature that are not traded or tradeable in a market is a highly controversial and value-laden undertaking. However, claiming that statistics are aligned with certain political interests or values is a taboo, a minefield, making it difficult for those practitioners who are aware of this, to raise the issue.

The recent IPBES (2022) Assessment Report on the Diverse Values and Valuation of Nature, despite some very critical chapters/passages, have unfortunately perpetuated this limited perspective of what the conflicts around monetary valuation of nature are really about. To their credit, the authors of chapter 4 have at least included that the debates around valuation reflects tensions between intrinsic and anthropocentric conservation motives. But that is as far as the authors go. The rest of the resistance to valuation is explained this way: "valuation is still often mistrusted or misunderstood by policymakers"; it comes from "resistance to the concept of non-use values"; or is due to "unfamiliarity with the tools and methods of valuation".

The question is then, to which extent can the SEEA be used for different purposes and within different socio-economic logics than the one(s) within which it was developed? What about

physical accounts – are they innocent?

Physical accounts can definitely provide useful information about the state of the environment and ecosystems, and of change, i.e. disappearance and degradation of nature. Desrosières have demonstrated how, at the end of the 18th century, statistics had a function as 'evidence' of the misery of the urban, industrial working class. This 'evidence' led to the protection of workers through for example regulation of the labour market. In this way, numbers had the exact opposite function of what is happening today in the environmental sphere, where instead of more strict regulation to protect nature, regulations are in general removed and instead converted into economic incentives or financial instruments.

Nature needs the same as the workers did: instead of increasing commodification, what is needed is stricter regulation. And although physical accounts could provide evidence, we already know a lot about the state of affairs and what needs to change. For example, we know that we are in a nature crisis (IPBES 2019), and that we need to act now. We don't need more data to know that. Given that SEEA is expansive and time-consuming to set up, it seems more rational to act from the knowledge we already have. And we do already know much, e.g. about what are sustainable practices and what are not. We could transform economic sectors without the need to wait 10 years for SEEA to be established first. We could for example redirect agricultural subsidies to small-scale, low carbon-intensive, labour-intensive farms that do organic, regenerative agriculture. We know which sectors are the big emitters of CO_2, hence we can phase out fossil fuels. We know that also renewable energy production impacts on nature, hence we must prioritise energy saving and energy reduction, at least in Europe.

We know what we have to do – i.e. reduce environmental pressure and protect nature and natural ecosystems. In that respect, establishing huge and detailed statistical accounting systems at this point in history, must be considered a deviation from the need to act.

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