Co-Designing a new and better Global Systems Accounting

FOCUS AREA : POLLUTION

Laurent drafted a summary on the miro board:

https://miro.com/app/board/uXjVOKwgGb0=/?moveToWidget=3458764520625938586&cot=14

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Useful Articles

Your Name (Optional)	URL Link to Article / Book	Comments
Philippe Gerling	https://www.cnbc.com/2022/01/29/how-the-fossil-fuel-industry-is-pushing-plastics-on-the-world-.html	“Every company who is currently engaged in producing plastic, if you look at their capital budgets for the next two to three years, they’re all talking about expansion plans,” said Ramesh Ramachandran, CEO of No Plastic Waste, an initiative from the Minderoo Foundation that’s working to create a market-based approach to a circular plastics economy. Yet much of the developed world is already awash in plastics. So fossil fuel and petrochemical companies are relying on emerging economies in Asia and Africa to drive growth.
Philippe Gerling	https://www.lemonde.fr/le-monde-in-english/article/2022/02/16/poisoned-farmers-exposing-the-myth-of-pesticide-protection_6113871_5026681.html	The concept of a "safe use" of pesticides, similar to that claimed in the past by asbestos manufacturers to keep selling their deadly

		fibers, is pure "fiction." These are the striking terms used by the sociologist Jean-Noël Jouzel, director of research at the French National Centre for Scientific Research CNRS. "In theory, everything is put on the market with the idea that, when used in the conditions prescribed on the product label, pesticides will not cause undesirable effects," the researcher explains. "But in reality, things don't work out the way they look on the label."
Philippe Gerling	https://youtu.be/KfX0tTrSRG0	
Yves Werling	https://biv.com/article/2018/01/calculating-real-environmental-costs-electric-vehicles https://usa.streetsblog.org/2021/02/09/lithium-mining-and-the-hidden-environmental-costs-of-evs/	On the hidden environmental impact of electric vehicles, though lower carbon emissions the mining and electronic waste have a negative impact
Yves Werling	Pure Earth	The Blacksmith Institute used to publish a list of most polluted places, its new site can be a good source of inspiration for indicators
Philippe Gerling	https://www.bic.org/statements/heart-resilience-climate-crisis-catalyst-culture-equality	Amidst mounting climate risks, it is becoming clearer how much humanity benefits when women's leadership is embraced and promoted at every level of society, whether in the family, community, local government, corporation, or nation. Qualities of leadership typically associated with the masculine—assertiveness and competitiveness, for example—have proven limited when not tempered by those typically associated with the feminine, such as an inclination toward collaboration and inclusion,

		and a disposition toward care and selflessness.
Tamara Blagojevic	https://acontrarioicl.com/2021/10/11/aligning-the-stars-sustainable-development-and-space-justice/	The framework norm of sustainability can be used as an umbrella governing its 3 pillars toward finding the appropriate balance of the social, economic and environmental factors. Only by considering all in advance, and through preventive mechanisms and precaution can we ever achieve a good balance and have better predictions.
Philippe Gerling	https://www.latimes.com/world-nation/story/2022-02-23/methane-emissions-higher-than-countries-claim-iaea	Methane emissions are far higher than what countries claim, world energy agency says
Jan de Jongh	Lassaletta-et-al.-2014.Trade-diet-and-N-cycle-in-Spain.61-09.REC_ The amount of N, in various forms, like NH3 (Ammonia?) from cattle manure, NOx from combustion engines affects health, food, pollution, climate change, etc. It contributes to pollution of air, (giving health effects) pollution of water , and N deposited in earth produces laughing gas, which is a very strong greenhouse gas. Spain is a typical example how diet change, from the well known healthy mediterranean diet to meat, deteriorated land, water and air. Nitrogen N, can be used as a n important indicator.	During the last 50 years, a significant change in the N cycle of Spain has occurred, with a threefold increase in NANI from 526 Gg N year-1 in the 1961–1965 period to 1673 Gg N year-1 in the most recent years (2005–2009). Food and feed import now accounts for ca. 40 % of the total NANI compared to 10 % in the early 1960s. In particular, it should be noted that nowadays imported agricultural products equal the total N production of domestic Spanish crops. The main part of the N import corresponds to soybean feed products, mainly originating from Brazil and Argentina. The Spanish N cycle is currently mostly driven by livestock

		production, 80 % of which is consumed domestically. The increase in population per capita protein consumption and the share of animal protein in the diet that have occurred over the last five decades are therefore the main factors responsible for the changes observed.
Rebecca Teclemariam	https://op.europa.eu/en/publication-detail/-/publication/f235d1e3-7c4d-11e9-9f05-01aa75ed71a1/language-en/format-PDF/source-108645429	Environmental and health risks of microplastic pollution
Tamara Blagojevic	https://nwsidebar.wsba.org/2020/11/30/lessons-from-earth-to-outer-space-space-law-elon-musk-and-the-future-of-mars/	With new actors from the private sectors in the space competition, and in the light of the lack of proper and explicit rules guiding their conduct, we pave a way to give priority to the economic pillar of the sustainable development principle, and outer space, which is already congested with space debris, to become the wild west. We pave a way to a repetition of mistakes which lead to a climate catastrophe on Earth.

Laurent Mesbah	The Basel Convention: Transboundary movement of hazardous wastes: http://www.basel.int/ The Stockholm convention on persistent organic pollutants http://www.pops.int/ The EU nitrate directive https://ec.europa.eu/environment/water/water-nitrates/index_en.html The convention on long range air pollutants https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-1&chapter=27&clang=_en And https://www.bmuv.de/en/topics/air-noise-mobility/air/the-convention-on-long-range-transboundary-air-pollution https://unitar.org/sustainable-development-goals/planet/our-portfolio/basel-rotterdam-stockholm-conventions The Bamako Convention https://www.unep.org/explore-topics/environmental-rights-and-governance/what-we-do/meeting-international-environmental The Rotterdam Convention on Prior Informed Consent http://www.pic.int/TheConvention/Overview A future convention on plastics https://www.unep.org/news-and-stories/story/unep-head-responds-questions-global-plastics-agreement	I put here the links to some of the relevant conventions and other legislation related to waste and pollution

	https://www.nbcnews.com/science/environment/175-countries-agree-first-kind-plastic-waste-treaty-rcna18517 https://www.nytimes.com/2022/03/02/climate/global-plastics-recycling-treaty.html https://ec.europa.eu/environment/topics/plastics/microplastics_en#:~:text=There%20is%20currently%20no%20single,of%20microplastics%20in%20the%20environment. The Montreal Protocol on CFC to prevent ozone depletion https://en.wikipedia.org/wiki/Montreal_Protocol The UN Framework Convention on Climate Change in relation to the emission of greenhouse gases https://unfccc.int/	
Tamara Blagojevic	PDF all environmental conventions with explanation/description of content and goals https://byjusexamprep.com/liveData/f/2019/5/environmental-conventions-and-protocols-notes-pdf-in-english-72.pdf https://iea.uoregon.edu https://ec.europa.eu/environment/international_issues/agreements_en.htm	
Tamara Blagojevic	Green Crimes and International Criminal Law book https://vernonpress.com/book/1139	

	12% discount code: **FLYPR12** **I think this one is better - family discount :D : CFC51500BAA1**	
Rebecca Teclemariam	Bioplastics for a circular economy https://www.nature.com/articles/s41578-021-00407-8	
Christine	https://ethical.net/politics/gdp-alternatives-7-ways-to-measure-countries-wealth/	Darren shared this link at our 4/1/22 meeting.
Rebecca	https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(22)00090-0/fulltext	Pollution of air, water and soil is directly responsible for 9 million premature deaths every year.

Questions and Ideas

Your Name (Optional)	Questions / Ideas	Comments
	Consider the whole supply chain of a product, from the basic minerals used to the end of life and recycling or discarding	
	Need to enforce the same standard of laws at the international level	

Philippe Gerling	https://www.festival.cam.ac.uk/events/climate-change-global-pollution-biodiversity-can-we-turn-corner	To overcome our environmental crises, we need to rethink our human purpose, our economy and our systems of governance, with young people in the lead. Find out more about this important topic during a talk by Dr Arthur Dahl, who studied at Stanford University, worked as a senior official of UNEP (United Nations Environment Programme), was involved in drafting Agenda 21 for the Rio Earth Summit and coordinated UN Earthwatch. He is also president of the Bahá?í-inspired International Environment Forum.
Philippe Gerling	https://www.theguardian.com/world/2022/mar/17/kenya-quiet-slide-underwater-great-rift-valley-lakes-east-africa-flooding	Only when the UN Environment Program published its own report about Lake Turkana in July 2021, and the prospect of foreign aid became more likely, did Kenya's politicians really become interested. A number of people I spoke to were angry at the apparent insinuation that help was meant to come from the international community, rather than from the Kenyan government itself. The government, Okeyo had told me in his office in Marigat, did not care about the plight of minority communities such as those who live around Lake Baringo.
Alice Baldwin-Jones	CONFRONTING OCEAN PLASTIC POLLUTION https://www.pewtrusts.org/en/trust/archive/fall-2020/c	

	onfronting-ocean-plastic-pollution The world's plastic pollution crisis explained https://www.nationalgeographic.com/environment/article/plastic-pollution	
Philippe Gerling	https://www.dw.com/en/activists-slam-europe-for-dumping-on-africa/a-61315412	Africa's is already experiencing the drastic effects of climate change and with most countries becoming a dumpsite for Europe, analysts fear it would not be able to meet its targets. "You cannot have a clean environment when you are accepting waste to be dumped in your environment so clearly those targets of cleanliness cannot be met," Bassey said.
Christine	Delivering a toxic-free environment under REACH - Eight key NGO demands to improve the REACH Regulation https://eeb.org/wp-content/uploads/2022/04/NGO-key-demands-to-improve-REACH-April-2022-2.pdf	This is an excellent resource. It provides good language for meaningful standards such as: The chemicals **industry must bear the burden of proof** to demonstrate that their chemicals are safe and be held accountable for the safety of the chemicals throughout their life cycle;

Spreading the Idea

What groups or conversations where you can introduce this idea?

Your Name (Optional)	Groups	Conversations
Tamara Blagojevic	Instagram, Facebook, space-legal community, Linked In, Twitter (much smaller group of followers)	

Section on this theme in the discussion paper by Arthur Dahl updated 26 January 2022

Pollution accounts

A pollution budget system would consider a clean environment as capital to be maintained, with no wastes accumulating in nature and diminishing its future, and no chemical threats to human health or ecosystems. All releases of pollution and discarding of wastes would increase debt. The environment has some capacity to clean itself of some pollutants, as a kind of wealth generation, but persistent pollutants are becoming an enormous debt burden on the future that is not presently accounted for. The quantification of pollution debts would permit the implementation of the polluter pays principle, with the damage to health and the environment from pollution no longer an externality to be ignored, but quantified and attributed to sources.

The accounts would need to distinguish pollution in different components of the environment. Air pollution is both highly mobile, spreading chemicals around the world and depositing them far from the place of origin, and concentrating human health impacts as in urban air pollution, where, for example, nitrogen dioxide from diesel exhaust causes high levels of childhood asthma. Water pollution has significant environmental effects and can contaminate human water supplies and groundwater. Pollutants in soils can be very persistent and affect agriculture. The ocean is the ultimate sink for many pollutants, and the quantities of pollutants and plastics now accumulating in the seas are having significant large-scale impacts.

The challenge in designing an accounting system for pollution and waste is the complexity of all the substances involved and the lack of good data on many of them. We must simplify to come up with an accounting system that will be capable of signalling the main problems and risks for decision-makers and the public. This would mean selecting just a few key "indicator" pollutants that would tell the story for all the others. Initially, accounts could be developed for some of the main pollutants already well known and identified in international conventions, such as Persistent Organic Pollutants and mercury. Fixed nitrogen would be another possibility because of the high human contribution to nitrogen fixation exceeding the planetary boundary. Another possibility is a widely used antibiotic or other pharmaceutical escaping into the environment that could represent that category and is perhaps already monitored.

Global waste is predicted to grow by 70% by mid-century, so it would be necessary to select a few waste streams predicted to grow the fastest, and to relate them to the capacity for their management and treatment. The focus could be on those most likely to cause harm to human health and the environment. Plastics are at the top of the agenda, but a clear definition is needed. Electrical and electronic waste, including digital devices, are another important category with many toxic components. Used lead-acid batteries represent another high volume of waste with toxic lead. The waste streams for these are well documented, the elements are well studied through their life cycle and can be recovered, recycled and reused. Among other wastes, cement might be used as an indicator both of the greenhouse gas impact of its production and its disposal as construction waste.

It would be necessary to start with a minimum set of pollutants and wastes that would characterise the main global human health and environmental impacts, probably not more than ten. The recent scientific announcement that the planetary boundary for the release of novel chemicals and other pollutants has now been exceeded, with measurable planetary consequences, increases the urgency of this form of accounting. There are calls for a global convention on pollution and an intergovernmental science-policy process to assess and report on pollution as a support for international action, such as already exist for climate change and biodiversity.The second challenge is conceiving of an accounting system using the full cycle of these elements or compounds as the accounting currency, from their sources through chemical transformations and uses to becoming pollutants and wastes, and hopefully being recycled or neutralised to complete the accounting circle. This makes it possible to go beyond just the negative view of pollutants to the positive view of useful materials and products, so that the negative accounting of damages can be balanced by encouraging the positive services these elements/materials can render, or their replacement by less damaging alternatives, and ultimately their circular use, rather than linear use and discard. Taxes on releases could go to finance cleanup measures, while creating a negative incentive for further production. For example, there could be a tax on nitrogen fertiliser production, and perhaps on its use in industrial-scale agriculture, to reflect its environmental costs to the global commons.

Once the pollution accounting systems are designed with relevant "currencies" that can be measured and monitored, the next step would be to develop the spatial dimension of their distribution and the dynamics of changes over time, since the impacts are ultimately seen at the local level. One could imagine an animated global map of one indicator pollutant, showing where it is manufactured, incorporated into products, traded around the world, used, and released or discarded. That would show where the responsible parties and victims are. It could also identify who the corporate actors are that profit from this, and the consumer demand that drives the market. Such an accounting system would work as a step towards overcoming the power of the present economic and corporate system that ignores environmental and health costs.

Some notes from the 2-19-2022 Meeting

- One of our tasks is to think about key pollutants in our air, water, and soil and how they could be used as indicators of overall chemical pollution. (See chart below)
- Ideally these data could be used to draw dynamic maps that illustrate the story of pollution - where a chemical originated and where it traveled and ended up, and what its harmful effects are in all these stages.
- Importance of an international accounting system
- Vulnerable people, often people of color, are more exposed to toxic chemicals. We need to account for that, perhaps with the choice of the chemical pollutant indicator.

- The importance of a circular economy: How could this be accounted for?
- Are there watchdog organizations that monitor chemical pollution?

Chemical	**Its origins and where it goes**	**Its harmful effects**	**Is it already monitored, if yes, by whom?**	**Resources and information**	**Possible non pollutant alternatives**
Mercury				https://us02web.zoom.us/j/85734920936?pwd=bmtDcTVWUHRDekxPbUk4NFlrb2ZoUT09	
Lead					
Glyphosate					
Microplastics	the UNEP reports that only 9% of all plastic is recycled and just 12% is incinerated	remaining plastic has polluted the environment or can be found in dumps and landfills Uncertainty about effects.		On-going consultation for EU initiative: https://ec.europa.eu/environment/topics/plastics/microplastics_en	
Medical waste					
PFAs					
Antibiotics					

Nitrates	Nitrates are present in nature, as part of the Nitrogen cycle, but to much is added in the soil and water due to the use of chemical fertilizers and wastes from attentive meat production.	The excess of nitrates goes to waste water, underground waters, rivers, lakes and the ocean. It results then in over growth of mosses and algae, which in turn prevent light and oxygen and other forms of life	Monitoring of nitrate is done at the local and national level in many countries.	https://ec.europa.eu/environment/water/water-nitrates/index_en.html https://hess.copernicus.org/preprints/hess-2019-198/hess-2019-198.pdf	
Phosphorus					
Nitrogen					

NOTES FROM MONDAY 7 MARCH MEETING

- Identify the most significant global pollutants- find out what is the science behind - How can we develop a scientific assessment system - who is responsible? States? Corporations?

- Alice will look into antibiotics in the food chain and in food production, and microplastics in Fish
  Tamara will explore how space law could be a blueprint for going towards a global pollution law where not only states but private corporations could be held accountable for damage to the environment
  Rebecca will look at plastic waste
  Laurent will look at phosphorus/nitrogen pollution from agricultural activities

- For most pollutants one needs to apply the precautionary principle

- See whether there are alternative solutions

NEXT STEPS (written by Tamara)
Current stage of the groups work progress and development - initial stages:

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- Divide group into areas of expertise and practice

List of current members below:

Laurent : agricultural inputs spillage
Rebecca: plastics
Alice: antibiotics and plastics in Fish
products
Philippe:
Christine:
Yves
Tamara: global commons, legal regime, applicable
laws and principles, main focus - outer space, environment, pollution
David

potentially adding more members soon, currently raising awareness and assessing potential interest and focus groups.

Missing/looking for:
finance/accounting/economic experts - search ongoing, some potential individuals
found and approached

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- Assign research tasks see above. Those who have not chosen a focus area can add it in the list

    - Plan monthly meetings - ongoing, planning frequency of brainstorming and progress sharing sessions.

A few additional meetings might be necessary for idea clarification and forming a uniform decision among sub-groups, upon each doing more thorough research and exchanging information - suggestion about 3-4 meetings in March/April.

A monthly meeting for the whole group.

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- Generate ideas on the initial path the research will take, exchange, and discuss initial proposals, suggestions and ideas: ongoing

This will need a few additional meetings to re-address if anything changed and if group members have any new findings of facts or new knowledge. Discussions should take place and ideas to be considered with unified votes.

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- Have research results, idea implementation proposals, discussion on appropriateness and viability of proposed results and potential solutions Potential end product - notes, reports - generating ideas – Arthur shared some possible avenues for sharing our results.

Examples of the proposal of the initial path and stages of the group research:

1. Define and compare common goods and list their characteristics
2. Multidisciplinary approach to take place by combining various areas expertise of different people - sharing ideas and bringing mutually acceptable decisions.
3. Sustainability to be used as guidance between three pillars: social,

economic, environmental - all suggestions to take into account all three pillars and reconcile them in results.
4. List and compare main environmental conventions on pollutants
5. Find common basic principles and propose their future development or redefining

6. Suggest measures and means to/ for: adaptation, transition, implementation

Some initial ideas how to approach accounting for pollution after our April 1 meeting
The Ideal State: A Clean Environment

	Negative Indicators: State of pollution, Increasing pollution	**Positive Indicators: Reducing and eliminating pollution**	**Positive Indicators: Cleaning up pollution**
Production (Manufacturing, agriculture, industry etc.)	- State of pollution Measurements of chemicals in water, air, and soil - Quantity of ongoing pollution - The commons (water, air, soil) can be polluted without consequences	- Laws and regulations that prohibit pollution - Cost of clean-up goes to polluter - Full cycle production	- Companies are required by law to clean-up pollution - Government-sponsored clean-up that would fairly employ people
Usage (Consumption)	Manipulating and seducing advertisements	- Moderation in consumption - Abandonment of fashion, especially fast fashion, - Scientific and spiritual education regarding responsible use of resources - Responsible information about products to consumers that also includes their life expectancy, environmental impact and social responsibility	Re-usage of materials
Waste	- Size of landfills - Amount of pollution caused by incinerators - Amount of waste in the environment - Export of toxic electronics and plastics to lower income	Up-cycling: reusing raw materials after a product's life Recycling	Systematic efforts to clean up pollution at the local/regional level worldwide, supported by national governments and an international environment agency

	countries		

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Breakout groups during the EBBF annual conference in Lisbon 13 and 14 May 2020

The benefits of NOT polluting have been discussed. How to formalize this? How can you reward not doing something harmful? At the local, national and international level. Taxes, incentives, and rewards should be formalized at all these levels.

For countries where national governments are not protecting their citizens from polluting industries or even benefitting from them, another group suggested establishing an international corruption court to which citizens or groups of citizens could appeal to.

How to make the price of pollution more visible? Once this accounting is made, it should be visible on the price of goods, on the bills we get, so that the consumers could make a more informed choice.

How can accounting be used to make decisions? Where to give priorities? Environmental accounting should be included in the

Reminder: the goal of these working groups is to change the mentality of dependency on dogma of wealth building - make the virtues behind true wealth and happiness more visible- make clearer the materialism and nullacy of the "Western" mode of life.

POLLUTION GROUP MEETING 17 MAY 2020

With Arthur, Christine, Tamara, Sharareh, Laurent and Rebecca

It is important that we find a way to make the issue of pollution accounting simple enough for everyone to understand it and even become an active part in the monitoring process. At this moment the number of pollutants is too high so we can choose the ones that are easier to identify, monitor (and by the local population) and follow. Which cimple instruments/mechanisms could be devised for this?

Key pollutants identified would help signal a direction, create a motivation for change, encourage efforts.

Polluter pays means for example having task forces of “forensic examination” of pollution sources in order to find the polluter responsible. This can be applied in tourism for example where tourists would need to pay for cleaning of water pollution, etc..

We need to map what is already being done around the world.

Christine suggested a “solidarity index” which would help qualify initiatives according to the benefit they have on humans and vulnerable groups in particular and this instrument could help make decisions by choosing those with the highest solidarity index.

The upcoming Stokholm 50+ event organized by IEF will help bring attention to the ideas developed by the different working groups. By making them mainstream, we can contribute to the change in mentality.