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## EDITORIAL PARTICIPATION AND OWNERSHIP

BY TONE SMITH, ESEE NEWSLETTER EDITOR

Means of communication have changed quite a bit during the 25 years that have passed since the first ESEE newsletter was published. Today, our website and social media seems more appropriate than a quarterly newsletter for disseminating certain kinds of information, for example about events or job openings. However, feedback from the membership survey (2019) shows that there is a need for an interactive arena for ecological economists. After a difficult period during the pandemic, we are now re-launching the newsletter in a new format with a broader variety of text columns. The aim is to achieve more interaction and mutual reflection amongst the membership, i.e., to be more participative, while also strengthening the sense of ownership within the ESEE.

Besides our well established column called «student spotlight», we are adding a new one spotlighting ESEE countries. This is another idea inspired by the membership survey, where many expressed a wish to learn more about what is actually going on in Europe. Given that we are meeting in Pisa, what is more appropriate than starting by presenting ecological economics in Italy?

In this newsletter you will also find a call for shorter commentaries or reflections. Not a new feature, because the first newsletter (back in 1997) also invited these! Looking back can teach us that while we want to be innovative, open up for new ideas and young voices, there is much to (re)learn from the past and we should make use of all that work that has been done by those before us, rather than continuously reinventing the wheel. We are therefore introducing a new column called «From the archives», where we start by reprinting a text from the very first newsletter by pioneering ecological economist Juan Martinez-Alier. This is a short and funny piece which can hopefully inspire more discussion on a key question in the Society, about what is ecological economics and what should it be. Martinez-Alier suggests the following definition: «the study of the

(un)sustainability of the economy». It seems to me that we agree more on the critique—what is unsustainable about the economy—than on the alternatives—what a sustainable economy could be and how do we create it. In this respect, time has come to focus on the latter.

Some people think ecological economics is about valuing ecosystem services in monetary terms. That is, if they have heard of ecological economics at all. My impression is however, that this is about to change. Fortunately, ecological economics as a radical, critical paradigm is increasingly known and sparking interest. New movements, and strands within existing NGOs and political parties, are in search of alternative models and explanations that can help guide policy and politics in a different, transformative direction. And as the ESEE General Meeting in Turku (2019) showed, there is increasing recognition that we need to (dare to) be political. Many of the topics ecological economists work on, like institutional change, needs, values, or systems change are political by their very nature. Still, it is not obvious in which direction to take this political engagement. The newsletter will aim to provide a forum for discussion on the issue. [\(Continued on page 2\)](#)

# Newsletter

JUNE 2022

# A SHORT JOURNEY OF A FEW ECOLOGICAL ECONOMISTS IN THE JAGGED ITALIAN LANDSCAPE

Ecological economics is catching on in Italy but there's still lots to do



Photo: Ruben Hanssen

BY EMANUELE LEONARDI, TOMMASO LUZZATI AND TIZIANO DISTEFANO

Assessing the state of the art of Ecological Economics (EE) in Italy is no simple task. Quite honestly, we can say that EE has never become popular, as demonstrated by the lack of attention to sustainability issues in Italian academia. In the syllabus of the current research panels—the reference for entering Italian universities—the term “sustainable\*” (hence including both “sustainable” and “sustainability”) occurs 20 times out of roughly 36.000 words (see [http://attiministeriali.miur.it/media/174801/allegato%20b\\_def.pdf](http://attiministeriali.miur.it/media/174801/allegato%20b_def.pdf)), mainly in agricultural and engineering studies.

Perhaps because of the strong Italian concern for unemployment and related social issues, a considerable number of economists is used to seeing the environment as a luxury good, while the ecological crisis is often understood only in terms of externalities that could be

internalised by monetary compensation (e.g., via higher prices). Often, environmental problems are presented as *aut aut* options, that is, one must choose either to save jobs or to reduce pollution.

Yet, one cannot say that heterodox schools have been weak in Italy: above all the Sraffian school, but also the interest generated by the Georgescu-Roegen's production theory. However, the lack of a systemic view concerning the inter-linkages between environmental degradation and social justice seems dominant so far, leading to policy proposals that deal with one issue at a time, neglecting the complex relations among the economic, ecological, and social spheres.

Things have started to change thanks to the increasing impact factor of the journal *Ecological Economics*. At first, Italian economists gave it low academic rankings, dismissing it for being a journal that does not really belong to economics. Today, despite

some diffidences, it is more appreciated, with a positive spill-over effect on the judgement of EE as a discipline. Yet, the “publish or perish” mantra forces high specialisation and narrow views, which hampers a true acceptance of ecological economics. This situation also hampers the possibility to address the increasing complexity we are facing, which calls for interdisciplinary research. Perhaps, a contribution to the diffusion of EE in Italy could be to define it more neatly, and to communicate its key ideas in keeping with the times.

If we narrow the lens, we can say that the University of Pisa is at the forefront of the diffusion of EE principles and ideas in Italy. There are several interdisciplinary research teams—composed of economists, sociologists, philosophers, and engineers, amongst others—that are developing valuable research published in top journals and projects awarded by the European Commission and others. Amongst them, we would like to highlight REMARC, the research collective Politics, Ontologies, Ecology, the Inter-university Research Centre Ecology Politics and Society, and Societal Transition for a Sustainable Economy, which make Pisa the Italian hub of the EE network and a reference for the international community. In this respect, we are honoured and glad to organise and host the coming XIV ESEE conference because we acknowledge the crucial importance of these kinds of events in letting our community reinforce its interpersonal linkages with in-person, friendly, and informal meetings.

Moreover, it is also a platform to attract other scholars and new students who will participate in the three summer schools and in the conference itself. The authors of this text had the luck of participating in various ESEE conferences (Geneva, 1998; Leeds, 2015; Turku, 2019). Since then, we have embraced the EE approach with enthusiasm, and consider it a fundamental stage in our professional maturation. Conferences are then fundamental in attracting those who are less engaged with EE and expanding the ESEE membership, thereby helping to mainstream EE within and outside of academia..

## EDITORIAL continued from page 1

2022 marks the 50th anniversary for the Limits to Growth report. Limits are a central, if not the central topic, of ecological economics. Hence, it makes sense to use the report as a frame for this year's conference theme «transformative action». As a teaser for the final roundtable

of the conference, the newsletter provides you with updated data and reflections on the topic from ongoing research by the president of the ESEE, Dan O'Neill.

The social-ecological transformation is ahead of us, so let's formulate what needs to be done and where we want to go while together in Pisa. I wish the organisers of the 14th ESEE Conference

all the best for a successful event, and I am quite confident that it will be an inspiring conference. The organisers have not only made a great effort to organise a scientifically exciting event, but have introduced a range of innovative and important elements, including lightning talks, games for sustainability, and an environmental travel policy.

## CLARA DALLAIRE-FORTIER

Clara Dallaire-Fortier shares thoughts with ESEE on rethinking economics, the deep commitment of students, and more

### Tell us about yourself

I am part of a community of students interested in questioning and improving economic teaching. This movement is international and includes organisations like Rethinking Economics. Many of us believe that changes in economic education are crucial to address the planetary crisis and the unequal socio-economic structures. A diversity of schools of thought and a variety of methods are empowering to find solutions fitted to the realities constructed by the current economic systems.

Active since 2014, I now have the chance to continue working on issues of economic pluralism at ONE. It is a Netherlands-based think tank, which is the umbrella organisation for the open-access book *Economy Studies*. The book is about the design of pluralist courses and curricula. I join the team for one day per week to help curate teaching materials. Yet, the majority of my work time is dedicated to doctoral research.

I am a student in the Department of Economic History at Lund University. In the past, I punctuated my studies with professional experiences in governmental organisations and research institutes. For example, I worked for the Institute for Socioeconomic Information and Research in Montreal, Canada and did a research fellowship at the Institute of Political Ecology in Zagreb, Croatia. These experiences and breaks from academia helped me define the type of research I want to do.

I am also currently involved in the local degrowth group in Lund/Malmö. We are doing a project building from the People's Green New Deal and citizen assemblies - working ahead of the elections in Sweden next autumn.

### What are you researching?

My research focuses on the political economy of mining. I wish to contextualise the impacts of the industry on local communities from geographical and historical perspectives. I build from political economy approaches including the *Social Structure of Accumulation* and the *System of Provision*. I also combine a variety of

tools and methodologies like archival work, interviews, and econometrics.

On this note, I can recommend to other doctoral students the annual workshop by the Association of Heterodox Economics, which proposes an interesting 3-days training on heterodoxy and methodologies. I learned a lot about how to design mixed-methods research in a rigorous way and to locate my research within epistemological debates.

For the thesis, I constructed a historical database on mine closures in Canada that covers the period between 1880 and 2020. I wish to understand how the needs of mining communities are provided for after mine closures. For this, I explore concrete dynamics of ownership, labour, production, and welfare. In a larger perspective, I hope that the research can inform the transition discussion and offer a critical take on resource-based economies and state intervention.

### If you were in charge of the world economy for one day, tell me one thing that you would do and why?

The beauty of this question is that in the last years, the community of degrowth and ecological economics proposed a large number of policies: working time reduction, universal basic services, reframing and valuing care work, resource caps, libraries of things & repair centres, co-ops and commons, job guarantee, progressive taxation, democratic planning, ...These policy proposals reshape the imaginary around solutions and allow for a more optimistic take on how to balance human needs within planetary boundaries.

I get a lot of energy from the discussion on needs provisioning. It is concrete and consists of a major shift in the current modes of operation. The fact that many IPCC researchers embrace such proposal (and are critical of the political structures that shape consumption) inspires me a lot as an early-career researcher. If I had a magic wand, restructuring the provisioning systems for a democratic, just, and sustainable use of resources would definitely be the first priority!

### Tell me one thing that you think many ecological economists don't realise, but should.

Coming from the student movement, I think ecological economists should know about the enthusiasm of the new cohorts of students. They ask for critical pedagogy and strong sustainability. For me, being in the discipline of ecological economics comes with a certain positioning. Scholars have an awareness that academic and activist spaces are not completely distinct. We are responsible for defining the implications it has on the type of work we do. The current Board of the ESEE, where I am one of the two student representatives, is aware of the role of the academic society. We are currently trying to build more projects and resources to empower ecological economics scholars. If you have any suggestions, please contact us!

Together with Chandni Dwarkasing (PostDoc at SOAS Economics) and Adrien Plomteux (PhD at UCL Institute for Global Prosperity), we created a workshop to introduce students and citizens to ecological economics. The workshop proposes creative as well as educational segments. It will soon be available on the website of the European Society of Ecological Economics. The workshop comes with instructions so that everyone can run it autonomously. We warmly invite you to use it, share it and contact us if you have any questions..





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## Podcast

In May 2021, ESEE launched a podcast series called “Economics for Rebels”.

Here, host Alexandra Köves aims to communicate ecological economics ideas, open them to critical discussion and test their applicability – from global problems to people’s everyday lives. A new episode is released every second Monday.

The last episode was an interview with Halliki Krenin about batshit jobs and just transition in aviation. This and all the 21 previous episodes can be found here:

[ecolecon.eu/esee-podcast](http://ecolecon.eu/esee-podcast)



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## End of official link between ESEE and Environmental Policy and Governance

At the ESEE Conference in Turku, it was agreed that ESEE would attempt to pursue an improved agreement with Environmental Policy and Governance (EPG), which was the official journal of ESEE.

However, after two years of discussions, ESEE and EPG were unable to reach a new agreement. In 2021, the ESEE Board therefore decided not to renew the affiliation contract with the journal. EPG will thus no longer be the “official” journal of the society, but ESEE members are still encouraged to submit their research to EPG, who continue to welcome submissions from ecological economists.

## FROM THE ARCHIVES

# ABOUT ECOLOGICAL ECONOMICS

BY JUAN MARTINEZ-ALIER

Ecological Economics was defined by Bob Costanza in 1991 as “the science and management of sustainability”. In a less assertive style, Ecological Economics could be defined as the study of the (un) sustainability of the economy. Ecological Economics does not resort to a unique measure of value expressed in a single “numeraire”. On the contrary, Ecological Economics encompasses neo-classical Environmental and Resource Economics but it also goes beyond it, by also including the physical appraisal of the environmental impact of the economy. This means that Ecological Economics studies the trends in physical indices (which will often move in a contradictory direction), and it must also study (in a framework of “post-normal science”) the new dangers and surprises arising from new technologies or from old technologies gone wrong.

Ecological Economics is another name for Human Ecology, as the study of the interplay between humans and the physical environment. The ecology

of humans is different from that of other animals in some respects. There is no risk of “naturalistic” reductionism, if we bear in mind that human demography and territoriality are very much influenced by social and political structures, and if we take into account inequality in the exosomatic use of energy and materials.

If you want to argue against any of these statements, if you feel they are worth discussing, then you are perhaps an actual or potential member of the European Society for Ecological Economics, itself an organic branch of the International Society for Ecological Economics (which has many European roots). Or, if you think all this is interdisciplinary nonsense or transdisciplinary bla-bla-bla, then we will leave you to relax in the congenial surroundings of your own self-sufficient university department or institute.

### REPRINT

FIRST PUBLISHED IN ESEE NEWSLETTER NO 1, MARCH 1997



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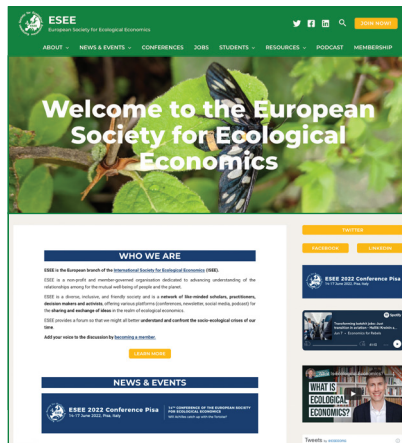
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## New website!



[www.ecolecon.eu](http://www.ecolecon.eu)

The ESEE has a new website! Here you find postings on news, event and jobs related to ecological economics. You can also find an overview of ecological economics courses and programmes, including summer schools. There is of course also a newsletter archive. And if you are not already a member, you can sign up to become a member!

If you want to publish interesting news, or information about events, job openings and new publications on the website or in the newsletter, feel free to send us an email: [eseeboard@gmail.com](mailto:eseeboard@gmail.com).

## Call for contributions to the newsletter

Following up on the membership survey from 2019, we would like to give more space to ESEE members both to present their work and to comment on theoretical issues and policy relevant matters. We welcome several kinds of contributions, such as commentaries or debates. Such articles should be maximum 500 words. We would also like to present a selection of summaries of recent peer reviewed papers or policy reports. Such summaries should be kept to maximum 250 words.

Please note that the offer to publish in the ESEE newsletter is only open to ESEE members. Email: [eseenewsletter@gmail.com](mailto:eseenewsletter@gmail.com).

## ESEE Country Contact Network

The Country Contact Network helps facilitate the transfer of information between the membership and the Board of ESEE.

The board of ESEE is happy to consider proposals regarding the appointment of Country Contacts for additional countries.

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## WHAT IS AT STAKE IN THE UPCOMING NATURE SUMMIT?

BY TONE SMITH

This autumn the world's countries will meet to hopefully agree on a Global Framework for Biodiversity (GBF). After two decades of failure in halting the global loss of biodiversity, the Parties to the Convention on Biological Diversity (CBD) is determined to produce a framework that can finally achieve this goal.

One question of relevance to ecological economists, is whether this goal can be achieved without questioning the underlying (economic) causes of environmental degradation. This topic is not very prominent in the negotiations, but still being posed by marginal stakeholders, such as e.g., the CBD Alliance, a network organisation of smaller NGOs.

The GBF will not be an agreement in the legally binding sense, like the Paris Agreement is. Still, many Parties to the COP refer to the Paris Agreement as a guiding star. Whether the Paris Agreement can really be considered a success in terms of its effects, is still debatable. The CBD has in any case taken inspiration from it, for example through a campaign for voluntary pledges.

More fundamentally, we can observe the increasing influence of concepts such as «no net loss» and «a nature-positive future», both relying heavily on traditional offsets, new versions of offsets such as Nature-Based Solutions (NBS), and on restoration of nature. There is some opposition amongst countries in the Global South, in particular, to the hype of NBS, but it remains to be seen whether this will have any impact on the final agreement. At the preparatory meetings in Geneva in March this year, the EU expressed clear support for NBS. Other influential concepts lurking in the background are «nature assets», «innovative financial instruments», «mainstreaming of nature's values» and «gross ecosystem product (GEP)».

Hence, there is plenty of material for ecological economists to study in this process, and plenty of opportunities for engaging in the process by writing op-eds and commentaries.

## REVISITING 'THE LIMITS TO GROWTH'

50 years after *The Limits to Growth* was published, the warning on “the predicament of mankind” is more relevant than ever

BY DAN O'NEILL  
ESEE President

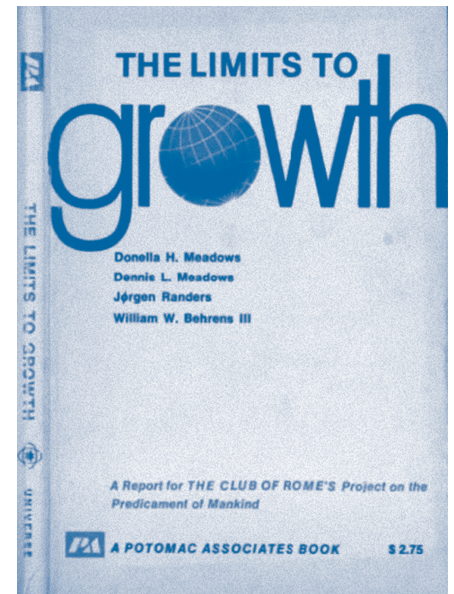
This year marks the 50th anniversary of the publication of *The Limits to Growth*<sup>1</sup>. The report, which was commissioned by the Club of Rome and published in 1972, remains one of the most influential environmental books of all time.

The authors of *The Limits to Growth* (henceforth LTG) created a system dynamics model, known as “World3”, to explore the interaction of a number of important variables at the global scale. These included population, food per capita, non-renewable resources, persistent pollution, industrial output per capita, and services per capita.

The model was parameterised over the period from 1900 to 1970, with scenarios running to 2100. The authors were nevertheless quick to point out that their scenarios were *not* predictions of the value of the variables in any particular year, but “indications of the system's behavioral tendencies only”<sup>1</sup>.

In the “Standard Run” of the model, which assumes the continuation of historical trends, the inevitable result is overshoot and collapse. In this scenario, collapse is driven by the relationship between the stock of industrial capital and the stock of non-renewable resources. As industrial capital grows, it consumes a larger and larger share of the resource flow, until resource depletion leads to the collapse of the industrial base, followed by the collapse of everything that is dependent on it (services, the food supply, and ultimately, the human population).

An analysis by Graham Turner, initially published in 2008<sup>2</sup>, suggested that humanity was most closely tracking the Standard Run of the original model – a worrying finding given how it ends. Subsequent analyses by Pasqualino et al.<sup>3</sup> and Herrington<sup>4</sup> also compared LTG scenarios with actual data, although these studies used an updated version of the model published in 2004 (World3-3)<sup>5</sup>, and are therefore not directly comparable to the original model.



Given that we are celebrating the 50th anniversary of LTG, I thought it was worth comparing the results of the original World3 model to the historical record. Building on the work of Turner, Pasqualino et al., and Herrington, I have recently carried out such an analysis (Fig. 1), as part of a wider project with other ecological economists.

As the figure shows, if humanity were exactly tracking the Standard Run, then collapse would already be underway. Peak industrial output would have occurred almost a decade ago, in 2013. However, given the lags inherent in the model, global population would not begin to decline until fifteen years later, in 2028.

But we must be careful not to read too much into an exact comparison of the model with real-world data. As the LTG authors note, “The exact timing of these events is not meaningful, given the great aggregation and many uncertainties in the model”<sup>1</sup>.

One of the largest uncertainties is the stock of non-renewable resources. For this reason, the authors also included a “Double Resources” scenario, which is identical to the Standard Run, except that the stock of non-renewable resources is set at twice the initial value. In this scenario, collapse is driven – not by scarcity of non-renewable resources as in the Standard Run – but by persistent pollution overloading the assimilative capacity of the environment. In this scenario, collapse in industrial output begins in 2033, twenty years later than in the Standard Run.

Of the four scenarios from the original LTG model that I analysed, the actual data most closely match the Double Resources scenario (Fig. 1). It is, in fact, remarkable just how closely both industrial output per capita and services per capita have tracked this scenario over a 50-year period, even though the composition of today's global economy could scarcely have been envisaged by the creators of the model 50 years ago. Nor could they have envisaged events like the war in Ukraine or the global coronavirus pandemic. In fact, the authors even noted that they "ignored discontinuous events such as wars or epidemics, which might act to bring an end to growth even sooner than our model would indicate"<sup>1</sup>.

The Double Resources scenario arguably aligns most closely with our current understanding of the most pressing environmental limits facing humanity. These are not on the "source" side — the main concern in the 1970s — but on the "sink" side. Climate change is a much greater concern now than running out of fossil fuels, for example. The authors certainly had pollutants like CO<sub>2</sub> emissions in mind when they made the model, but other more recent environmental problems, like plastic pollution, were not on the radar, and have actually grown much more quickly than the pollution variable in the LTG model (Fig. 1).

The original model included scenarios with dramatic improvements in technology. These allowed for greater resource efficiency, less pollution, higher agricultural productivity, and more effective birth control. But even when all of the technological improvements are combined into a single "Comprehensive Technology" scenario, collapse still eventually occurs in the model.

One of the key messages of *The Limits to Growth* is that the limits are plural. If humanity is able to circumvent one limit, it simply exposes another. Exponential growth cannot continue indefinitely on a finite planet.

The only way that collapse is averted in the model is by stabilising industrial output and population. However, it is worth noting that the successful "Stabilised World" scenario in LTG builds on the policies included in the Comprehensive Technology scenario. It is not enough to just stabilise industrial output and population — the technological improvements are also needed.

This finding is also repeated in recent work in ecological macroeconomics. For example, the "Sustainable Prosperity" scenario explored in Jackson and Victor's LowGrow SFC model<sup>6</sup> and the "Degrowth" scenario explored in D'Alessandro et al.'s Eurogreen model<sup>7</sup>

both combine technological improvements with social policies to achieve a stable economy with low or no growth.

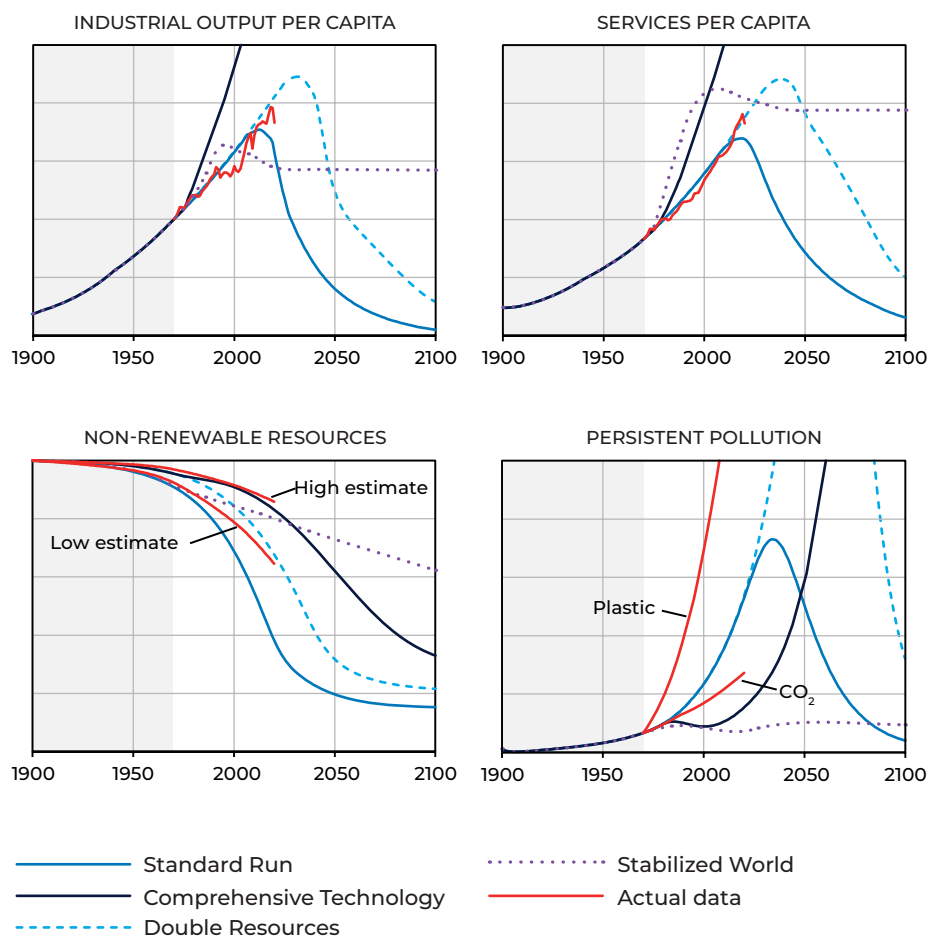
The relatively new field of ecological macroeconomics is arguably the successor to LTG. System dynamics forms the basis of many of the new models, but they have also been expanded considerably—to describe national economies rather than a global aggregate, to include economic and financial variables that were lacking in LTG, and to test a wide range of policies to manage an economy without growth. Such policies range from mainstream ideas like a carbon tax, to more radical proposals like working-time reduction and a wealth tax. These models show that it is possible for economies to manage, and even prosper, without growth.

The original LTG report issued a dire warning on "the predicament of mankind"<sup>1</sup>. Some 50 years later, the data suggest that we have not adequately heeded this warning — we are still tracking a scenario that ultimately ends in collapse. The message of LTG remains as relevant today as it did 50 years ago, but we cannot afford to wait another 50 years to act on its message.

## REFERENCES

1. Meadows, D. H., Meadows, D. L., Randers, J. & Behrens III, W. W. *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (Earth Island, London, 1972).
2. Turner, G. M. A comparison of The Limits to Growth with 30 years of reality. *Glob Environ Change* **18**, 397-411 (2008).
3. Pasqualino, R., Jones, A. W., Monasterolo, I. & Phillips, A. Understanding global systems today — a calibration of the World3-03 model between 1995 and 2012. *Sustainability* **7**, 9864-9889 (2015).
4. Herrington, G. Update to limits to growth: Comparing the World3 model with empirical data. *J Ind Ecol* **25**, 614-626 (2021).
5. Meadows, D. H., Randers, J. & Meadows, D. L. *Limits to Growth: The 30-Year Update* (Earthscan, London, 2004).
6. Jackson, T. & Victor, P. A. The transition to a sustainable prosperity - A stock-flow-consistent ecological macroeconomic model for Canada. *Ecol Econ* **177**, 106787 (2020).
7. D'Alessandro, S., Cieplinski, A., Distefano, T. & Dittmer, K. Feasible alternatives to green growth. *Nature Sustainability* **3**, 329-335 (2020).

FIGURE 1. THE LIMITS TO GROWTH VERSUS 50 YEARS OF REALITY





# ESEE MEMBERSHIP

ESEE is the European branch of the International Society for Ecological Economics (ISEE), providing a network for ecological economics in Europe. ESEE is a diverse, friendly and inclusive society open to scholars, practitioners, decision-makers and activists who are keen to understand and act upon social-ecological crises and advance alternatives that enable 'living well within limits'. You will feel at home within ESEE if you are open to inter- and transdisciplinary work, and your research and actions cover topics like:

environmental and intergenerational justice

systems change

the commons

biophysical accounting

environmental values

environmental governance

degrowth

post-growth

ecological macroeconomics

## BENEFITS

ESEE offers several benefits to its members:



### NETWORK

Network and collaborate with ecological economists on cutting edge research for societal impact across Europe and around the World



### PARTICIPATE

Participate in initiatives of the ESEE Board that aim to synthesise research for societal impact, such as Staying Grounded, the ESEE podcast, ESEE summer schools, changing curricula, etc.



### DISCOUNT ON EVENTS

Be eligible for reduced registration fees at ISEE/ESEE events, including ISEE/ESEE conferences



### FREE JOURNAL

Get access to the journal Environmental Values free of charge, and the journal Ecological Economics at a reduced price



### STAY UP TO DATE

Stay up-to-date about job openings in the field, research funding opportunities and events (e.g. via our quarterly newsletter, social media channels and website)

**Besides receiving benefits, you have the chance to share your knowledge and expertise**

- Advance the methodological and conceptual foundations of ecological economics
- Create a community of critical scholars who are ready to change the world
- Spread ideas of intergenerational and environmental justice, degrowth, or diverse values across academic fields and policy arenas
- Advance knowledge exchange and co-creation between scholars, teachers, students, practitioners and policy-makers

## HOW TO BECOME A MEMBER

You can become a member of ESEE by registering at ISEE and indicating your willingness to join its European branch.

Membership options and prices for one year start at \$15. (Special rates for students and low-income members.)

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**As a student you have two membership options:**

### Active student members:

You are an ordinary paying member of ESEE/ISEE with full membership rights, but you will still be registered as a student in our files.

This membership status implies that you are also granted the special right to vote for student members of the ESEE Board, stand as a candidate for student member representation on the ESEE Board and are allowed to pay student rates at our conferences.

### Non-paying student members:

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