

ENT

C/ Josep Llanza, 1-7, 2n 3a
08800 Vilanova i la Geltrú
+34 93 893 51 04
info@ent.cat | www.ent.cat



ANNUAL RESEARCH REPORT 2020





In 2014 ENT approved its **2014-2020 Research Plan**, which includes a series of indicators and their evaluation through annual research reports. The results for 2020 are presented below.

1

RESEARCH ARTICLES

ARTICLES PUBLISHED AND ACCEPTED IN JOURNALS WITH IMPACT FACTOR

Torrente-Velásquez, J.M., Chifari, R., Ripa, M., Giampietro, M. (2020) Robust information for effective municipal solid waste policies: Identifying behaviour of waste generation across spatial levels of organization. *Waste Manag.* 103, 208–217.

Torrente-Velásquez, J.M., Ripa, M., Chifari, R., Bukkens, S., Giampietro, M. (2020). A waste lexicon to negotiate extended producer responsibility in free trade agreements. *Resour. Conserv. Recycl.* 156, 104711.

Pagiola, S., Honey-Rosés, J., Freire-González, J. (2020) Assessing the Permanence of Land-Use Change Induced by Payments for Environmental Services: Evidence From Nicaragua. *Tropical Conservation Science*, 13.

Freire-González, J. (2020) Pandemics and the environmental rebound effect: reflections from COVID-19. *Environmental and Resource Economics*, 76: 447–517.

Vélez Henao, J. A., García Mazo, C. M., Freire González, J., Font Vivanco, D. (2020) Environmental rebound effect of energy efficiency improvements in Colombian households. *Energy Policy*, 145, 111697.

Mascarell, Y., Herrera-Racionero, P., Lizcano, E., Miret-Pastor, L. (2020) “The sea is our life” Woman in the fishery sector of the Valencian Community. *Sociologia Ruralis*. <https://doi.org/10.1111/soru.12318>

Freire-González, J. (2020) Energy taxation policies can counteract the rebound effect: analysis within a general equilibrium framework. *Energy Efficiency*, 13: 69–78.

Rodrigues, L. C., Puig-Ventosa, I., López, M., Martínez, F. X., García Ruiz, A., Guerrero Bertrán, T. (2020). The impact of improper materials in biowaste on the quality of compost. *Journal of Cleaner Production*, Vol. 251. 119601.

Freire-González, J. (2021) Governing Jevons’ Paradox: Policies and Systemic Alternatives to Avoid the Rebound Effect. *Energy Research & Social Science*, 72, 101893.

OTHER RESEARCH PUBLICATIONS IN 2020

Sekulova, F., Baró, F., Campos Rodrigues, L., Llabrés, A. (2020) Les solucions basades en la natura en l'àmbit municipal. *Diputació de Barcelona, Eines, Medi Ambient*.

Pellicer, P., Puig I., Sastre, S., Iriani, M. (2020) Una mirada a las tasas de residuos en España 2020. *Equipamiento y Servicios Municipales*, nº 193: 26–29.

Puig Ventosa, I. (2020) ¿Contenedores con identificación o recogida puerta a puerta? *Equipamientos y Servicios Municipales*, 191: 80–83.

Chaparro, L. (2020) Un mar de reptes (cap. 6: 151–153) in Castell, C. i Terradas, J. (eds.) “Som Natura: el repte de l'Antropocè”. *Museu de Ciències Naturals de Barcelona i Departament de Territori i Sostenibilitat de la Generalitat de Catalunya*.

Flavia Pantalena, A., De Oliveira Soares, M., Campos Rodrigues, L. (2020) Divers perceptions and implications for sustainable tourism management in the Ceará State Coast, Brazil. *Arquivos de Ciências do Mar*, 52 (2): 36–51.

2 OWN PUBLICATIONS



The Spanish Mediterranean fishing sector and its market reaction to the ongoing coronavirus crisis

This report is an in-depth urgent analysis about the evolution of the fishing sector at the Spanish Mediterranean coast in a daily changing environment. Thus, the data used here is preliminary and it will be completed in the future with other evaluation reports ex post.

Ortega, M., Mascarell, Y. (2020) The Spanish Mediterranean fishing sector and its market reaction to the ongoing coronavirus crisis. Fundació ENT



The Spanish Mediterranean fisheries is weathering the storm of COVID-19 crisis

COVID-19 crisis has produced revenues loss in the Mediterranean fisheries sector. Nevertheless, they have been cushioned by the reduction of operative costs and the deployment of an extensive network of public aid to the sector.

Ortega, M., Mascarell, Y., Coll, M. (2020) Monitoring of the COVID crisis in the Spanish Mediterranean fisheries. Fundació ENT



Las tasas de residuos en España 2020

The Observatory on Waste Taxation, promoted by ENT Foundation, has published the study of researchers Alex Terrén, Pablo Pellicer, Marc Iriani, Ignasi Puig and Sergio Sastre, entitled "Waste Charges in Spain 2020 (in Spanish)". Waste charges paid by households and commercial activities in 125 municipalities have been analysed, including all the provincial capitals. This study continues previous analyses performed with data from 2015, 2018 and 2019.

Terrén, A., Pellicer, P., Iriani, M., Sastre, S., Puig, I. (2020) Las tasas de residuos en España 2020. Fundació ENT

Two issues of the **Ecología Política** journal were coordinated and published:



60 MESOAMÉRICA Y EL CARIBE December 2020

Issue #60 focuses on the region of Mesoamerica and the Caribbean to explore intersections between political ecology, environmental justice and decolonial thinking and praxis. This collective effort gathers 21 articles coming from the academia, grassroots activism, and literary criticism. This number aims to question the current project of occidental modernity, it also sheds light on different expressions of resistance and existence which go further the colonial, racial and patriarchal model.



59 FAR RIGHT June 2020

Issue #59 examines the links between postulates and theoretical dimensions of neo-conservative politics and their relationship with environmental narratives and practices. The contributions in this issue analyse the conservative turn that is happening around the world, reflecting upon the appropriation of the environmental discourses by the far right and exploring how socio-environmental resistance movements place themselves as alternatives to the neo-liberal authoritarian drift.

3

RESEARCH PROJECTS

ENT has carried out hundreds of projects at various levels (local, national regional and European) and for a large variety of clients (public administrations, NGOs, trade unions, universities, etc.) in different work areas. Our projects are mainly related to the development and implementation of public policies, focussed on their design, analysis and management.

Here is a summary of the 2020 highlights:



ANALYSIS OF THE SITUATION AND POTENTIAL OF THE BLUE ECONOMY IN BARCELONA

Commissioned by Barcelona Regional

It consisted on technical support to carry out an analysis that allows identifying the situation and potential of Barcelona in the development of the blue economy, as well as to help carry out a blue economy strategy in the city. Specifically, it will help to: Determine what is understood by the blue economy in the international context and have a proposal adapted to the case of Barcelona that serves to guide the strategic vision of the city itself; Characterize the blue economy in Barcelona and identify the priority sectors.



NATURVATION | H2020 NATURE-BASED SOLUTIONS

Financed by European Commission

Nature-Based Solutions have the potential to limit impacts of climate change, enhance biodiversity and improve environmental quality while contributing to economic activities and social well-being. To unlock the potential of nature based solutions for sustainable urban development, NATURVATION will take a transdisciplinary, internationally comparative approach to capture the multiple impacts and values of these solutions, identifying the most promising governance, business, finance and participation models and how to overcome the systemic conditions that currently limit their use.



CONVENTIONAL & BIODEGRADABLE PLASTICS IN AGRICULTURE

Commissioned by Technopolis

The overall objective of this study is to support the Commission's work on potential policy actions regarding agricultural plastics, and regarding the establishment of a framework for biodegradable plastics. In particular, the objective of the study is to identify and reduce the environmental impacts associated with conventional and biodegradable agricultural plastics. The main focus is on their end-of-life, in particular their incorrect collection, their low reuse and recycling levels and their effective biodegradability. The study deals with those agricultural macro-plastics that are deliberately placed in the environment to fulfil a function in the agricultural system.



TECHNOLOGICAL PROGRESS AND ENVIRONMENTAL LIMITS: LOOKING FOR SOLUTIONS FOR THE JEVONS PARADOX

Beatriu de Pinós research grant from Generalitat de Catalunya obtained by Jaume Freire González

The main objective of the proposal is to obtain a better understanding of the Jevons' Paradox and its potential solutions. We will investigate how government interventions can minimise the Jevons' Paradox, and where is the limit of it through the case study of Catalonia.



ANALYSIS OF THE ENVIRONMENTAL AND SOCIOECONOMIC IMPACT OF SELF-CONSUMPTION AND RENEWABLE ENERGY COMMUNITIES IN SPAIN

Commissioned by Aiguasol

The objective of the study was to evaluate the impact of a binding objective such as community energy (self-consumption and energy communities) by 2030 in Spain in macroeconomic and environmental terms, through the variation of different indicators.



TECHNICAL SUPPORT TO THE PROJECT BLUEFASMA

Commissioned by MedCities

Is an Interreg project willing to implement the principles of circular economy in the fishing and aquaculture sectors. The main goal is to stimulate the growth of blue circular economy in islands and coastal areas of the Mediterranean. For that reason, several pilots will be implemented under the responsibility of MedCities, and with the support of the Metropolitan Area of Barcelona (MAB).



METHODOLOGICAL EXPLORATION FOR THE CALCULATION OF EQUIVALENT RAW MATERIALS IN CATALUNYA

Commissioned by IDESCAT

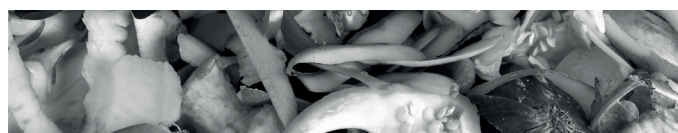
The calculation of material flows indicators is a powerful tool to monitor the physical dimension of economies. However, the accounting for imports and exports covers the mass of products traded and therefore underestimates the total mass of materials used in their manufacture. The purpose of the project is to calculate the equivalent raw materials of commerce in Catalonia, in order to complete the indicators derived from material flow accounts and to have a more precise perspective of the environmental burdens that Catalonia places on other territories, and that other territories place on Catalonia.



SUPPORT TO THE PROJECT SUBTRACT

Commissioned by Agència de Residus de Catalunya

The project supports the Catalan Waste Agency, as a partner of the Interreg project SUBTRACT. The goal of the project is to increase the economic sustainability and competitiveness of the reuse and preparation for reuse centres, through an analysis of their business models.



DECENTRALIZED MANAGEMENT SCHEME FOR INNOVATIVE VALORIZATION OF URBAN BIOWASTE

Financed by European Commission

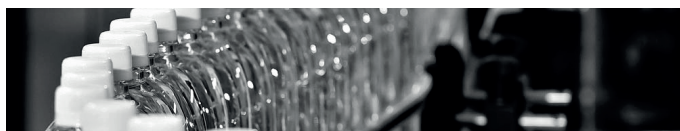
Proposes to change the present urban metabolism for organic matter, energy and biowaste to a more circular economy and to assess the impacts of these changes on the whole waste management cycle. Thus, the challenge will be to shift from an urban "grey box", implying mainly goods importation and extra-urban waste management, to a cooperative organization of networks enabling circular local and decentralised valorisation of biowaste, through energy and bio-products production.



ANALYTIC STUDY OF NATURE BASED SOLUTIONS FOR A CLIMATE CHANGE ADAPTATION STRATEGY IN THE MUNICIPALITIES OF THE BARCELONA PROVINCE

Commissioned by Diputació de Barcelona

It consisted on the development of a guide for the implementation of nature-based solutions (NBS) at local level. This guide provides information regarding the various types of NBS, their historical trajectory at the local level and related aspects of governance, participation and financing. In addition, it contains 20 NBS cases implemented locally in different cities around the world focusing on initiatives that can contribute to mitigation and adaptation to climate change.



ANALYSIS OF THE NEEDS OF R+D+I OF NEW MATERIALS FOR PACKAGING AND OF INCREASE OF THE PERCENTAGE OF PLASTIC RECYCLED IN NEW CONTAINERS IN THE FRAME OF THE PROJECT INTERREG EUROPE CIRCE

Commissioned by Generalitat de Catalunya

The project starts with the analysis of the European regulatory framework (policies, strategies, REACH, etc.) in relation to plastics and, in particular, in relation to increase the percentage of recycled plastics in packaging.

In addition, it analyses the current waste management system for packaging and the situation of the market in relation to availability of high-quality recycled plastic. It also discusses the implications of increasing the recycled plastic content, in terms of logistics, traceability, etc. The existing and emerging technologies are analysed. From this analysis, R&D needs will be identified and discussed with key stakeholders (research centres, waste management companies, recyclers, packaging manufacturers, etc.), which will derive to some conclusions.

In addition to these projects, we promote our own research projects such as:



ECOLOGÍA POLÍTICA JOURNAL

Ecología Política – Cuadernos de Debate Internacional is a bi-annual journal that reflects debates around the influence of political power on socioecological conflicts. Within the discipline of political ecology, it focuses on aspects such as environmental conflicts, inequalities in access to resources and exposure to pollution, environmental policies, resistance networks and social movements and referents of environmental thought.

ENT assumed the secretariat of the journal since 2006. Since 2013, Ecología Política has been jointly published by ENT Foundation and Icaria Editorial, and it counts with an Editorial Board and an Advisory Board.



OBSERVATORY ON WASTE TAXATION

The Observatory on Waste Taxation was created in 2018 to monitor the use of taxation instruments for waste policy in Spain. Our objective is to act as a reference in this aspect and to promote a greater use of waste taxes and charges as tools to improve waste management.



CONTAMINACIÓ.BARCELONA

Is a multiplatform communication project that was born in 2019 promoted by the ENT Foundation to provide quality, relevant and easily understandable information on pollution in Barcelona.

It is an initiative for the transfer of scientific, technological and social information to groups and people with some knowledge or prior interest in the field of pollution: journalists, managers, technicians, politicians, professionals and members of non-governmental organizations, among others.

4 FELLOWSHIPS & INTERNSHIPS

FELLOWSHIPS

In 2020 ENT Foundation had 4 “Fellows”:



Dr. Santiago Gorostiza

Postdoctoral researcher at the Centre d'Histoire de Sciences Po (Paris), an environmental history specialist in the Spanish Civil War and the Franco regime. He made a research internship at ENT during his doctoral research in the framework of a European Marie Curie project on political ecology. He is a member of the editorial board of *Ecología Política* journal and has edited several issues of the journal. After completing his doctorate at the University of Coimbra (Portugal), he was a postdoctoral researcher at the Institute of Environmental Science and Technology (ICTA) at the UAB, where he did research on environmental history and historical climatology.



Dra. Irmak Ertör

Assistant professor at the Ataturk Institute – Bogazici University. Economist and specialist researcher in political ecology and specifically in relation to fishing and aquaculture.



Dr. Gabriel Weber

Associate Professor of International Affairs and Sustainability at ESSCA, Bordeaux. He was a Marie Curie Post Doc Fellow at ENT in the field of Political Ecology. He holds a PhD in Environmental Management and Accounting from TU Dresden in Germany. His research focuses on mitigation and adaptation to climate change, environmental policy instruments, and waste management, within the fields of ecological economics and political ecology.



Dra. Marien González Hidalgo

Environmental Scientist and researcher specialized in political ecology studies with a feminist perspective and psycho-social perspective in environmental conflicts.

INTERNSHIPS

In 2020, four internships were carried out at ENT Foundation by:



Igor Živković

Master on Political Ecology, Degrowth and Environmental Justice in Barcelona. His interests are related to development and climate change. At ENT Foundation he worked on air pollution and degrowth in Barcelona.



Alex Terrén Pastor

Fourth year student of Environmental Sciences (UB) who worked on tasks related to the Observatory on Waste Taxation.



William H. Burger

Student of Industrial Ecology. His interests are political ecology, public policy, and waste management. As an intern, he supported the elaboration of international project proposals.



Marc Zea Pallarés

Environmental Sciences student (UB) with a specialization in Environment Management. He works creating an information channel on environmental problems in the Spanish Mediterranean.

5 OTHER RESEARCH ACTIVITIES

CONTRIBUTIONS IN INTERNATIONAL EVENTS

- 🖥️ Puig, I. "Key outcomes from charging systems and PAYT experiences in Spain" | Webinar "Financing models of municipal waste management and economics of biowaste streams" | Florence School of Regulation - Online | November 24th.
- 🖥️ Puig, I. "Pay-As-You-Throw in high density contexts" | Webinar "Waste management in multifamily buildings and PAYT" | Sao Joao de Madeira - Online | June 25th.

COLLABORATION AGREEMENTS

- 🤝 **Universitat de Barcelona**
(Departament d'Història Econòmica, Institucions, Política i Economia Mundial de la Facultat d'Economia i Empresa)
Until 2023 to promote research activity, transmission and transfer of knowledge and training support in the areas of ecological economics and political ecology.
- 🤝 **Universitat Autònoma de Barcelona**
(Institut de Ciència i Tecnologia Ambiental)
Until 2023, by which the member of the ENT Foundation, Miquel Ortega, becomes a "University Linked Researcher" of the Ecological Economy Research Group at ICTA-UAB.

DOCTORAL THESES SUPERVISION

- 🎓 PhD student: Martín Bordon.
"Three essays about the Direct Rebound Effect in Households". Department of Applied Economics, Autonomous University of Barcelona.
Period: 2019-2022.
Supervisors: Jaume Freire-González (ENT Foundation) and Emilio Padilla Rosa (UAB).
- 🎓 PhD student: Jorge M. Torrente V.
"Assessing the performance of Municipal Solid Waste Management System in the socio-economic context of a developing country". ICTA, Autonomous University of Barcelona.
Period: 2017-2020.
Supervisors: Mario Giampietro (UAB), Rosaria Chifari (ENT Foundation) and Maddalena Ripa (UAB).

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