



UNIVERSITAT ROVIRA I VIRGILI

climate emergency and energy transition

challenges of southern catalonia

Conference

7 - 10 October 2019

Campus Catalunya

Rovira i Virgili University (URV)



Diputació Tarragona

urv.cat/jornades-emergencia-climatica

Statement of the URV's adherence to the *Climate Emergency Declaration*,

URV Senate, 26 June 2019

The scientific community has determined with virtual certainty that the anthropogenic intensification of the atmosphere's natural greenhouse effect from the emission of greenhouse gases is primarily associated with the mass combustion of fossil fuels, the primary source of energy in today's society. This has led to a disruption in the energy balance of our climate system, resulting in global warming, the driver of human-induced climate change and its associated impacts on the world's socioecosystems. There is already abundant evidence of the climate transition footprint, and more will be seen in the near future. 90% of the additional energy associated with the human intensification of the greenhouse effect is accumulated in the intermediate layers of the oceans. The oceans have also undergone marked acidification, with negative impacts on marine ecosystems. The cryosphere is shrinking, with a pronounced reduction in Arctic sea ice, in winter snow cover in the northern hemisphere, and in glacial mass in Greenland and in the alpine glaciers of Antarctica. Warming oceans and melting ice are resulting in rising sea levels that threaten low-lying coastal and delta areas as well as Pacific islands and atolls. In addition to all of this, the world is experiencing a dramatic loss of biodiversity and extinction of species, as well as the migrations of both terrestrial and marine species in longitude as well as latitude due to new climate conditions, impacts on different human and economic systems, and global insecurity resulting from the migratory pressures of the societies most vulnerable to climate change.

We are facing a situation of rapid climate transition to which today's society must respond urgently, adopting mitigation strategies to rapidly and progressively reduce greenhouse

gas emissions. Fast and far-reaching transitions are needed that will involve all sectors of socio-economic activity and lead towards energy transition, changes in how agricultural land is used, changes to urban areas and infrastructure including transport and buildings, and also to industrial systems. Decisive measures must be adopted in all of these areas to reduce their greenhouse gas emissions. Society as a whole, economic and social agents, and especially governments must approve urgent measures to reduce emissions in all sectors of economic activity, without yielding to the temptation to make society exclusively responsible for reducing emissions. Governments and administrations must adopt the most effective measures to reduce emissions, and they must ensure compliance.

Manola Brunet

Professor of Geography at the URV and chair of the Commission for Climatology of the World Meteorological Organisation

Within the framework of the URV's commitment to the United Nations' 2030 Agenda and its Sustainable Development Goals, the URV, by unanimous decision of its senate, will comply with the request for a declaration of a state of climate emergency and strengthen its commitment to the fight against climate change.

CLIMATE EMERGENCY AND ENERGY TRANSITION CONFERENCE

Rovira i Virgili University (URV) would like to take advantage of the opening of the new academic year to organise a conference that examines one of the issues that most concerns a large part of humanity today: **the climate emergency and energy transition.** The discussion will be based on current scientific and academic knowledge and will involve different stakeholders from the region. **The aim of the conference is to bring together social, technical and academic agents to discuss the major challenges that climate change poses.** It will examine the effects of energy management, consumption of resources, and social impacts (inequality), with special emphasis on the solutions researchers and research groups can provide through interaction with the region and with society as a whole.

The meeting aims to provide objective answers to how science can address the impacts and challenges posed by rapid climate transition and to anticipate responses to the challenges presented by the climate emergency for Southern Catalonia.

In order to achieve this goal, four sessions in related relevant disciplines have been planned. **The first** (on 7 October) **will focus on providing information on how science contributes to improving our knowledge, monitoring and prediction of climate change.** This session will also analyse how high-quality

climate services can contribute to studying the climate impact on some of the most important social-ecological systems in Southern Catalonia, including our coastal areas, among others.

The second session (on 8 October) **will focus on discussing and reinforcing R&D&I strategies that address the energy transition in order to define a joint agenda to help guide the strategy of the territory and the URV in this area in the coming years.**

The third session (on 9 October) **will coincide with the opening of the URV's new academic year. The inaugural address will be given by Clare Goodess, a researcher in the prestigious Climatic Research Unit of the University of East Anglia** (Norwich, UK). Dr Goodess will present the rationale and impetus behind the university's decision to formally declare a climate and biodiversity emergency.

Lastly, **the fourth session** (on 10 October) **will be organised as a forum in which civil society, socio-economic agents, the university, governmental administrations and political actors from the region can together discuss the actions, commitments and mobilisations required in the short, medium and long term to tackle the climate emergency and green energy transition in Southern Catalonia.** In order to focus the debate, the most recent Intergovernmental Panel on Climate Change (IPCC) report will be presented, published in early August 2019: *Climate Change and Land*. This study places special emphasis on desertification, land degradation, sustainable land management, food security and greenhouse gas fluxes in terrestrial ecosystems. One of its most relevant messages is that "the establishment of a global approach in which sustainability is rewarded, combined with the adoption of preventive measures is the best combination for tackling climate change".

WELCOME FROM THE RECTOR

The climate emergency is a reality we must address with decisive measures. In June 2019, the Senate of the URV, the institution's highest governing body, being aware of the gravity of the situation and upon the initiative of URV researchers, approved a statement on this matter. The URV has also aligned its governing actions with the 17 Sustainable Development Goals of the UN, which include climate action in relation to Goal 13.

And it is precisely in line with this goal that the URV has proposed measures such as the introduction of renewable energies and a commitment to reduce CO₂ emissions by 20% by the year 2020 to reduce its carbon footprint, one of the main accelerators of climate change. In fact, thanks to energy-saving measures, from 2005 to 2018, the URV has managed to reduce its electrical power consumption by 41% per building square metre. **Similarly, with a view towards the 2019-20 academic year, the URV is strengthening its commitment to promoting public transport by providing funding to offer better fares to the university community (students, teaching and research staff, and administrative and service staff) and extending lines and timetables.**

The URV's for these sessions is to alert the public and the university community and make them aware of the importance of rising up to and taking on these challenges

together. The URV wants to act as a catalyst and promoter of initiatives that can counteract and decelerate climate change. **Unfortunately, some of the consequences of climate change have already exerted a negative impact on Southern Catalonia, such as the massive forest fire in Ribera d'Ebre.** The URV would like to be involved in helping this area to recover, in helping life to flourish there once more, and in helping the Ribera d'Ebre region rise quickly again from the ashes. To this end, the fourth day of this conference is set aside for a discussion among stakeholders about how this idea can be materialised through the design of Territorial Competitiveness and Specialization Projects (PECT), with the involvement of the Provincial Councils, the municipalities of Southern Catalonia, the Government of Catalonia, and the URV itself.

María José Figueras

Rector of Rovira i Virgili University



PROGRAM

DAY 1

7 October. Catalunya Campus.

From Robust Climate Data to Trustworthy Climate Services: Tackling the Climate Emergency

The goal of this conference is to share with society and the university community concepts and knowledge about how science is addressing the impacts and challenges posed by climate transition through contributions that can help prepare us to respond to the climate emergency.

The conference will address concepts such as what climate science is and how it has progressed from the development of quality baseline climate information, and climate data. It will touch upon topics such as climate monitoring and its challenges, the advantages and limitations of climate modelling, and the use of regional models and climate projections to more accurately predict and address the sectoral impacts of climate transition.

It will also focus on foreseeable climate impacts on deltaic coastal systems, the development of climate indicators aimed at supporting the requirements of end users in sectors such as agriculture, energy, water and tourism, and disaster risk reduction throughout Europe with the European project INDECIS, coordinated by the URV, to examine the creation of value for the climate services that today's society demands.

The conference will close with a roundtable intended to foster debate among stakeholder representatives from the political, communication and social arenas.

09.00-09.30 Opening of conference: Welcome from the rector of the URV
María José Figueras

Conference Objectives, Organisation and Introduction

Manola Brunet, professor in the URV's Geography Department and chair of the Commission for Climatology (CCI) of the World Meteorological Organisation (WMO)

Moderator of the morning session: Enric Aguilar

09.30-10.15 The Story of Climate Data

Thomas Peterson, former head researcher for NOAA's National Center for Environmental Information (NCEI), Ashville, North Carolina (USA), and chair of the Commission for Climatology (CCI) of the World Meteorological Organisation (WMO)

10.15-11.00 Monitoring and Analysis of Global Climate: The Role and Challenges of the Commission for Climatology (CCI) of the World Meteorological Organisation (WMO)

Manola Brunet, professor in the URV's Department of Geography and chair of the Commission for Climatology (CCI) of the World Meteorological Organisation (WMO)

11.00-11.30 Coffee and networking break

- 11.30-12.15** Climate modelling and regional projections in the context of climate services
Clare Goodess, director of research of Climate Research Unit of the University of East Anglia, Norwich (UK)
- 12.15-13.00** The Climate Emergency in Coastal Zones: Challenges in the Ebro Delta
Carles Ibàñez, researcher for the Marine and Continental Waters Programme of the Institute of Agricultural and Food Research and Technology (IRTA)
- 13.00-15.00** Lunch break
- 15.00-15.45** **Moderator of the afternoon session: Manola Brunet**
The Development of Datasets, Tools and Climate Services for Climate Monitoring: the INDECIS Project
Enric Aguilar, researcher for the Climate Change Centre and Director of the Geography Department of the URV
- 15.45-16.30** The Valorisation of Climate Services
Sonia Quiroga, professor in the Department of Economics at Alcalá de Henares University
- 16.30-18.30** Roundtable on the Climate Emergency
Moderator: Xavier Sigró, senior lecturer in the Geography Department of the URV
Salvador Samitier, head of the Catalan Office for Climate Change of the Government of Catalonia
Ana Navarro Bulló, FridaysForFuture
Daniel Turon, ExtinctionRebellion
Cristina Ribas, Platform for Air Quality
Jordi Vilardell, climate journalist for TV3
Antonio Cerrillo, environmental journalist for La Vanguardia
-

DAY 2

8 October. Catalunya Campus

Climate Change, Energy Transition and Sustainability: R&D&I Strategies

The objectives for reducing greenhouse gases (absolute decarbonisation and zero emissions), clearly established by the EU, are mainly driven by actions and strategies designed to reduce the carbonisation index (emissions per unit of energy consumption) and to significantly reduce energy intensity (consumption efficiency).

However, it is also important to ensure that these actions and strategies are compatible with sustainable economic development and, therefore, to promote the uncoupling of emissions and resource consumption to GDP.

The first factor mentioned above requires taking action on the issues of renewable energy sources, energy generation efficiency, and the integration of these energy sources into power networks. The second factor, energy intensity, is basically associated with undertaking technological innovation strategies and improving

industrial and production processes, as well as rationalising the energy demand of end users. And all this without neglecting to consider the social impact of these strategies.

In this context, this conference includes renowned speakers who can help to define a joint R&D&I agenda that will contribute to steering the URV's strategy on this issue in coming years. Given its global character, we would like this conference to become part of a series of

events in the future that address these challenges in relation to sectoral and functional concerns.

The conference is primarily directed at stakeholders of all kinds involved in R&D&I chains, university researchers and from research and knowledge transfer centres, and companies and government bodies as a means to identify opportunities for sharing interests and projects.

09.00-09.30 Opening of conference: Welcome from the rector of the URV

María José Figueras

Conference objectives, organisation and introduction

Juan Antonio Duro, professor in the Department of Economics of the URV

09.30-10.15 Overview and update of scientific evidences supporting anthropogenic climate change

Thomas Peterson, former head researcher for NOAA's National Center for Environmental Information (NCEI), Ashville, North Carolina (USA), and chair of the Commission for Climatology (CCI) of the World Meteorological Organisation (WMO)

10.15-11.00 Climate Change, Energy and Society: a multidisciplinary research agenda for universities

Simone Abram, researcher in the Department of Anthropology of Durham University (UK)

11.00-11.30 Coffee and networking break

11.30-12.15 Energy and R&D&I: Challenges and Projects

Joan Batalla, managing director of the Foundation for Energy and Environmental Sustainability (FUNSEAM)

12.15-13.00 Energy and Environmental Challenges in Catalonia

Manel Torrent, director of the Catalan Energy Institute (ICAEN) of the Government of Catalonia

13.00-13.45 Climate change and societal transformations: a research agenda

Pim de Boer, strategic policy advisor for the European Union for Vrije Universiteit Amsterdam (VU)

16.00-18.00 Discussions lead by:

Simone Abram (DU), Pim de Boer (VU), Alberto Coronas (URV) and Juan Antonio Duro (URV)

DAY 3

9 October. Catalunya Campus. Main lecture hall (Aula Magna). 12.00 noon

Opening of the URV 2019-2020 academic year

Clare Goodess, researcher in environmental sciences at the University of East Anglia, will deliver the inaugural address for the new URV academic year with a session entitled “Why UEA has declared a climate and biodiversity emergency”.

Dr Goodess joined the internationally renowned Climate Research Unit at the University of East Anglia in 1982, where she is currently a lead researcher. Her current research interests focus on the development and use of regional climate data, particularly in relation to change projections, extreme events and the representation of uncertainty. She works at the interface between climate modellers and users of climate information, where communication, particularly with decision makers and policy makers as well as researchers modelling the impacts of climate change, is increasingly important.

Her earlier practical experience investigating past climate change and variability and links with atmospheric circulation, as well as statistical downscaling from the coarser global climate model scale to the higher spatial scales relevant for users of climate projections, provides a valuable context for many of my ongoing research projects and activities. These focus on the use of regional climate information in impacts, adaptation and vulnerability assessments for a number of different sectors including health, agriculture, tourism, renewable energy, and the built environment and infrastructure. She has coordinated and worked on many major UK and European climate change projects, together with projects focused on the Mediterranean, South America and the Caribbean.

Having worked on climate change scenarios and with users of these scenarios over a couple of decades, she is well positioned to play a leading role in the current development of climate services. Her current projects focus on the development of climate services for the renewable energy sector and on the development of climate and health country profiles for the World Health Organisation, as well as collaborative work on sustainable and healthy cities. She also took part in the Horizon 2020 SECLI-FIRM project on the added value of seasonal climate forecasting for decision-making in integrated risk management, focusing on the energy and water sectors.

Clare Goodess's experience and expertise has been required for a wide range of international activities. She was the lead author of the 2012 Intergovernmental Panel on Climate Change (IPCC) Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. She is co-chair of the Working Group on Regional Climate of the World Climate Research Programme, with responsibilities including overseeing the CORDEX international initiative on regional downscaling. As for the Commission on Climatology and the Commission for Basic Systems of the World Meteorological Organization, she is a member of the Inter-Programme Expert Team on Regional Climate Activities.

DAY 4

10 October. Catalunya Campus

Southern Catalonia Forum: Towards a Leading Region in the Response to the Climate Emergency and Energy Transition

Many of the natural, economic and sociocultural assets of Southern Catalonia are compromised by the climate emergency and the necessary green energy transition that must take place. At the same time it may also become a region replete with opportunities for the future: a prominent European laboratory for the climate emergency and green energy transition.

To make this possible, the stakeholders belonging to the quadruple helix (civil society, socioeconomic agents, universities, and political actors and administrations in the region) must work together, with a firm, long-term commitment to future generations.

The purpose of the Forum is to initiate the joint mobilisation of agents and experts from Southern Catalonia on the climate emergency and green energy transition. The meeting should constitute a starting point for a strategic regional platform for the future of the region. The objectives of the Forum are:

- To share an overview of the global and regional situation.

08.30-09.00 Registration

09.00-09.15 Introduction

María José Figueras, rector of Rovira i Virgili University

Noemí Llauredó, president of the Provincial Council of Tarragona

09.15-09.45 **The State of the Global Situation and in Southern Catalonia.** Presentation of the Report *Special Report on Climate Change and Land* (2019), drafted by the Intergovernmental Panel on Climate Change

Marta G. Rivera-Ferré, director of the Agroecology and Food Systems Chair of the University of Vic (UVic)

- To establish the fundamental issues to which Southern Catalonia must respond.
- To become aware of existing initiatives directed at resolving these issues.
- To envisage the regional missions that must be taken on together in the future.
- To create an initial core group of key stakeholders for a regional platform.
- To sign a commitment agreement to which other stakeholders can be added.

Representatives, experts and professionals from the university, civil society, socioeconomic agents, businesses, administrations and politicians of the region are invited to participate. The group of participants is necessarily limited given the participatory format and restricted space. This will be expanded later within the framework of the Regional Strategic Platform through the creation of thematic interest groups (agri-food, energy and mobility, health and welfare, etc.).

The sponsors of the Forum are the URV, as the primary medium of knowledge in southern Catalonia, and the Provincial Council of Tarragona, as the supramunicipal agency that brings together all of the municipalities in the region. Both institutions are committed to acting as catalysts for the regional ecological, energy and climate transition prioritised in the Southern Catalonia 2040 initiative, within the framework of the Southern Catalonia Knowledge Region.

09.45-10.30 Roundtable panel

Moderator: Francesc Díaz, vice-rector of research and scientific planning of the URV
Manola Brunet, professor in the URV's Geography Department and chair of the Commission for Climatology (CCL) of the World Meteorological Organisation (WMO)
Òscar Saladié, director of the URV-Dow Chair for Sustainable Development
Assumpta Farran, member of the board of the Renewable Energies Foundation
Francesc Barbero, mayor of Flix
Marc Castellnou, head of the Forestry Action Support Group (GRAF) of the Government of Catalonia's fire service
Artur Serra, joint director of Fundació i2cat, head of digital society

10.30-11.30

Dialogue and fundamental questions: the Ribera d'Ebre situation, energy and mobility, the environment and natural resources, sustainable economy, agri-food, rural development, etc.

- What are the pressing issues in the region that need to be addressed?
- What are the fundamental issues that Southern Catalonia needs to respond to?
- What strategic opportunities are there in the region?

11.30-12.00

Coffee and networking break

12.00-14.00

Piloting the Southern Catalonia's Response to The Climate Emergency and Green Energy Transition

Group work and sharing

Experiences in Southern Catalonia

- What experiences in the region are already responding to the fundamental issues posed above? Are there opportunities for expansion? What is required?
- Are there actions that can be included in upcoming Territorial Competitiveness and Specialization Projects (PECT) in Southern Catalonia?

Strategic Missions of Southern Catalonia

The European Union is using missions in its future plans and programmes as the tools around which, at a regional level (and in networks of regions), a set of actors come together to work together on specific challenges.

- What are the imminent missions that Southern Catalonia might formulate considering its assets, challenges and opportunities? Who wants to participate in them? Which existing actions can already be part of these missions?

14.00-14.30 Conclusions of the conference

14.30 Lunch (buffet)

The speakers



Thomas Peterson. A retired U.S. research scientist, his work focuses on building global climate datasets and then using the data to better understand how the climate is changing. In addition to participating in both national and global climate assessments such as the IPCC (The Intergovernmental Panel on Climate Change), he was elected chair of the World Meteorological Organisation's Commission for Climatology.

Manola Brunet. A recognised international expert in instrumental climate reconstruction and in the analysis of the climate on different spatial and temporal scales. She has been a pioneer in analysing long-term changes in air temperature in peninsular Spain, and has played an important role in evaluating how climatic extremes change in a warmer world both globally and regionally. She is a professor of geography at URV and chair of the CCI - WMO.



Clare Goodess. Senior research fellow and manager of the University of East Anglia's Climatic Research Unit (Norwich, UK), Clare is one of the world's leading specialists on the development and use of regional climate change projections and scenarios, working at the interface between climate modellers and users of climate information. This means she now plays a leading role in the development of climate services worldwide.

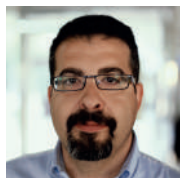
Carles Ibàñez. Researcher in the Marine and Continental Waters Programme of the Institute of Agricultural and Food Research and Technology. Carles Ibàñez holds a doctorate in biology from the UB, and has 30 years' experience in research in the fields of aquatic, coastal and marsh ecology, and sustainable management of aquatic resources and environmental management. He is a member of the Government of Catalonia's Advisory Council for Sustainable Development.



Enric Aguilar. An expert in climate data quality and homogeneity and the analysis of climate change indicators. He has taught and published on the subject and studied world datasets. He works in the field of climate services as the principal investigator of the INDECIS project, and led the team that defined the professional competences necessary for the provision of climate services. He is a senior lecturer and the director of the Department of Geography at URV.

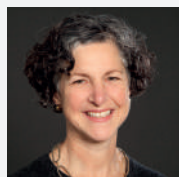
Sonia Quiroga. A professor of economics at the University of Alcalá de Henares in Spain, Sonia's research focuses on the quantitative relations of climate, water, weather and the economy and particularly the economic benefit of hydro-meteorological information and climate services. She has contributed to a range of internationally funded R&D projects (EU, WMO, World Bank, UNFCCC, UNECE FAO, etc.) and has communicated her findings in a number of recognised research journals.





Juan Antonio Duro. A professor of economics, the director of the Department of Economics and the director of the Chair for Local and Regional Economy at URV. His research career has resulted in the publication of over 60 scientific articles. He specialises in the economics of tourism and the environment, and his research has also addressed the metrics and modelling of sustainability on an international scale and, more recently, on aspects of environmental policy.

Simone Abram. Researcher in the Department of Anthropology at Durham University (UK), where she directs the Master's in Energy and Society and co-directs the Durham Energy Institute. She will also be a researcher at the National Centre for Energy Systems Integration until 2021. Her research focuses on three areas: energy, the anthropologies of planning, and governance and tourism. She is currently working on a research project focusing on Arctic travel writing and tourism.



Joan Batalla. The general director of the Foundation for Energy and Environmental Sustainability, which he combines with research at the Chair of Energy Sustainability and teaching at the University of Barcelona. He built his professional career at the Spanish National Energy Commission and has 20 years' experience in the field of economics, industry and energy. He holds a degree in economics from the UB, a doctorate in economics and a special doctoral award from the URV.

Manel Torrent. An industrial engineer from the Barcelona School of Industrial Engineering and holder of an international executive MBA specialising in energy sector companies from the School for Industrial Organisation. He is the director of the of the Government of Catalonia's Catalan Energy Institute, where he coordinates the promotion and development of projects related to power generation efficiency, renewable facilities, biomass and energy efficiency in all areas.



Pim de Boer. A pathobiologist, Pim de Boer has been senior researcher at the Paris XII University and Leiden University Medical Center, assistant professor of Pulmonology at the Erasmus University Medical Center, Rotterdam), and head of research and grants at the Dutch Asthma Foundation. Since 2019 he has been EU liaison/policy advisor in Brussels for Amsterdam University Medical Center and the VU University Amsterdam.

Marta G. Rivera-Ferré. Director of the University of Vic's Chair in Agroecology and Food Systems. A doctor of veterinary medicine and sociology, she is a multidisciplinary expert in the analysis of agri-food systems, particularly in the interactions between agriculture, foodstuffs, society and the environment, with emphasis on adapting to climate change and food security and food sovereignty. She has taken part in two UN panels as lead author.





UNIVERSITAT ROVIRA i VIRGILI