

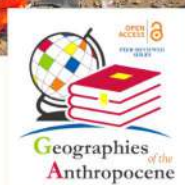
THE CLIMATE CRISIS IN MEDITERRANEAN EUROPE:

CROSS-BORDER AND MULTIDISCIPLINARY ISSUES ON CLIMATE CHANGE

Jonathan Gómez Cantero - Carolina Morán Martínez
Justino Losada Gómez - Fabio Carnelli
(Editors)



IL Sileno
Edizioni



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Jonathan Gómez Cantero, Carolina Morán Martínez, Justino Losada Gómez, Fabio Carnelli (Eds.)

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Cover: the set of photos shows different causes and effects of climate change.
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The book series “Geographies of the Anthropocene” edited by Association for Scientific Promotion “Il Sileno” (Il Sileno Edizioni) will discuss the new processes of the Anthropocene epoch through the various worldviews of geoscientists and humanists, intersecting disciplines of Geosciences, Geography, Geoethics, Philosophy, Socio-Anthropology, Sociology of Environment and Territory, Psychology, Economics, Environmental Humanities and cognate disciplines.

Geoethics focuses on how scientists (natural and social), arts and humanities scholars working in tandem can become more aware of their ethical responsibilities to guide society on matters related to public safety in the face of natural hazards, sustainable use of resources, climate change and protection of the environment. Furthermore, the integrated and multiple perspectives of the Environmental Humanities, can help to more fully understand the cultures of, and the cultures which frame the Anthropocene. Indeed, the focus of

Geoethics and Environmental Humanities research, that is, the analysis of the way humans think and act for the purpose of advising and suggesting appropriate behaviors where human activities interact with the geosphere, is dialectically linked to the complex concept of Anthropocene.

The book series “Geographies of the Anthropocene” publishes online volumes, both collective volumes and monographs, which are set in the perspective of providing reflections, work materials and experimentation in the fields of research and education about the new geographies of the Anthropocene.

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The volume proposals can be presented in English, Italian, French or Spanish.

The choice of digital Open Access format is coherent with the flexible structure of the series, in order to facilitate the direct accessibility and usability by both authors and readers.

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Introduction

*Jonathan Gómez Cantero*¹, *Carolina Morán Martínez*², *Justino Losada Gómez*³, *Fabio Carnelli*⁴

Climate change has become an issue on a global scale that has directly affected nature, economy and society for several decades. The rhythm of its impact has increased in recent years and a multitude of many extreme phenomena have already been found to have a great correlation with rising temperatures on the planet.

For this reason, the concept of climate crisis has been used for a long time as a warning of the new reality which we are experiencing. Media have helped to spread this idea in society, and people around the world already frame the problem in these terms.

The scientific and academic world have been working for a long time on climate change studies, and especially on the future impact. This is why the number of works that refer to verified impacts is increasing.

The European Union has been involved in taking measures to attempt to reduce greenhouse gas emissions by at least 40% (compared with 1990) in 2030 according to the Paris Agreement of 2015. However, though an increasing growth of knowledge and understanding produced by the scientific community, our societies seem reluctant to change and still unable to address this issue in the proper way.

From Environmental Law to Meteorology, going through Sociology, Geography, Engineering, Economics, Anthropology or Political Sciences, we need all disciplines to understand how Europe will be affected on all its territory and how we could effectively tackle the climate crisis. At first, we should understand which factors are decisive for supporting or reversing inaction, driven by socio-cultural, institutional, emotional and historically reproduced patterns. Furthermore, we should identify the root causes of

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different kind of vulnerabilities, sometimes hidden or implicit, to address climate change in terms of climate (in)justice production and reproduction. In this way, societies can manage the new horizon of climate change and associated risks in the best possible way.

In this volume of the book series "Geographies of the Anthropocene" entitled "*The climate crisis in Mediterranean Europe: cross-border and multidisciplinary issues on climate change*", we sought to bring together a holistic and cross-sector vision of different aspects of the climate crisis.

The main objective that supports this multidisciplinary purpose is the collection of experiences and knowledge of all research fields involved in the promotion of a certain theoretical discussion. This can both help for a better understanding about the consequences of climate change from a cross-border perspective and to turn this reflection into effective climate change mitigation and adaptation application for adequate policies and practices.

For this reason, the volume aims to show the contributions of the different dimensions of climate change, closely linked to several topics such as risk perception, education, environmental justice, biodiversity and air pollution, management policies (natural resources, global waste management and illegal business), migration policies, possible future events, the role of agriculture and possible mitigation strategies, current scenarios within adaptation and mitigation policies, and practices of adaptation and mitigation with a potentially integrated overview in order to balance past scenarios and the current climate change in Europe, especially in the Mediterranean basin which is one of the most affected of the entire continent.

This issue also has a multidisciplinary purpose and collects experiences and knowledge from different research areas involved in the production of certain theoretical discussions and case studies.

Among the different contributions received, there are several both theoretical and empirical studies concerning diverse topics related with the climate crisis in the Mediterranean. They deal with contaminant emissions, social and population dynamics within borders, education and perception of climate change by teenagers, the extension of alien vegetation in European ecosystems, or the current models of natural and agrarian management.

According to these points It becomes necessary to collaborate from diverse standpoints in order to achieve a better consciousness from our societies. This is why we think social participation that becomes gradually more important, can assume the Paris Agreement in order to help to reduce

greenhouse gas emissions, as a manner to mitigate the climate crisis in the Mediterranean basin.

We also believe this book could be targeted for a wide range of scientists and humanists, as well as for those in charge of politics or manage the environment, in order to promote a discussion in which different scientific, politic and social stakeholders could rise awareness on the causes and effects of this global issue.

In order to overcome this crisis, it is mandatory to identify the real goals that allow social participation to make sustainable politics possible. This would both increase the quality of life of our societies and at the same time reduce our harmful actions to climate risk.

The coming decades are essential to achieve the objectives of the Paris Agreement, which establishes that the average temperature of the planet should not rise more than 2°C and as far as possible should stay at a 1.5°C increase. There are already many studies and measurement networks which show that the average temperature of the planet has already risen around 1°C and with the amount of gases that we have accumulated and the inertia of the climate itself, this rise will exceed 1.5°C in a few years.

For this reason, communities must be prepared. Climate change adaptation and mitigation measures should be already practically mandatory in practice. We are already suffering the impacts and now it is the time for the scientific community to work together towards a common goal.

We live more than ever in a globalized world where recent crises, such as COVID-19, which have devastated some countries in Europe, have made this evident. The issues that one country has may have repercussions in another and, therefore, it has become a necessity to develop working groups, not only multidisciplinary but also cross-border ones. The pressure that we exert on nature, consuming resources or emitting greenhouse gases, will put us in the next decades in much more complicated circumstances, including health problems due to new diseases or viruses.

For these reasons, we should address all the intertwined dimensions that make the climate crisis the most shocking and devastating disturbance at all known social-ecological levels, from our perception and psycho-cultural understanding, to our socio-economic vulnerabilities, from our legal, economic and policy thinking to our biophysical habitat: the prerequisites for our existence as human beings are at stake and should be faced by questioning – now - as many dimensions and disciplines as possible.

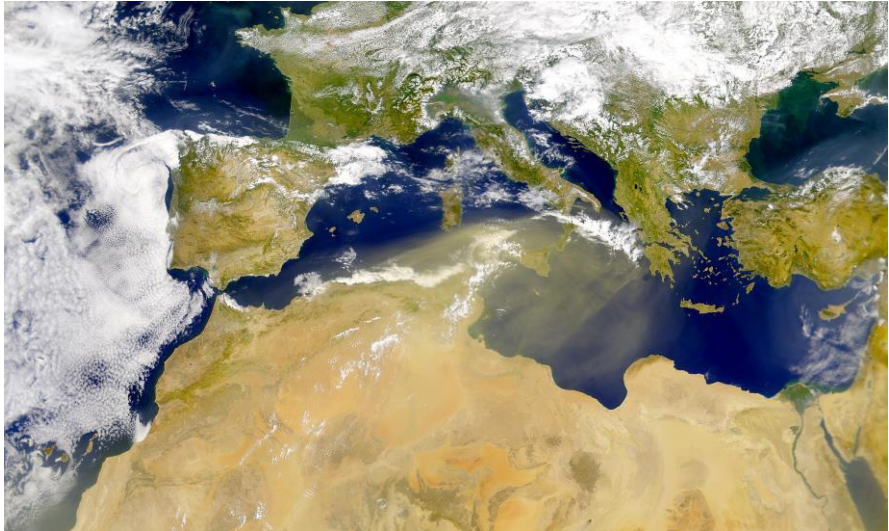


Figure 1 - *Desert dust crossing the Mediterranean.* Source: Provided by the SeaWiFS Project, NASA/Goddard Space Flight Center, and ORBIMAGE.

Introducción

*Jonathan Gómez Cantero*¹, *Carolina Morán Martínez*², *Justino Losada Gómez*³, *Fabio Carnelli*⁴

El cambio climático se ha convertido en un problema de escala global que afecta de forma directa a la naturaleza, la economía y la sociedad desde hace ya varias décadas. El ritmo de los impactos ha aumentado en los últimos años y ya se han constatado multitud de fenómenos extremos que muestran una gran correlación con el aumento de las temperaturas del planeta.

Por este motivo, ya se utiliza desde hace tiempo el concepto de crisis climática, como advertencia de la nueva realidad que estamos asumiendo. Los medios de comunicación han contribuido a trasladar este concepto a la sociedad, y ya, en prácticamente todo el planeta, se habla en estos términos.

En el mundo científico y académico se lleva mucho tiempo trabajando en los estudios de cambio climático y muy especialmente en sus impactos en el futuro, pero cada vez son más los trabajos que hacen referencia a impactos constatados.

La Unión Europea ha participado en la adopción de medidas para intentar reducir las emisiones de gases de efecto invernadero en al menos un 40% en 2030 en conformidad con el Acuerdo de París de 2015. Sin embargo, a pesar de un crecimiento del conocimiento y la comprensión producidos por la comunidad científica, nuestras sociedades parecen resistentes para cambiar y todavía no puede abordar este problema de la manera adecuada.

Desde el Derecho Ambiental a la Meteorología, pasando por la Sociología, la Geografía, la Ingeniería, la Economía, la Antropología o la Política, necesitamos todas las disciplinas para comprender cómo Europa se verá afectada en todo su territorio y cómo podríamos abordar la crisis climática de manera efectiva. Es decir, debemos entender qué factores son decisivos para apoyar o revertir la inacción, impulsados por patronessocioculturales, institucionales, emocionales históricamente ocurridos. Además, debemos

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identificar las causas profundas de diferentes tipos de vulnerabilidades, a veces ocultas o implícitas, para abordar el cambio climático en términos de producción y reproducción con (in)justicia climática. De esta manera, las sociedades pueden gestionar el nuevo horizonte del cambio climático y los riesgos asociados de la mejor manera posible.

En este número de la revista “Geographies of the Anthropocene” titulado “La crisis climática en la Europa mediterránea: cuestiones transfronterizas y multidisciplinarias sobre el cambio climático” se ha querido reunir una visión holística y de conjunto de distintos aspectos de la crisis climática.

El objetivo principal que respalda este propósito multidisciplinar es la recopilación de experiencias y conocimientos de todos los campos de investigación involucrados en la promoción de una cierta discusión teórica que pueda ayudar a comprender mejor las consecuencias del cambio climático desde una perspectiva transfronteriza y convertir esta reflexión en aplicaciones efectivas de mitigación y adaptación al cambio climático para políticas y prácticas adecuadas.

Por esta razón, el volumen tiene como objetivo mostrar las contribuciones de las diferentes dimensiones de los problemas del cambio climático, estrechamente vinculados a diferentes temas: percepción del riesgo, educación, justicia ambiental, biodiversidad y contaminación del aire, políticas de gestión (recursos naturales, gestión global de residuos y negocios ilegales), políticas de migración, posibles eventos futuros, el papel de la agricultura y posibles estrategias de mitigación, escenarios actuales dentro de las políticas de adaptación y mitigación y prácticas de adaptación y mitigación con una perspectiva potencialmente integrada para el equilibrio de los escenarios pasados y el cambio climático actual en Europa, especialmente en la cuenca mediterránea, que es una de las más afectadas de todo el continente.

Este número además tiene un propósito multidisciplinar y recopila experiencias y conocimientos de diversos campos de investigación involucrados en la producción de cierta discusión teórica. Esto puede ayudar a comprender mejor las consecuencias del cambio climático desde una perspectiva transnacional y transfronteriza, además de ayudar en aplicaciones efectivas de mitigación y adaptación para políticas y prácticas adecuadas y conseguir los objetivos de lucha contra el cambio climático que vienen marcados en el Acuerdo de París.

Entre los trabajos que se han aportado se encuentran estudios teóricos y de aplicación práctica que versan sobre diferentes aspectos relacionados con la crisis climática en la Europa Mediterránea, como su relación con la emisión de contaminantes, las dinámicas sociales y de población en áreas de frontera,

la educación y percepción del cambio climático por parte de los jóvenes, la extensión de la vegetación invasora en ecosistemas europeos, o los modelos de gestión natural y agrícola asociados.

Teniendo en cuenta estos enfoques, resulta necesario colaborar desde diversos enfoques para una mayor conciencia en nuestras sociedades. Así confiamos en que gradualmente, se participe activamente según los Acuerdos de París, ayudando de forma justa y equitativa a la mitigación de las emisiones de gases de efecto invernadero y, por tanto, a la crisis climática en la cuenca mediterránea.

Por ello, consideramos que estos trabajos también pudieran resultar de interés para un amplio grupo de científicos y humanistas, así como para las políticas para gestionar el medio ambiente y su conocimiento, en tanto en cuanto se pretende promover un modesto debate en el que la participación de los diferentes actores científicos, políticos y sociales, encargados de la toma de decisiones sean conscientes del combate a las causas y a los efectos de este fenómeno global.

Para alcanzar tales objetivos resulta obligatorio identificar las diversas opciones y oportunidades que permiten la participación social a la hora de instrumentalizar políticas sostenibles que favorezcan una serie de beneficios en la mejora de la calidad de vida de nuestra sociedad, al mismo tiempo que colaboramos reduciendo acciones nocivas para nuestro medio ambiente, como las emisiones de gases de efecto invernadero.

Las próximas décadas son clave para conseguir los objetivos del Acuerdo de París, en el que se establece que la temperatura media del planeta no deberá subir en más de 2°C y, en la medida de lo posible, quedarse en un aumento de 1,5°C. Son ya muchos los estudios y redes de medición que muestran que la temperatura media del planeta ya ha subido en torno a 1°C y que, con la cantidad de gases que tenemos acumulados y la propia inercia del clima, habremos sobrepasado los 1,5°C en pocos años.

Por ello, las sociedades deben de estar preparadas. Las medidas de adaptación y mitigación del cambio climático son ya prácticamente de obligado cumplimiento. Los impactos ya los estamos sufriendo y es ahora cuando el colectivo científico tiene que trabajar en conjunto y unido.

Vivimos más que nunca en un mundo globalizado y donde recientes crisis, como la del COVID-19 que ha asolado algunos países de Europa, lo han puesto de manifiesto. El problema que tenga un país puede repercutir en otro y, por ello, hay que intentar tener grupos de trabajo, no sólo multidisciplinares sino también transfronterizos. La presión que ejercemos sobre la naturaleza consumiendo sus recursos o emitiendo gases de efecto invernadero podrá

ponernos en las próximas décadas en tesituras mucho más complicadas, incluyendo la salud, pues nuevas enfermedades o virus.

Por estas razones, debemos abordar todas las variables interconectadas que hacen que la crisis climática sea la perturbación más impactante y devastadora en todos los niveles socioecológicos conocidos; desde nuestra percepción y comprensión psicocultural, hasta nuestras vulnerabilidades socioeconómicas, desde nuestra situación legal, pensamiento económico y político para nuestro hábitat biofísico: los requisitos previos para nuestra existencia como seres humanos deben enfrentarse cuestionando, ahora, tantas dimensiones y disciplinas como sea posible.

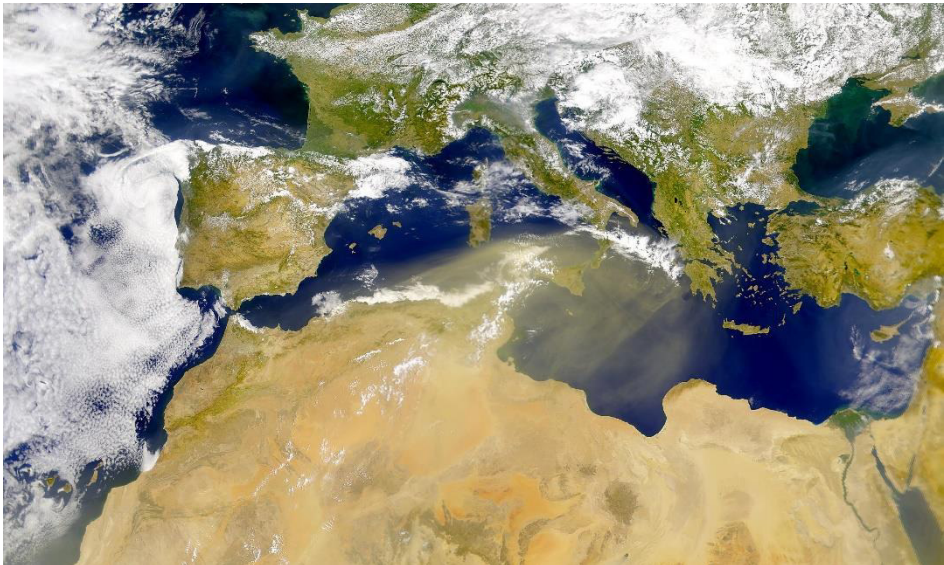


Figura 1 - *Polvo del desierto cruzando el Mediterráneo*. Fuente: proporcionada por el proyecto SeaWiFS, NASA / Goddard Space Flight Center y ORBIMAGE.

Introduzione

Jonathan Gómez Cantero¹, Carolina Morán Martínez², Justino Losada Gómez³, Fabio Carnelli⁴

Il cambiamento climatico è ormai diventato un problema globale che da diversi decenni sta impattando direttamente sulla natura, sull'economia e sulle società. Il ritmo degli impatti è aumentato negli ultimi anni ed è già stata osservata una correlazione fra una moltitudine di eventi estremi e l'aumento delle temperature globali.

Per questi motivi, si utilizza ormai da tempo il concetto di crisi climatica, come avvertimento sulla nuova realtà di cui stiamo facendo esperienza. I media hanno contribuito a trasmettere questo concetto alla società civile e se ne parla in questi termini praticamente in ogni luogo del pianeta.

Il mondo scientifico e accademico lavorano da tempo sullo studio del cambiamento climatico e soprattutto sui suoi impatti futuri, e per questo si lavora sempre di più sulla questione degli impatti verificati.

L'Unione Europea ha promosso l'adozione di misure per cercare di ridurre le emissioni di gas serra almeno del 40% (rispetto al 1990) entro il 2030 in conformità con l'Accordo di Parigi del 2015. Tuttavia, nonostante la crescita delle conoscenze e della comprensione prodotta dalla comunità scientifica, le nostre società appaiono resistenti ai cambiamenti e non sono ancora in grado di affrontare questo problema in modo adeguato.

Dal diritto ambientale alla meteorologia, passando per la sociologia, la geografia, l'ingegneria, l'economia, l'antropologia o le scienze politiche, abbiamo bisogno di ogni disciplina per comprendere come l'Europa sarà colpita sul suo territorio e come possiamo affrontare efficacemente la crisi climatica. In altre parole, dobbiamo capire quali sono i fattori decisivi per sostenere o invertire l'inazione, guidati da modelli socio-culturali, istituzionali, emotivi, storicamente riprodotti. Inoltre, dobbiamo identificare le cause prime alla radice dei diversi tipi di vulnerabilità, a volte nascoste o implicite, per poter affrontare il cambiamento climatico in termini di

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produzione e riproduzione di (in)giustizia climatica. In questo modo le società possono gestire al meglio il nuovo orizzonte del cambiamento climatico e dei rischi ad esso associati.

In questo volume della serie “Geographies of the Anthropocene” dal titolo “La crisi climatica nell’Europa mediterranea: questioni multidisciplinari, a scala transfrontaliera, sul cambiamento climatico” abbiamo cercato di restituire una visione olistica e trasversale dei diversi aspetti della crisi climatica.

L’obiettivo principale di questa finalità multidisciplinare è quello di promuovere esperienze e conoscenze da tutti i campi di ricerca coinvolti nella promozione di una certa discussione teorica. Questa può aiutare a comprendere meglio le conseguenze del cambiamento climatico da una prospettiva transfrontaliera e a trasformare questa riflessione in applicazioni efficaci di mitigazione e adattamento al cambiamento climatico per politiche pubbliche e pratiche appropriate.

Per questo motivo, il volume si propone di mostrare i contributi alle diverse dimensioni di alcune questioni inerenti al cambiamento climatico, che sono strettamente legate a diversi temi: percezione del rischio, educazione, giustizia ambientale, biodiversità e inquinamento atmosferico, politiche di gestione (risorse naturali, gestione globale dei rifiuti e business illegali), politiche migratorie, possibili eventi futuri, ruolo dell’agricoltura e possibili strategie di mitigazione, scenari attuali nell’ambito delle politiche di adattamento e mitigazione e pratiche di adattamento e mitigazione con una prospettiva potenzialmente integrata fra scenari passati e cambiamenti climatici attuali in Europa, soprattutto nel bacino del Mediterraneo, uno dei più colpiti dell’intero continente.

Questo volume ha anche una finalità multidisciplinare e raccoglie esperienze e conoscenze provenienti da vari campi di ricerca coinvolti nella produzione di alcune discussioni teoriche e casi studio.

Tra i lavori che hanno contribuito a questo volume ci sono studi teorici ed empirici che affrontano diversi aspetti legati alla crisi climatica dell’Europa mediterranea, come il rapporto con l’emissione di sostanze inquinanti, le dinamiche sociali e demografiche nelle zone di confine, l’educazione e la percezione del cambiamento climatico da parte degli adolescenti, l’estensione della vegetazione invasiva negli ecosistemi europei, o i modelli di gestione naturale e agricola associati.

Tenendo conto di queste questioni, è necessario collaborare da diversi approcci per promuovere una maggiore consapevolezza nelle nostre società. Per questo pensiamo che la società civile, che diventa gradualmente sempre più importante, possa accogliere l’accordo di Parigi per contribuire a ridurre

le emissioni di gas serra - come uno dei modi per mitigare la crisi climatica nel bacino del Mediterraneo.

Riteniamo, quindi, che questo lavoro possa interessare anche un ampio gruppo di scienziati e umanisti, nonché la politica e chi gestisce le politiche ambientali, nella misura in cui mira a promuovere un dibattito in cui la partecipazione dei diversi attori scientifici, politici e sociali possa aumentare la consapevolezza nella lotta contro le cause e gli effetti di questo insieme di processi globali.

Per gestire questa crisi è necessario individuare i reali mezzi che permettano alla società civile di influenzare politiche realmente sostenibili, che favoriscano allo stesso tempo la qualità della vita della nostra società, riducendo così l'insieme delle azioni dannose per l'ambiente.

I prossimi decenni sono fondamentali per raggiungere gli obiettivi dell'Accordo di Parigi, che stabilisce che la temperatura media del pianeta non debba superare i 2°C e, per quanto possibile, rimanere ad un aumento di 1,5°C. Esistono molti studi e ricerche che dimostrano come la temperatura media del pianeta sia già aumentata di circa 1°C e che, con la quantità di gas che abbiamo accumulato e l'inerzia stessa del clima, supereremo 1,5°C in pochi anni.

Pertanto, le comunità devono essere preparate. Le misure di adattamento e di mitigazione del cambiamento climatico dovrebbero essere ormai praticamente obbligatorie. Ne stiamo già subendo gli impatti ed è ora che la comunità scientifica debba lavorare insieme per un comune obiettivo.

Viviamo più che mai in un mondo globalizzato e le recenti crisi, come quella del COVID-19 che ha devastato alcuni Paesi europei, lo hanno reso evidente. Il problema che un Paese ha può avere ripercussioni su un altro e, quindi, è necessario avere gruppi di lavoro, non solo multidisciplinari, ma anche transfrontalieri. La pressione che esercitiamo sulla natura consumando le sue risorse o emettendo gas a effetto serra può metterci in una situazione molto più complicata nei prossimi decenni, anche in termini di salute, favorendo la comparsa di nuovi virus o malattie.

Per queste ragioni, dobbiamo affrontare tutte le variabili interconnesse che rendono la crisi climatica il disturbo più sconvolgente e devastante a tutti i livelli socio-ecologici conosciuti; dalla nostra percezione e comprensione psicologica e culturale, alle nostre vulnerabilità socio-economiche, dal nostro pensiero giuridico, dal pensiero economico e politico fino al nostro habitat biofisico: sono in gioco i prerequisiti della nostra stessa esistenza come esseri umani, che devono essere affrontati mettendo in discussione, ora, quante più dimensioni e discipline possibili.

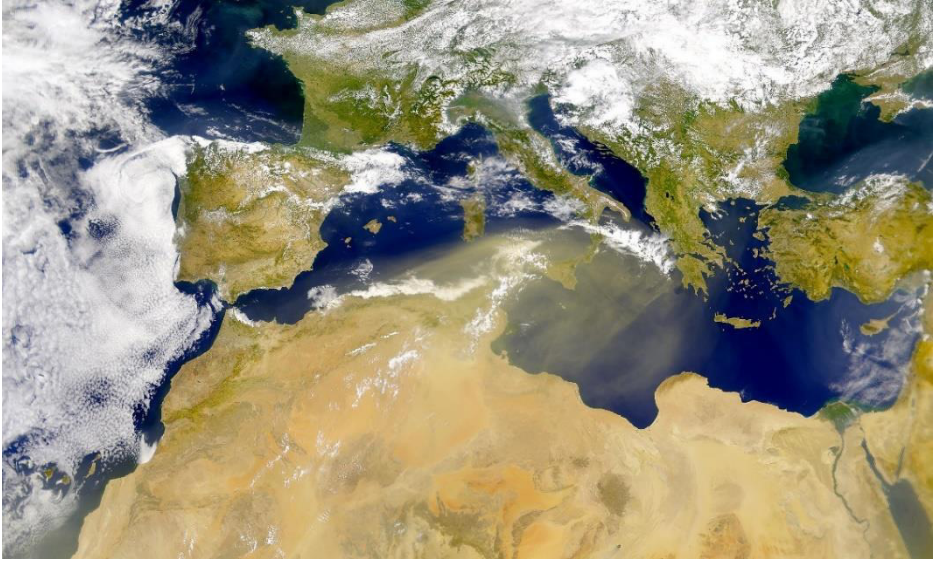


Figura 1 - *Polvere del deserto attraversando il Mediterraneo.* Fonte: fornito dal progetto SeaWiFS, NASA / Goddard Space Flight Center e ORBIMAGE.

“The climate crisis in Mediterranean Europe: cross-border and multidisciplinary issues on climate change” collects 8 original essays by different authors concerning socio-environmental issues related to climate change in a historical border area of Southern Europe. This volume, fostering the current scientific debate on the consequences of climate change, becomes a valuable element for its better understanding from a multidisciplinary perspective, as it shows several studies both theoretical and empirical on different topics: contaminant emissions, social and population dynamics across borders, education and perception of climate change by teenagers, the diffusion of alien vegetation in European ecosystems, and current models of natural and agrarian management. These topics put forward the facets of a complex multiscale process, which requires a necessary discussion between different scientific, political and social stakeholders. We need now to achieve a better collective awareness about the vulnerabilities arising and threatened by climate change in the Mediterranean Basin.

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