The Fourth International Congress on Desert Economy - ENCG, Dakhla, Morocco:

“International scientific research collaboration for arid lands and desert development”


The National School of Business and Management - Dakhla. ENCG Dakhla.

Dakhla, Morocco.

Table of Contents

1. Purpose and scope of The International Congress on Desert Economy – Dakhla, Morocco.
2. Organizing committee.
3. Argument by Dr. Elouali Aailal.
4. Scientific committee.
5. Call for Papers.
6. Author guidelines.
7. PhD
8. Sahara Desert Excursion.
9. About this Congress.
10. The "Théodore Monod Desert Award" project.

1- Purpose and scope of The International Congress on Desert Economy – Dakhla, Morocco.

Think globally, act locally.

The International Congress on Desert Economy – ENCG, Dakhla, Morocco (ICDED), is the pioneer and the first worldwide scientific research meeting on arid lands, the Sahara, and desert economic development (R&D), whose approach is to think globally
The ultimate purpose of The International Congress on Desert Economy - Dakhla, is to be an interdisciplinary scientific research platform on the desert, arid lands, and the Sahara (hot drylands, hyperarid or semi-arid regions, oasis and remote rural areas) economy, management, and development (rural development), in order to contribute effectively to the good governance and in the sustainable development of arid lands worldwide, by attracting and promoting investment opportunities in the Sahara and deserts, and by stimulating meetings between all stakeholders on a global scale: Academics, Professionals, Policy-Makers, Civil society and NGOs..., with a view to fostering dialog, partnership, and cooperation among desert countries worldwide: Africa and the Gulf States (the MENA and the Sahel...), the United States of America, Australia, China, India, South America..., with the aim of valuing and promoting the desert knowledge and its related studies' and conferences' findings and recommendations, and creating a conducive environment to the exchange of experiences, expertise, trainings, educational practices and innovation, around themes related to the desert economy and to the arid lands management, such as Tourism, travel industry and tourism economics; Livestock economics, management, and production; Agriculture, aquaculture, and agricultural economics (rural economics); The Economics of water, drought and water scarcity management; Renewable energy, energy economics, and energy management; Mining and natural resource management; Transportation and logistics; Fisheries, maritime, sea, and ocean economy; Economics of space (space economy) and space industry; Technology and innovation; Water sports and entertainment, sports economy and sports management; Cultural and creative industries, tangible and intangible heritage; Biodiversity, wetlands, environment, and nature conservation and management...Thus, each year, an edition will be organized.

Besides the main theme of this fourth edition entitled “International scientific research collaboration for arid lands and desert development”, it will also be devoted to addressing general issues on the desert (Sahara) economy management and its sustainable development.

2- Organizing committee.

Dr. Elouali AAILAL: President and Coordinator of the International Congress on Desert Economy. Dakhla

President of the "Desert Action" Association, Dakhla. Morocco.

Members:

- Elouali Aailal. Research Professor at the ENCG of Dakhla.
Aziz Sair. Director of the National School of Business and Management, ENCG Dakhla. Morocco.

Juan Manuel Benitez. Dean of the Faculty of Economics, Business, and Tourism. University of Las Palmas de Gran Canaria, Spain.

Kaoutar Roussi. Research Professor at the ENCG of Dakhla.

Hajar El Moukhi. Research Professor at the ENCG of Dakhla.

Mehdi Boutaounte. Research Professor at the ENCG of Dakhla.

Youssef Hanyf. Research Professor at the ENCG of Dakhla.

Lahoucine Assellam. Research Professor at the ENCG of Dakhla.

Salek Riadi. Research Professor at the EST of Laâyoune

Mohamed Er-Raji. Research Professor at the ENCG of Dakhla.

3- Argument. By Dr. Elouali AAILAL.

Intensifying humankind's work in scientific research collaboration on deserts and arid lands has at least two significant payoffs. The first benefit is tied up with our quest to explore, exploit (mining and raw materials), and colonize outer space, thus to our future in the medium and long term. The second interest is linked to our current urgent concerns on Earth.

In order to boost the chances of a successful human settlement in outer space, and due to the unbearable cost of real experimentation in outer space, it would be suitable to get to know well and study our Earthian deserts. In fact, till now, explored planets are deserts and arid lands, hopefully, this will not be the case forever, but these planets fit the definition of arid lands. Considering its similarities with outer space deserts make space simulations on Earth's deserts reasonably affordable. Not only do we need to broaden scientific and technological research on deserts to be ready to do the same in outer space, but we also need to dig deeper into the research on the desert economy, desert wealth and resources, and desert management. Since it is a valuable shortcut in the way of understanding what might be the economics of space (space economy and space industry)? Actually, several activities related to space economics have already begun, like space tourism and space field stations' related business (launch centers, experimentation and simulation desert field stations).

A potential giant leap in the direction of exploration and conquest of outer space and the exploitation of its resources might lead us to review the most evident postulates and assumptions on which are based our economic systems, and it could even lead to turning them upside down. For instance, what would be our reaction regarding the concept of scarcity if we came upon a massive planet that consists of a large percentage of one of the minerals that we consider rare on Earth (gold, for example)? What are the most striking and provocative transformations that may arise in our economies if such a scenario becomes a reality?

In an international context marked by an expansion in the area of the desert (desertification) and drylands due to drought and climatic changes, the second payoff of strengthening international scientific research on arid lands is stimulating its sustainable development. It would also help in successfully coping with some pressing global challenges that we face
today on Earth, such as water scarcity (water stress), energy crisis, and food insufficiency (food security).

Coastal deserts (Moroccan Sahara Atlantic deserts, for instance) are the perfect place where projects incorporating the nexus of water, energy, and food are more sustainable, reliable, and economically affordable. Indeed, coastal deserts fulfill four encouraging features: the proximity to the ocean or the sea, a constant high amount of solar radiation throughout the year, very often a steady and powerful blowing wind, combined with the fact that the soil of these littoral deserts is commonly fertile. Such distinguishing traits will make cost competitive the feed and foods grown from desert agriculture (desert farming) irrigated by desalinated seawater using solar or wind energies. From the previous motivating insights, we conclude that federating the efforts of scientific research institutions, universities, and organizations from different countries all around the world on these challenging vital issues is the rigorous and most effective approach to shift it into promising opportunities in the service of desert development and humanity.


4- Scientific committee.

- **Aziz Sair.** Director of the National School of Business and Management, ENCG Dakhla. **Morocco.**
- **Keith W. Martin.** Founding member of The Sahara Spirit Foundation. **Morocco.** Member of the Rotary International committee. **United States of America.**
- **Sharon Megdal.** President of the International Arid Lands Consortium. Director of the University of Arizona Water Resources Research Center (WRRC). Arizona. **United States of America.**
- **Paul Van Son.** President & CEO of the DESERTEC Industrial Initiative. Desert Energy. Honorary President of the European Federation of Energy Traders (EFET). **Germany.**
- **Nasir El Bassam.** Director of the International Renewable Energy Research Center. USA. Chairman of the World Renewable Energy Council. **Germany.**
- **Brian Sandoval.** President of the University of Nevada, Reno. Former Governor of the State of Nevada. **United States of America.**
- **Ghaleb Alhadrami.** Provost & Vice Chancellor of the United Arab Emirates University. **United Arab Emirates.**
- **Alan Gertler.** Vice President of Research at the Desert Research Institute (DRI), Reno. Director of the Clean Technologies and Renewable Energy Center. Nevada. **United States of America.**
- **Jean Luc Chotte.** President of the French Scientific Committee on Desertification (CSFD), Research Director at the Research Institute for Development, IRD. **France.**
- **Juan Manuel Benitez.** Dean of the Faculty of Economics, Business, and Tourism. University of Las Palmas de Gran Canaria. **Spain.**
• **James Smith.** President-elect of the International Association for Energy Economics (IAEE). Southern Methodist University, Texas. **United States of America.**

• **Roderick Tennyson.** Co-Founder and President of the Trans Africa Pipeline Inc (TAP). Institute for Aerospace Studies, University of Toronto. **Canada.**

• **Carmelo Rodriguez Torreblanca.** President of the University of Almería. **Spain.**

• **Hillard Huntington.** Director of the Energy Modeling Forum. Stanford University. California. **United States of America.**

• **Jimmy Cocking.** Director of the Desert Knowledge Australia (DKA). CEO of the Arid Lands Environment Center. Vice President of the Australian Conservation Foundation. **Australia.**

• **Johan Hollander.** World Maritime University (WMU), Global Ocean Institute, and International Maritime Organization (IMO). **Sweden.**

• **Mustapha Naimi.** University Institute of Scientific Research, Rabat. **Morocco.**

• **Ousmane Dramé.** President of the Ahmed Baba University (UPAB). President of the Coalition for Higher Education in Mali. Commissioner for the governance of the International Network of Higher Education Institutions of the CAMES Area. **Mali.**

• **Bernard Faye.** Founder and the first President of The International Society of Camelid Research and Development (ISOCARD). Camelologist at The French Agricultural Research Centre for International Development (CIRAD). **France.**

• **Mubarak Abdalla.** Director of the Desertification and Desert Cultivation Studies Institute. Deputy Dean of Agricultural and Veterinary Studies, University of Khartoum. **Sudan.**

• **Poul Alberg Østergaard.** Director of the Sustainable Energy Planning and Management Program. Aalborg University. **Denmark.**

• **Gabriel del Barrio.** Experimental Station of Arid Zones, Almería. The Spanish National Research Council (CSIC). **Spain.**

• **Mahamat Saleh Daoussa Haggar.** President of the University of N'Djaména. **Chad.**

• **André Torre.** Director at MSH Paris-Saclay University. Research Director at the National Institute for Agronomic Research (INRA). President of the European Regional Science Association (ERSA). **France.**

• **Sergio Moreno Gil.** Co-Director of International Relations at UNESCO Chair in Tourism and Sustainable Economic Development. University of Las Palmas de Gran Canaria. **Spain.**

• **Maureen McCarthy.** Tahoe & Great Basin Research Director, University of Nevada. Research Faculty at the Desert Research Institute (DRI), Reno. Nevada. **United States of America.**

• **Christoph Lütge.** Director of the Institute for Ethics in Artificial Intelligence. Technical University of Munich. **Germany.** Former Visiting Professor at Harvard University, Cambridge, Massachusetts. **USA.**

• **El Moustapha Sidi Mohamed.** Director of the Higher Institute of Accounting and Business Administration, ISCAE. **Mauritania.**

• **Aykut Olcer.** Head of Maritime Energy Management. World Maritime University. **Sweden.**

• **Kader Kaneye.** Founder and President of the African Development University. **Niger.**

• **Romila Verma.** Founder and Director of the Trans Africa Pipeline Inc (TAP). University of Toronto. **Canada.** ISMARE Environmental.

• **Niels Vestergaard.** Director of the Centre for Fisheries and Aquaculture Management and Economics (FAME). University of Southern Denmark. **Denmark.**
• **Latifa Lankaoui.** Member of the Board of Directors of the “Forum d'Echanges et de Rencontres Administratifs Mondiaux (FERAM)”, FSJES Souissi, Mohammed V University, Rabat. **Morocco.**

• **Nishanov Nariman.** Economist at the International Center for Agricultural Research in the Dry Areas (ICARDA). National Project Coordinator of FAO at the Central Asia Desert Initiative (CADI). **Uzbekistan.**

• **Jinlong Ma.** University of Melbourne. **Australia.** Vice president at APEC Sustainable Energy Centre, Tianjin University, **China.**

• **Houcine Khatteli.** General Director of the Institute of Arid Regions, **Tunisia.**

• **Hassan Ramou.** Institute of African Studies (IEA), Rabat.

• **Abdou Maisharou.** General Director of the National Agency of the Great Green Wall for the Sahara and the Sahel. **Niger.**

• **Ole Kristian Sivertsen.** CEO at Desert Control. **Norway.**

• **Andreas Walmsley.** Icelandic Tourism Research Centre, University of Iceland. **Iceland.** Coventry University. **United Kingdom.**

• **Khaled Sharbatly.** “ Desert Technologies”. **Saudi Arabia.**

• **Juan Luis García.** Director of the Atacama Desert Center. Faculty of History, Geography and Political Science. **Chile.**

• **Lhasan Elmrani.** President of the Center for Studies and Development of Oasis and Desert Territories.

• **Julius Gatune.** The African Center for Economic Transformation. **South Africa.**

• **Aicha Oujaa.** National Institute of Sciences of Archeology and Heritage, Rabat.

• **Hanaa Hachimi.** President of the Moroccan Society of Engineering Sciences and Technology, Director of the Systems Engineering Laboratory. Sultan Moulay Slimane University, Beni Mellal.

• **Abdelbassat Elhajoui.** Educational Program Director at the Sports Management School (SMS). Rabat.

• **Celestin Christian Tsala Tsala.** University of Yaoundé I. **Cameroon.**

• **Ouafae Ouariti Zerouali.** ENCG, Agadir.

• **Fatima Arib.** Director of ENCG Marrakech. Cadi Ayyad University, Marrakech.

• **Najat Ouaaline.** FST, Hassan I University, Settat.

• **Hamid Nechad.** ENCG, Tangier.

• **Oumhani Eddelani.** FSJES, Sidi Mohammed Ben Abdellah University, Fez.

• **Jamila Saidi.** FLSH, Mohammedia.

• **Zakaria Ez-zarzari.** FSJES, Ibn Tofail University, Kenitra.

• **Mounir Jerry.** FSJES, Ibn Tofail University, Kenitra.

• **Aimad Elhajri.** FSJES, Cadi Ayyad University, Marrakech.

• **Seedou Mukhtar Sonko.** Assane Seck University of Ziguinchor. **Senegal.**

• **Koautar Roussi.** ENCG, Dakhla.

• **Hajar El Moukh.** ENCG, Dakhla.

• **Mehdi Boutaoute.** ENCG, Dakhla.

• **Youssef Hanyf.** ENCG, Dakhla.

• **Lahoucine Assellam.** ENCG, Dakhla.

• **Mohamed Er-Raji.** ENCG, Dakhla.

• **Salek Riadi.** EST, Laâyoune.

• **Chahida El Idrissi.** ENCG, Dakhla.

• **Sheikh Mohamed Maoulainine.** Regional Director of the High Planning Commission, Dakhla.

• **Bathily Diahara.** University of Law and Political Science of Bamako. **Mali.**

• **Abdellah El Boussadi.** ENCG, Casablanca.
5- Themes.

As the International Congress on Desert Economy - Dakhla, is an interdisciplinary scientific research platform on the desert and arid regions, and due to the lack of economic and scientific literature on deserts, arid zones, and the Sahara, there will be a variety of themes and contributions will focus mainly on one of the following (non-exhaustive) themes:

1. International Scientific Research Collaboration for the Desert, the Sahara, and Arid Lands Development.
2. Trans-Saharan Megaprojects and Initiatives (Trans-African):
   - The Morocco - Nigeria Gas Pipeline;
   - The Great Green Wall for the Sahara and the Sahel Initiative (Greening the Sahara and combating the desertification);
   - The " Dakhla Atlantic Port" Project;
   - The DESERTEC Project;
   - The Trans Africa Pipeline Project (Bringing Water to the Great Sahara and the Sahel);
   - The " Power Africa " Initiative;
   - The " Desert to Power " Initiative;
   - The African Continental Free Trade Area AfCFTA (Africa’s Silk Road);
   - The United States of America's Initiative: " Prosper Africa ";
   - The MENA and China’s Belt and Road Initiative BRI (China's new silk road and maritime Silk Road).
4. Business, Entrepreneurship, and Investments in Arid Lands (deserts, sahara) and Remote Rural Areas.
5. Deserts (arid lands, sahara), the Economics of Space (Space Economy), and Space Industry.
8. Energy and Food Security in Drylands, Arid Agriculture (desert agriculture), Biosaline Agriculture, Precision Agriculture, and Irrigation Rationalization (economic, social and environmental aspects).
9. Environmental and Climate Finance (green finance).
11. Desertification, Climate Change (Resilience and Adaptation), and Environment.
12. Livestock Economics, Management, and Production (camels, sheep, cows…).
13. Arid Lands (Deserts and the Sahara) Tourism (desert tourism, ecotourism), Travel, and Hospitality Industry.
15. Cultural Entrepreneurship and Management of Tangible and Intangible Heritage (arts, cultural industries, creative industries and music industry, traditional crafts, and artisans.)
16. Ocean Economy, Sea Economy (maritime), and Blue Economy.
17. Economics and Management of Fisheries and Aquaculture.
23. Deserts (arid lands, sahara) and Global Economic Transformation.
27. Conventional Energy Resources: Oil (hydrocarbons), Gas, and Coal.
29. Energy in Agribusiness, Aquabusiness (aquaculture), and Fisheries Business (halieutic).
30. Agricultural Economics (rural economics).
31. Sustainable Mobility (ecomobility), Transportation, Logistics and Supply Chain Management.
34. New Technologies (Artificial Intelligence, Blockchain...) and Energy Efficiency (economic, social and environmental aspects).
36. Economic Geology and Economic Geography.
37. Tourism, Travel, and Hospitality Industry (tourism economics).
40. Public Policy (planning and spatial development), Regional Development (territorial development) and Rural Development (rural entrepreneurship), Development of Oases and Remote Areas.
41. Public/Private Investment and Business Climate.
42. International Collaboration and Trade Logistics.
43. Migrations and SDGs.
44. Management, Governance, and Sustainability Issues.
45. Entrepreneurship, Marketing, and Innovation.
46. Knowledge Economy and Human Capital.
47. Finance and Financial System.
48. Digital Economy.
49. Economic Intelligence.

6- Call for Papers.
It is with pleasure that we invite you to submit an abstract for presentations, as oral communication, through the congress website: https://sahara-desert.sciencesconf.org, within the framework of one of the themes of the congress, before January 10, 2023. Proposals must meet the scientific standards required in the Author guidelines section.

Attendance and participation in the Congress are free of charge (there are no registration or participation fees), however, for a better organization, preliminary online registration is required before Mars 10, 2023.

For PhD students, please bring your student ID card or your registration certificate.

After evaluation by the Scientific Committee of the abstracts of communication projects, authors will be informed of the results via email.

The full versions of the accepted research papers must reach the Scientific Committee before Mars 10, 2023.

Further information about the Congress, including information on Dakhla city, about cheaper hotels, is available on our website: https://sahara-desert.sciencesconf.org

7- Author guidelines.

In order to submit an abstract, please follow these steps:

1. Create an account by selecting "Registration" on our website: https://sahara-desert.sciencesconf.org
3. If you receive a notification of acceptance, "Submit" and send the full version before Mars 10, 2023.

Please submit the abstract of your proposal for oral communication via the submission system on our website (copy and paste your abstract in the space provided in the form).

Abstracts should not exceed 600 words and should include: 1. The header:

- The title of the communication;
- The first name and the last name;
- Function and institutional affiliation;
- Keywords (3-5).

2. The abstract text:

1. The problem;
2. The objectives;
3. The methodological framework;
4. Preliminary results (if possible).

Oral communications.

Oral interventions will be in English, Arabic, French and Spanish, for a period of 10 minutes, followed by a discussion of 5 minutes.

Final versions.

The full versions, is to be submitted, first via the website, then to send another version, before Mars 10, 2023, as an attached file in Microsoft Word format to the following e-mail address: economydesert@gmail.com, a template of the accepted full versions is available on the website.

8- Publication.

It is planned to publish the accepted and presented papers during the congress, in a collective work (in the Proceedings of the Congress).

Best selected papers will also be published in The International Journal of Sustainable Energy Planning and Management (IJSEPM) and / or in The International Journal of Economics and Management Research (IJEMARE).

The languages of the Congress are: English, Arabic, French and Spanish.

9- PhD Workshop.

A PhD workshop will be organized as part of the fourth International Congress on Desert Economy, Dakhla. The challenge is to allow PhD students to make a short oral presentation (6 min at most) on their theses work at various stages of advancement. This doctoral workshop is organized in the context of the importance given by our School to young researchers. We are committed to fostering their integration into the scientific community. PhD students in various disciplines (Economics, Management, Geography, Environment, Culture ...), are invited to submit the summary of the most important points of their theses. Further information about this PhD Workshop is available in the section “PhD Workshop”, on our website:

https://sahara-desert.sciencesconf.org/resource/page/id/10

10- Sahara Desert Excursion
The Desert Action association organize on Saturday, May 13, 2023, an excursion to the desert of Sbita (Dakhla region). This excursion is part of the post-congress program of the Fourth International Congress on Desert Economy, it’s an opportunity to savor the beauty of this region.

Further information about this Excursion is available in the section “Sahara Desert Excursion”, on our website:  https://sahara-desert.sciencesconf.org/resource/page/id/13

At the closure of the congress, there will be a musical concert entitled " The Sahara desert music " concert.


The Desert Action Association, Dakhla, Morocco

The Sbita Desert:

In the middle of nowhere, to combine business with pleasure.

The most peaceful and joyful moments in the middle of nowhere, "The Sbita Desert ", with its sandy horizons, adorned by the most amazing desert tree: the Acacia (raddiana), under its refreshing shadows, while listening to some classic tones of the Desert: “Hassani music" (Sahara music), you will attend a "desert barbecue" and you will taste the traditional dish of southern provinces: "Rice with camel meat". Of course, this time of entertainment is interrupted by three ritual and special moments, those of the presentation of the famous three cups of "Saharan Tea", prepared under a tent of the desert.

This moment of relaxation and contemplation, is not a moment of inactivity, but also an opportunity to combine business with pleasure: Times of exploration, curiosity and popular science. The light will be put on certain phenomena that take place in the desert: Meteorological (precipitation and plants of the desert), geological (formation of dunes), archaeological...

Also this will be an opportunity to raise awareness for students and high school pupils of astronomy and space field experimentation and simulation in desert, and it will also be a suitable moment to underscore the economic potential of Space industry, the economics of space (space economy), and all space related economic activities that takes place in Deserts, Sahara, and Arid lands.

And above all, the central desert place around the world and its promising economic potential: desert tourism (Sahara), sport and adventure tourism, renewable energies, agriculture, raw
Departure from Dakhla: Saturday, May 13, 2023 at 09:00 H.

Return to Dakhla: In the evening 19:00 H.

**The menu:**

- Beet salad (Barba salad)
- Tomato salad
- Pasta salad
- Cucumber salad
- Nicoise salad
- Rice with camel meat (the traditional dish in the southern provinces)
- Grilled chicken
- Grilled sheep
- Grilled kebabs
- Drinks
- Bread
- Saharan tea.

11- About this Congress.

The idea of the International Congress on Desert Economy - Dakhla, arose for the first time by an initiative of Prof. Elouali Aailal, in the framework of the "Desert Action" association (literally in Arabic "Desert Pioneers" "رواد الصحراء"), on February 2017, in Dakhla city, then, thanks to an official convention between the National School of Business and Management (ENCG Dakhla) of Dakhla, and the Regional Council of the Dakhla Oued Eddahab Region, this agreement provides for the annual co-organization of this Congress.

The Desert Action Association, in Dakhla, is the first Moroccan, African, and International organization, specialized in Arid Lands, Sahara, and Desert economy development (oases and remote rural areas development), business, management, and in promoting, attracting and encouraging investment in the Sahara and deserts (arid lands). The ultimate goal of the Desert Action Association is to enhance scientific
research and development (R&D) on Deserts, Arid Lands, and the Sahara, in an approach of thinking globally (Internationally) and acting locally.


The web page of the third edition of the International Congress on Desert Economy – Dakhla 2020 (postponed to 2022):

https://sahara-economy3.sciencesconf.org

The web page of the second edition of the International Congress on Desert Economy – Dakhla 2019:

https://sahara-economy.sciencesconf.org

The web page of the first edition of the International Congress on Desert Economy – Dakhla 2018:

https://desert-economy1.sciencesconf.org

12- The "Théodore Monod Desert Award" project.

In February 2017, and by an initiative of Prof. Elouali Aailal, the Desert Action Association - Dakhla, was the instigator of the project to create an annual Prize named "The Théodore Monod Desert Award" (Prof. Théodore Monod), to be the first worldwide Award for scientific research and economic development of arid lands, the Sahara, and desert, in order to pay tribute and honor the memory of this exceptional man who devoted his life to scientific research on the desert and arid lands, and to acknowledge his human qualities and his pioneering efforts on desert and Sahara studying and exploring. The idea was to annually award this Prize within the framework of the editions of the International Congress on Desert Economy - Dakhla, to encourage and enhance scientific, economic and development studies and research on deserts (arid lands, Sahara), in its different aspects: scientifics, economics...