

Under the auspices of the Ministry of High Education, Scientific Research and Training program,  
and the Ministry delegate in charge of Environment, Morocco



# CLIMATE SUSTAINABILITY & DEVELOPMENT

PATHWAYS TO COOPERATION UNDER  
THE SCIENCE, TECHNOLOGY AND INNOVATION

MAY 11-13 2016  
AGADIR - MOROCCO





Organized by: Ibn Zohr University (Morocco), Institute of Research for Development (IRD-France) and Center for Strategic Studies and Management in Science, Technology and Innovation (CGEE- Brazil)



## CONCEPT NOTE

This international meeting is convened by Ibn Zohr University - Morocco, the Institute of Research for Development (IRD) - France and the Center for Strategic Studies and Management in Science, Technology and Innovation (CGEE) – Brazil; in cooperation with the National Center Scientific Research and Technology-Morocco, Minister of energy, mines, water and environment - Morocco, Moroccan Committee of International Association of Hydrogeologists - Morocco, French Embassies (Argentina, Brazil, Morocco, Mexico, Niger, Ivory Coast, Tunisia), Embassy of Mexico in Morocco; AUF Maghreb Bureau, ONEE-IEA, under the partnership of several institutions in Africa, Latin America, and Europe.

Its primary objective is to put emphasize on climate change impacts and adaptation in conjunction with the recently agreed Sustainable Development agenda. This event is situated in the context of the preparation on the COP 22 Marrakesh especially regarding its dimension in terms of science and technology. The specific objectives of the meeting are:

- i) to provide an opportunity for knowledge chairing through presentations of scientific finding emanating from several academic institutions in the three continents.
- ii) to present a comprehensive review of programs, networks and collaborative instruments dealing with the issue of climate and environmental changes at national and regional level
- iii) to explore set the stage of future agreements and to foster collaborations among institutions from Africa/Mediterranean region, Europe, and Latin America in terms of concrete actions towards a multipartite Platform/Center; hosted at the Ibn Zohr University and oriented to research, education, innovation in the context of climate change and sustainable development.

The 3 days international meeting will start with short presentations of different research studies, projects and programs, within the context of climate change and sustainable development. Different keynote presentations provided by scientists from Morocco, Brazil and Mexico, are planned; and finally a round table discussion led by African, Latin America and European high-level academics and representatives is directed toward future mechanisms of collaboration.



## THE CHALLENGE

Discussions on climate change and their impacts on natural resources and societies are a major challenge for the next century. Indeed, research has shown that for all the time, but with variable intensities climate change has affected hydro systems, soil and natural ecosystems, especially their biodiversity and biogeographic distribution. The ongoing climate change will have important consequences on widely degraded natural anthropogenic ecosystems (food systems, urban areas, wetlands, etc.). The impacts concern water and soil resources, natural disasters, natural and agricultural plant resources, and human and animal health. These issues require dedicated and diversified expertise, based on solid knowledge and a shared partnership approach of the mechanisms of governing climate change. It is therefore urgent to advance and share knowledge in order to be better adapted to these changes.

The imminence and severity of the problems posed by the accelerating changes in the global climate are becoming increasingly evident. Heat waves are becoming more severe, droughts and downpours are becoming more intense, the Greenland Ice Sheet is shrinking and sea level is rising, and the increasing acidification of the oceans is threatening calcifying organisms. The environment and the world's societies are facing increasing stress.

Global climate change, driven largely by the combustion of fossil fuels and by deforestation, is a growing threat to human well-being in developing and industrialized nations alike. Significant harm from climate change is already occurring, and further damages are to be expected. The challenge now is to keep climate change from becoming a catastrophe. There is still a good chance of succeeding in this, and of doing so through the creation of economic opportunities to balance the cost of actions while preserving our planet for future generation. But seizing this chance requires an immediate and major acceleration of efforts on two fronts: mitigation measures to prevent the degree of climate change from becoming unmanageable; and adaptation measures to reduce the harm from climate change that proves unavoidable.



Even with greatly increased efforts to mitigate future changes in climate, the magnitude of local, regional, and global changes in climatic patterns experienced in the 21st century will be substantial. A 2°C increase in the global-average surface temperature above its 1750 value is likely, for example, to result in up to a 4°C warming in the middle of large continents and even larger increases in the polar regions. Climate change during the 21st century is likely to entail increased frequency and intensity of extreme weather events, increases in sea level and the acidity of the oceans that will not be reversible for centuries to millennia, large-scale shifts in vegetation that cause major losses of sensitive plant and animal species, and significant shifts in the geographic ranges of disease vectors and pathogens. These changes have the potential to lead to large local-to-regional disruptions in ecosystems and to adverse impacts on food security, fresh water resources, human health, and settlements, resulting in increased loss of life and property. Some sectors in some locations may benefit from the initial changes in climate. Most impacts are expected to be negative, however, with the social and economic consequences disproportionately affecting the poorest nations, those in water-scarce regions, and vulnerable coastal communities in affluent countries (Scientific Expert Group report on Climate change and Sustainable Development, United Nation Foundations, 2007)..



## IMPORTANT PART OF THE ANSWER SCIENCE, TECHNOLOGY AND INNOVATION

Countries around the world are seeking to achieve economic growth that is smart (innovation-led), inclusive, and sustainable. Such a goal requires a rethinking of the role of government and public policy, in particular, it requires a new justification of governments and organizations intervention that goes beyond the usual one. In this context, STI policy is about identifying and articulating new missions that can galvanize production, distribution, and consumption patterns. Tackling innovation missions requires investments by both private and public actors

Debates on how best to promote sustainable and inclusive development are incomplete without a full consideration of issues of STI. Access to STI promote steady improvements in living conditions, which can be lifesaving for the most vulnerable populations, and drive productivity gains which ensure rising incomes.

There are two essential STI issues that need to be tackled simultaneously in the post-2015 development agenda. Firstly, innovation driven growth is no longer the prerogative of high income countries alone, some developing countries have achieved significant economic growth through the creation and deployment of STI capacity. But, this has not been the case for all countries, in particular developing countries. Secondly, STI policy has often been pursued independently of the broader developmental agenda; it is important that STI be integrated into public policy goals, giving particular focus to the nexus between STI, culture, education and development. In addressing these issues, STI will need to be made more participatory and inclusive so that there is public engagement in the scientific endeavor from the full spectrum. The least developed countries will require dedicated support to bolster their efforts to build STI capacity.



In the MDGs, issues of science and technology have focused predominantly on access to essential medicines (particularly for the treatment of HIV/AIDS) and on internet connectivity and the related spread of communication technologies (ICTs). The favored approach has been through needs assessment and targeted capacity building. However, delivering on the full range of amenities which underpin the post-2015 agenda for sustainable development, including, *inter alia*, environmental protection, the containment of health epidemics, mitigating climate change, requires access to a range of appropriate technologies. Much of the required technology is already available in the public domain but accessing and linking them to the required knowledge and skills within countries is neither automatic nor costless. It calls for investments in dynamic capabilities, particularly those that shape the ability of national stakeholders to uptake and absorb technologies and make improvements in line with local conditions. This is not a one-way process. Some level of technological capabilities in countries is critical to ensure the provision of these amenities to all. At the same time, the critical importance of such amenities spans beyond individual countries or regions. In such a case, the international community as such, has a collective responsibility to ensure the provision of these goods.

Within the UN Framework Convention on Climate Change, the new Technology Mechanism established by the Cancun Agreements in December 2010, whose principles have been reaffirmed in the Paris Agreement on climate change (2015), represents a move towards a more dynamic arrangement by fostering public-private partnerships; promoting innovation; catalyzing the use of technology road maps or action plans; mobilizing national, regional and international technology centers and network; and facilitating joint R&D activities. Scaling-up and extending this kind of approach will be a central part of the global partnership in the framework of the 2030 development agenda.



STI (as referred to in the UN and OECD10 contexts) has been recognized as one of the main drivers behind productivity increases and a key long-term lever for economic growth and prosperity. It is also vital for environmental sustainability. In the context of the new Agenda and for achieving the SDGs STI plays an even more central role. First of all, STI features strongly both in Goal 17 on Means of Implementation, as well as a cross-cutting one to achieve several sectoral Goals and Targets. Fostering innovation is part of the Sustainable Development Goal 9 related to resilient infrastructure and inclusive, sustainable industrialization. In particular, Target 9.5 elevates the role of research and innovation policy well beyond STI as one of the Means of Implementation. Moreover, the Addis Ababa Action Agenda (AAAA)15, which is an integral part of the 2030 Agenda, has identified concrete policies and actions - including STI - as support for meeting the SDGs. Finally, the historic Paris Agreement on climate change negotiated in the last December (COP21) address STI issues, most notably underlining that cooperative action is key to facilitate and promote technology, and proposing a framework for enhanced action on technology development and transfer. The present initiative is part of the agenda of the action to be implemented during the COP22.

**Reference documents:**

- <http://www.unfoundation.org/news-and-media/publications-and-speeches/confronting-climate-change.html?referrer=https://www.google.com.br/>
- [https://www.cgee.org.br/documents/10195/909424/The\\_Brazilian\\_Innovation\\_System-CGEE-MazzucatoandPenna-FullReport.pdf](https://www.cgee.org.br/documents/10195/909424/The_Brazilian_Innovation_System-CGEE-MazzucatoandPenna-FullReport.pdf)
- [http://www.un.org/en/development/desa/policy/untaskteam\\_undf/thinkpieces/28\\_thinkpiece\\_science.pdf](http://www.un.org/en/development/desa/policy/untaskteam_undf/thinkpieces/28_thinkpiece_science.pdf)
- <http://bookshop.europa.eu/en/the-role-of-science-technology-and-innovation-policies-to-foster-the-implementation-of-the-sustainable-development-goals-sdgs--pbk10415809/>



## PRÉSENTATION DE LA RENCONTRE

Les discussions sur le changement climatique et leurs impacts sur les ressources naturelles et les sociétés sont un enjeu majeur pour le siècle à venir. En effet, les recherches montrent que de tous les temps, mais avec des intensités et des modalités variables, les changements climatiques ont affecté les hydro-systèmes, les sols et les écosystèmes naturels en particulier leur biodiversité et leur répartition biogéographique. Le changement climatique en cours, ayant été exacerbé par les activités humaines, aura des conséquences importantes sur des systèmes naturels largement dégradés et sur les systèmes anthropiques (agro-systèmes, milieu urbain, zones humides etc...). Les impacts concernent aussi bien les ressources en eau, les ressources naturelles, agricoles, les événements extrêmes ainsi que la santé humaine et animale. Ces questions demandent une expertise dédiée et diversifiée, basée sur une connaissance solide et une approche partenariale partagée des mécanismes qui gouvernent les changements climatiques et leurs impacts régionaux sur les environnements et les ressources.

Comprendre les mécanismes qui génèrent les oscillations climatiques et déterminent les modes des variations du climat, pour prédire l'évolution ainsi que leurs impacts sur l'environnement et les ressources hydriques en particulier et être en mesure d'atténuer et de s'adapter à leurs conséquences sociétales est devenu depuis plusieurs années un objectif majeur et prioritaire de recherche. Ceci impose de documenter la variabilité naturelle du climat et de déchiffrer les systèmes complexes de rétroactions liés aux activités humaines.

Il est donc urgent de faire progresser les connaissances afin de s'adapter au mieux à ces changements. Ainsi, la recherche est au cœur du dispositif pour partager ses expériences, trouver des solutions dont l'objectif est de formuler des éléments de réponses aux politiques pour proposer des modèles d'atténuations et d'adaptations aux changements climatiques et environnementaux.



MARRAUGH  
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IRD



Au cours de la conférence internationale, organisée à Fortaleza-Brésil en 2010, sur le climat, la durabilité et le développement durable dans les régions semi-arides et de la conférence de Rio+20 au Brésil en 2012, l'Institut de Recherche pour le Développement (IRD) de France, le Centre de Gestion des Etudes Stratégiques du Brésil et certains pays d'Afrique tels que le Maroc, le Sénégal, la Mauritanie, le Mali et le Niger se lançaient dans une coopération tripartite en mettant l'accent sur les zones arides. Le succès de cette expérience a conduit les pays partenaires de cette initiative de renforcer la dynamique de la coopération Sud-Sud et Nord-Sud en diversifiant les dispositifs de coopération mettant en place une initiative plus vaste pour traiter divers sujets à savoir la question des changements climatiques et environnementaux, la gestion des ressources naturelles notamment les ressources naturelles.



## OBJECTIF : COOPÉRATION TRIPARTITE

L'idée première de cette initiative est tout d'abord de mettre en réseau de projets de recherches scientifiques et de formations sur le thème de changements climatiques et environnementaux dans les 3 régions. Il s'agit de faire émerger des projets collaboratifs de recherche, de formation et d'innovation portant sur les impacts des changements climatiques. Les zones concernées sont les zones arides, semi arides et les zones montagneuses tout en réalisant des focus sur l'agriculture, la gestion des ressources naturelles (eau, sol, biodiversité et ressources marines), et l'adaptation au changement climatique, et le développement durable en lien avec les Objectifs du Développement Durable (ODD). En effet, l'étude du climat, de l'environnement et de leurs liens avec la société nécessite le développement d'actions nécessairement multidisciplinaires. Cependant la multidisciplinarité doit être coordonnée autour de pôles d'intégration permettant un usage transdisciplinaire efficace des méthodes et des outils ainsi que d'actions de gouvernance.

Étant donné l'intérêt porté par les différents partenaires, l'université Ibn Zohr-Maroc, l'IRD-France et le CGEE-Brésil organisent une réunion ouverte, à Agadir du 11 au 13 Mai, adressée principalement aux scientifiques et aux institutions de formation et de recherche et aux décideurs en Amérique latine, au Maghreb et en Afrique sub-saharienne. L'objectif est de faire le point sur les dernières avancées scientifiques et d'identifier les verrous qui restent à lever au sujet de la thématique générale des changements climatiques et leurs impacts sur l'environnement, les ressources naturelles et les sociétés.

L'objectif étant d'explorer la faisabilité de mise en place d'une plateforme d'excellence internationale sur les changements climatiques et leurs impacts en Méditerranée, en Afrique et en Amérique Latine en vue d'une gestion durable des ressources naturelles, particulièrement les ressources en eau, en sol., en écosystème végétal et ressources marines. Il s'agit ici d'inventer de nouveaux modèles/concepts de coopération scientifique, portés sur l'échange d'expériences, la mutualisation des moyens et des connaissances afin de contribuer efficacement aux processus de formulation des politiques publiques dans ces



régions du monde tout en offrant des possibilités de création d'entreprises innovantes par les jeunes formés dans le cadre de cette coopération tripartite.

L'idée première de cette initiative est tout d'abord de mettre en réseau de projets de recherches scientifiques et de formations sur le thème de changements climatiques et environnementaux dans les 3 régions et ensuite faire immerger des projets collaboratifs de recherche, de formation et d'innovation portant sur les impacts des changements climatiques sur les zones arides, semi arides et les zones montagneuses tout en réalisant des focus sur l'agriculture, la gestion des ressources naturelles (eau, sol, biodiversité), et l'adaptation au changement climatique, et le développement durable en lien avec les Objectifs du Développement Durable (ODD) .

En effet, l'étude du climat et de l'environnement et de leurs liens avec la société nécessite le développement d'actions nécessairement multidisciplinaires, Cependant la multidisciplinarité doit être coordonnée autour de pôles d'intégration permettant un usage transdisciplinaire des données et résultats, et un échange efficace des méthodes et outils ainsi que d'actions de gouvernance.

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L'objectif étant d'explorer la faisabilité de mise en place d'une plate-forme d'excellence internationale sur les changements climatiques, et leurs impacts sur la méditerranée, l'Afrique et l'Amérique Latine en vue d'une gestion durable des ressources naturelles, particulièrement les ressources en eau, en sol et végétales.

Dans le cas où les parties convergent dans ce processus de préfiguration à Agadir, l'annonce officielle de la mise en place de cette plateforme aura lors d'un événement parallèle de haut niveau pendant de la COP 22 de Marrakech.



## PARTNERS

- **Morocco:** : Minister of High Education, Scientific Research and Training program, Minister of Energy, mines, water and Environment, Minister of Foreign Affairs and cooperation, Wilaya of Souss Massa, Agadir, Ibn Zohr University, Agadir, Mohammed V University, Rabat, National Center for Scientific and Technological Research, Rabat, Moroccan Committee of International Association of Hydrogeologists, Veterinary Institute of Hassan II, Agadir, Hydraulic Basin Agency of Souss-Massa-Draa, Agadir, AGROTECH, High Commission for Water and Forests, Rabat, ONEE/IEA, Rabat, School Governance and Economy, Rabat, National School of Mines, Rabat
- **Niger:** University Abdou Moumouni (UAM) of Niamey, Niger, AGRHYMET, Niger
- **Mali:** University of Science Technic and Technology (USTT) and Rural Institute of Polytechnic of Katibougou (IPR-IFRA), Mali
- **Senegal:** University of Cheikh-Anta- Diop, Senegal
- **Ivory Coast** University of Félix Houphouet Boigny
- **Tunisia:** Minister of Scientific Research, Institute of Research and High Agricultural Education, University of Tunis
- **Argentina:** Universidad de Buenos Aires-Argentina
- **Chile:** Universidad de Antofagasta, Chile
- **Mexico:** National Council for Science and Technology, National Autonomous University of Mexico, National Commission on Forestry, Scientific Research and Higher Education Center in Ensenada, Scientific and Technological Research Institute in San Luis Potosi, National Institute of Ecology and climate change, Colegio of San Luis Potosi
- **Peru:** Peruvian University Cayetano Herredia
- **Brazil:** Center for Strategic Studies and Management in Science, Technology and Innovation (CGEE), Meteorological Fondation of Hydrological Resources of Ceara, Federal Fluminense University, University of São Paulo, Federal University of Pernambuco
- **France:** Institute of Research for Development (IRD), National Center Of Scientific Research (CNRS), Sorbonne University (SU-France), Pierre and Marie Curie University (UPMC-France), Bretagne Occidental University(UBO-Brest)
- **Spain:** University of Las Palmas- Gran Canaria
- **Portugal:** University of Lisbon, University of Algarve, University of Porto
- **Regional Organization:** Association of French speaking University: AUF-Maghreb. Observatory of Sahara and Sahel (OSS)



# PROGRAM



## Wednesday 11<sup>th</sup> May

16h00-17h00: Registration

17h00-18h00: Opening Ceremony

Chair : Abdelaziz Bendou (Vice President of Ibn Zohr University-Morocco)

- Minister of High Education, Scientific Research and Training program-Morocco
- Minister in charge of the Environment-Morocco
- Wali of Souss Massa-Morocco
- President of the Ibn Zohr University-Morocco
- President Director General of IRD-France
- Representative of IRD-France to Morocco
- Ambassador of Brazil to Morocco
- Ambassador of Mexico to Morocco
- Ambassador of France to Morocco
- Director of the Center for Strategic Studies and Management in Science, Technology and Innovation (CGEE-Brazil)
- Representative of National Council for Science and Technology (CONACYT)-Mexico
- Representative of the Minister of High Education, Scientific Research and Training program-Tunisia
- Vice-President in charge of Research and International Relationship, University Abdou Moumouni
- Representative of the President of University Cheick Ana Diop-Senegal
- 18h00-18h30. Welcome Reception

### Plenary Lecture

Chair: Amadou Gaye (UCAD-Senegal)

- 18h30-19h15: Invited Conference Mohammed Tozy. Directeur de l'Ecole de Gouvernance et Economie, Maroc

La gouvernance appliquée au changement climatique et développement durable.



## Thursday 12<sup>th</sup> May

### Session I: Climate Change

Chair: Claudia Simoniato (Univ. Buenos Aires-Argentina)

Reporter: Gil Mahé (HSM/IRD-France)

- 08h30-08h45: Myriam Khodri (LOCEAN/IRD-France). Decadal Extreme Events in Atlantic Monsoons and imPACTs: understand, attribute and predict
- 08h45-09h00: Amadou Gaye (UCAD-Senegal). Consortium pour la compréhension des changements futurs de la mousson africaine et de leurs influences sur la prise de décision
- 09h00-09h15: Pedro Leita da Silva Dias (IAG/USP-Brazil): Changes in extreme monthly rainfall in the Brazilian Southeast during the Last Millennium based on PMIP5 models
- 09h15-09h30: Gay y Garcia Carlos (UNAM-Mexico): English: “The PINCC as a toolbox for adaptation to climate change in Mexico”
- 09h30-09h45: Arona Dhiedou (LTHE/IRD-France). Risques hydrométéorologiques et érosion côtière dans les villes du littoral Ouest - Africain
- 09h45-10h00: Victor Magana (UNAM-Mexico) “Drought in Mexico as a Risk: Management problems
- 10h00-10h15: Eduardo Martins (FUNCEM-Brazil). Climate Variability and Change Impact Studies in Brazil
- 10h15-10h30: Edgadr Pavia (CICESE-Mexico). Climate change scenarios in Mediterranean arid and semi-arid regions of the world
- 10h30-11h00: Coffee-Break



## Session I: Climate Change:

- 11h00-11h15: Ana Luiza Albuquerque (UFF/Brazil). SW Atlantic Oscillations during the last two Interglacial-Glacial cycles - implications to South American Climate: Contribution to the Atlantic understanding: Research and Education
- 11h15-11h30: Abdelfattah Benkaddour (UCAM). Modern and past variability of hydrological indicators in Moroccan Middle Atlas

## Session II: Impacts: Natural Resources

Chair: Elisabeth Huber-Sannwald (IPICyT-Mexico)

Reporter: Hanich Lahoucine (UCAM-Morocco)

- 11h30-11h45: Lhoussaine Bouchaou (Ibn Zohr-Morocco). Sustainability and overexploited Indicators of water resources in Semi-Arid Area. Case of Souss-Massa-Draa (Morocco)
- 11h45-12h00: Christian Leduc (G-Eau/IRD-France). Scales and dynamics of changes in water resources in semi-arid areas, illustrated by a multipartite project (Brazil, France, Mauritania, Tunisia)
- 12h00-12h15: Jean Loup Guyot (GET/IRD-France). Analyse de l'interaction « climat – tectonique » sur l'évolution des karsts du bassin Atlantique, des Andes à l'Atlas, et son impact sur les ressources hydriques
- 12h15-12h30: Fadila Dembélé (USTT, IPR-IFRA, Mali). La surveillance Environnementale, outil d'aide à la décision pour la gestion des changements climatiques: Synthèse des résultats de la surveillance environnementale dans les Observatoires ROSELT/OSS au Mali
- 12h30-12h45: Lahcen Kabiri (Faculté des Sciences-Errachidia-Morocco). Les ressources naturelles dans les milieux oasiens : gestion et utilisation
- 12h45-13h00: Gil Mahé (HSM/IRD-France). Évaluation de l'impact des barrages et du changement climatique sur les transferts d'eau et de sédiments jusqu'à la mer. Approche régionale sur les plus grands oueds au Maghreb
- 13h00-14h30: Lunch



- 14h30-14h45: Oula Amrouni (Univ Tunis-Tunisia) Etude éco-systémique du prisme littoral côtier de la baie ouest du golfe de Tunis. Cas des plages de Ghar El Melah ; Kalâat Andalous ; delta de la Medjerda et de Raoued (Méditerranée, Tunisie)
- 14h45-15h00: Maria Snoussi (Univ. Mohamed V-Morocco). Impacts des changements climatiques sur les zones côtières des pays méditerranéens et stratégies d'adaptation»
- 15h00-15h15 : Anas Emran ((Univ. Mohamed V-Morocco). Le fonctionnement de la Sebkha d'Imlily dévoilé par les images Radar Alos-Palsar : un reliquat-témoin des changements climatiques dans la région du Sahara et de l'Afrique de l'Ouest
- 15h15-15h30: Oumarou malam issa (IESS/IRD-France). Ecological roles and spatial distribution of Biological soil crust in the Sahel from local to regional scale.
- 15h30-15h45: Ahmed EL Aboudi (Univ. Mohammed V.-Morocco). Impact des changements climatiques sur les écosystèmes forestiers méditerranéens et suivi de l'évolution des paramètres climatiques (Températures et précipitations) et l'Indice de végétation à partir des données spatiales»
- 15h45-16h00: Robin Duponnois (LSTM/IRD-France). Les symbioses plantes / microorganismes: des outils biologiques performants pour assurer la productivité et la stabilité des agrosystèmes méditerranéens.
- 16h00-16h15: Abderrahmane Ait Lhaj ( ANDOZA Agadir-Morocco): Argannerie Biosphere Reserve facing the challenge of climate change: ANDZOA strategy a way forward to better adaptation.
- 16h15-16h30: Thierry Mateille (CBGP/IRD France). Réponse au changement climatique et à l'antrpoisation au Sud : Migration, Adaptation et domination des prédateurs
- 16h30-16h45: Said Boujrouf (LMI Mediter): Terroirs et changement climatique: Un aperçu à partir des travaux du LMI MEDITER
- 16h45-17h00: Mónica Anzaldo: Anthropological research of the semi-desert region of North Central Mexico
- 17h00-17h15: Coffee Break

## Plenary Lecture

Chair: Driss Ouazar (ENIM, Rabat)

- 17h30-18h15: Invited Conference: Antonio Magalhães Researcher Expert (CGEE-Brazil) The Challenge of Global Changes and Sustainability in Africa and Latin America.
- 18h15-19h00: Invited Conference: Huber-Sannwald Elisabeth (IPICyT-Mexico). Living in Drylands in the Anthropocene - emerging inter- and transdisciplinary challenges and opportunities



## • Friday 13<sup>th</sup> May

### Session III: Science and knowledge driven for decision: cooperative tools and data platforms

Chair: Rosario Perriel Martinez (Univ. Las Palmas).

Reporter Leite da Silva Dias (IAG/USP-Brazil).

- 08h30-08h45: Kaire Maguette (AGRHYMET-Niger). CILSS, GCCA, Alliance mondiale contre le changement climatique
- 08h45-09h00: Tercio Ambizzi (USP-Brazil). INter-disciplinary Climate INvestigation cEnter (INCLINE): Research, Impacts and Activities
- 09h00-09h15: Claudia Simoniato (Centro de Invistigaciones del Mar y la Atmosfera (CIMA/CONICET-UBA)) and Alexis Hannard (CNRS/France): Overview and potential for triangular collaboration
- 09h15-09h30: Abdel Sifeddine (LOCEAN/IRD-France). LMI PALEOTRACES/CLIMACTE/INCT DCIFRAR Past climatic changes in South America: forcing, Responses, Feedbacks and Impacts – Bases for future climate prediction
- 09h30-09h45: Maria Rivera Chira (UPCH-Peru): Sustainability and development within the Peruvian context: The role and global potential of Peruvian Cayetano Heredia University
- 09h45-10h00: Bouzou Moussa Ibrahim (Université AM-Niger). Un exemple d'intégration de la recherche en réseau en Afrique: le réseau PARRAF, gestion des risques hydrométéorologiques dans les villes africaines (RHYVA)
- 10h00-10h15: Frédéric Jacob (LISAH/IRD-France). LMI NAILA. A International joint laboratory for studying the management of water resources in Tunisian rural areas
- 10h15-10h30: Salah Er-Raki (UCAM-Morocco). LMI TREMA. Fonctionnement hydrologique d'un bassin versant semi-aride et impact des changements climatiques: cas du bassin du Tensift
- 10h30-11h00: Coffee Break



### Session III: Science and knowledge driven for decision: cooperative tools and data platforms

- 11h00-11h15: Oliver Pringault (MIO/IRD-France). LMI COSYS-Med a joint international laboratory to study contaminants in the Med sea
- 11h15-11h30: Antonio Galvão (CGEE-Brazil). STI tools for applied policy analysis: the case of the Brazilian dryland
- 11h30-11h45: Cristina Robalo Cordeiro (AUF). AUF Initiative in High Education.Maghreb-Brazil.
- 11h45-12h00: Abdelkhalek Jaid (Ibn Zohr University-Morocco). Social and Cultural approaches for sustainable development
- 12h15-12h30: Betina Ferraz (CGEE-Brazil). TTS Initiative: science networks as important vehicles for mobilizing and sharing knowledge
- 12h30-12h45: Abdelaziz Benjouad (Vice President of International University of Rabat). (Social responsibility of the university in sustainability
- 12h45-13h00: Jean Loup Guyot, le service National d'observation - SNO HYBAM sur les grands fleuves du bassin Atlantique, un dispositif de recherche de la coopération Sud-Nord
- 13h00 - 14h30: Lunch



- 14h30-16h00

#### **Session IV: Dialog Towards Sustainable Development: regional cooperative approach and avenues**

The international meeting “Climate, Sustainability and Development - pathways to cooperation under science, technology and innovation” is a joint effort of several institution in Africa, Latin America and Europe. The success of the meeting can be understood under the idea of the dialogue table proposed, which main goal is the discussion and design of a positive agenda concerning regional cooperative initiatives. Diverse and complementary scientific communities, in partnership with a wide variety of stakeholders, are better prepared to play a major role in the conception of sustainable development. It contributes in particular to the identification of sustainable development scenarios at different subjects and scales. This session will be the opportunity for the scientists and stakeholders to take into account the existing knowledge, to explore and to identify innovative solutions regarding cooperative acting and a future institutional shared agenda

Moderators. Betina Ferraz (CGEE-Brazil), Rajae Chafil (Minister of Environment-Morocco)  
Abdel Sifeddine (IRD-France)

Reporters. Alessandro Rizzo (Espace DEV/IRD-France) and Hanan Bennoudi (University Ibn Zohr)



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### **Portugal**

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- João Guerreiro, UniversityofAlgarve

### **UAF Bureau Maghreb**

- Cristina Robalo-Cordeiro

16h00-16h30

## **Adoption of Agadir Declaration**

20h00: Gala Diner



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- Minister in charge of the Environment-Morocco
- Minister of Agriculture, Maritime fishing-Morocco
- Minister of Foreign Affairs and cooperation-Morocco
- Wilaya of Souss Massa
- President Ibn Zohr University-Morocco
- President Director General of IRD-France
- President Center for Strategic Studies and Management in Science, Technology and Innovation
- The National Council for Science and Technology-Mexico
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- President of University of Niger
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- Ambassador of Peru in Morocco– Peru Ambassador to Marocco
- Ambassador of Portugal in Morocco– Portugal Ambassador to Marocco
- Ambassador of Spain in Morocco– Spain Ambassador to Marocco
- Ambassador of Tunisia in Morocco– Tunisia Ambassador to Marocco



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- **Maha El Ghilali**, IbnZohr University-Morocco
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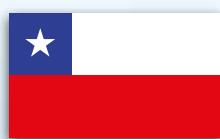


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- **Fatima Zzahra Ahachoum.** Ibn Zohr University-Morocco
- **Zohra Nikki,** Ibn Zohr University-Morocco
- **Mohamed Bouhsous.** Ibn Zohr University-Morocco
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#### Niger

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