



Cátedra UNESCO "Agua y Educación para el Desarrollo Sostenible"
FACULTAD DE INGENIERÍA Y CIENCIAS HÍDRICAS
UNIVERSIDAD NACIONAL DEL LITORAL

Postgraduate Course and Professional Development Seminar: " Integrating Global Change knowledge to decision-making processes: a transdisciplinary approach in the La Plata Basin: a transdisciplinary approach"

8 to 14 September, 2019 - Santa Fe, Argentina

The Inter-American Institute for Global Change Research (IAI) and the School of Engineering and water science (FICH) from the *Universidad Nacional del Litoral* (UNL) announce the *Seminario of Professional Development (PDS): "Integrating the knowledge of Global Change into the decision-making processes: a transdisciplinary approach"*. The seminar is funded by the IAI with resources from the National Science Foundation (NSF) of the United States. Other collaborators are the World Meteorological Organization (WMO), Americas and the UNESCO Chair Water and Education for Sustainable Development.

¿What is it? The purpose of the postgraduate course and international seminar is to contribute scientific knowledge, practical experiences and inter and transdisciplinary approaches to address complex problems of global change of socio-economic relevance to young scientists in the Master and Doctoral programs of the FICH/UNL and other universities, as well as decision makers and other professionals from the public and private sectors.

Background: The importance of strengthening human and institutional capital that can address complex socioeconomic problems of global change in the La Plata Basin

The combined impacts of technological, socio-economic and global change in agriculture show new challenges for water resources management, agriculture and risk management. Addressing these complex challenges requires new integrated approaches and knowledge, as well as practical training that goes beyond the curriculum of most academic programs.

The IAI, the FICH/UNL and other partner organizations, propose a postgraduate course and a cutting-edge international seminar whose content seeks to contribute to the development of a new academic curriculum of a Master and Doctorate program. The program will furnish practical, inter and transdisciplinary training in water resources, climate, soil and agricultural sciences, risk management, social vulnerability and other topics of the sciences of global change. The initiative seeks to promote the academic training of graduate students more in line with the needs of public and private policies. The activity will also promote dialogue and stimulate collaboration among academics, managers, decision makers and other professionals. The program will provide solid scientific information, but will also discuss the demands of policies, the participation of different social actors and interested sectors, and the science-policy interface of water resources and agriculture. The seminar seeks to train future leaders in science, politics and public and private management.

Why an inter/transdisciplinary program? The complexity of the phenomena and problems generated by global change and its impacts on society have socioeconomic, biophysical and technological dimensions. In order to approach them properly, interdisciplinary approaches are needed which integrate information from different scientific areas and other types of knowledge. Moreover, it is extremely important to consider the decision-making demands of the political and productive sectors, facilitating effective communication among scientists with policymakers of production and sustainability. Nonetheless, the interaction between scientists from different disciplines, society and decision makers is not trivial. The seminar offers a space for dialogue and collaboration based on the presentation and discussion of scientific knowledge, practical experiences, management needs, the decision-making process and the search for solutions to key problems of the different sectors.

Who is it for? Profile of the participants

Up to 40 participants will be selected from:

1. university institutions (postgraduate students, young teachers and researchers) and from the scientific-technological sector;
2. state agencies at different levels (regional, national, provincial and municipal);
3. organizations and companies in the productive sector (associations, cooperatives, etc.);
4. civil society (non-governmental organizations);
5. of the independent professional field.

The call is open to all professionals from the 19 countries of the IAI; however, for the regional issues, preference will be for participants from the countries of the *Cuenca del Plata*.

General objective

Contribute to the comprehensive training of young scientists and professionals in the knowledge of relevant aspects of Global Change¹ associated with the management of water resources, agriculture and risk management, as a contribution to making informed decisions that enable sustainable environmental management in the *Cuenca del Plata*.

Specific objectives:

- 1) Provide knowledge bases from different scientific disciplinary perspectives towards an integrated approach to Global Change along with other types of knowledge and practical experiences.
- 2) Develop skills and methodological tools for research work and support the making of policies in transdisciplinary teams².
- 3) Create spaces for reflection that promote an improvement in the dialogue between science and politics for decision making.

Programme and methodology:

The 60-hour hourly load course combines theoretical, methodological and practical aspects of global change sciences, in particular: climate change and variability, agricultural sciences, aquatic resources, environmental science, etc. The presenters propose exercises and working groups that will explore: a) theoretical aspects: climatic variability; climate change; the climate, impact relationship; vulnerability and risk; the communication of climate risk to society; prevention and adaptation to the effects of climate change and variability; b) methodological aspects: data sources and use of climate information; analysis tools (for instance: GIS, introduction to modeling); use of climate information in decision making: study cases; c) practical aspects: applications of information and learned methodologies; and work in small groups to prepare brief essays or projects based on recommended literature and group discussions.

The essays and projects will serve as a course evaluation exam in order to receive academic credits for master and doctoral programs. The topics to be addressed will include:

1. Common global and regional challenges
 - 1.1 Introduction of the 2030 global agenda, Paris agreement, Sustainable Development Goals, etc.
2. The climate system
 - 2.1 The Climatic System as part of the Earth System: oceans-atmosphere, soil-atmosphere interaction
 - 2.2 The role of the oceans as sources of climate variability
 - 2.3 Variability and climate change
 - 2.4 Vulnerability and risk: adaptation and mitigation measures
 - 2.5 Global climate observation system and databases

¹ Global change are the long-term chemical, biological and physical processes and cycles of the terrestrial system that suffer continuous alterations, both of natural origin and induced by man (agreement for the creation of the Inter-American Institute for the investigation of global change - IAI).

² Transdisciplinarity is a reflective research process that addresses social problems through interdisciplinary cooperation and cooperation between researchers and non-scientific actors; Its objective is to enable mutual learning processes between science and society; Integration is the main cognitive challenge of the research process.

3. Interactions and feedbacksoil-climate
 - 3.1 The component of the Earth's surface of the Earth System. Interactions and feedbacks soil moisture-climate
 - 3.2 Changes in land use and the carbon cycle. Influence of global change on land use and its impacts on the global carbon balance. Carbon sequestration in terrestrial ecosystems. Carbon dynamics and provision of ecosystem services
- 4.1 Monitoring of hydroclimatic status and early warning
- 4.2 Integrated research on global change: the collaborative shift in climate science
- 4.3 Social risk management
- 4.4 Conflict management
5. FORO: Building the dialogue between Science and Politics in the framework of Global Change
6. Public policies for the achievement of water security
7. Dialogue between agriculture and water in the plain: Learning a new language.

The course will also include the **Science-Policy Forum "Building the dialogue between Science and Politics within the framework of Global Change"** (September 12th, 2019), whose objective is to specify a space for reflection and dialogue about the interface between science and policy, analyzing the current situation and proposing ideas which promote a strengthening of the links between the actors and their integration, contributing to the design of public policies that, in a context of Global Change, aim at sustainable development. The forum is intended for a wide and diverse public from academia, the governmental sector and civil society.

Application information

Language requirement: The program will be carried out in Spanish. Nevertheless, some discussions and the bibliography may be in English. Therefore, it is preferable that applicants be proficient in one and have a good understanding of the other language in order to understand, communicate and actively participate.

Application process to the Postgraduate Course and International Seminar

Access to the application webpage (<http://www.iai.int/en/capacity-building/detail/iai-santafe-pds>) in order to download the APPLICATION FORM.

2. Complete the form and send it with a résumé of up to 2 pages and a letter of reference from your academic or work supervisor. They are 3 files in total to send the complete application to the email: iai.santafe2019@dir.iai.int

3. Make sure your request was received. If you do not receive a confirmation e-mail from the IAI, contact the IAI at iai.santafe2019@dir.iai.int

Applications must be submitted until **July 15th, 2019 (8:00 hours Montevideo, Uruguay)**.

Official website of the seminar:

<http://www.iai.int/en/capacity-building/detail/iai-santafe-pds>

Financial support

Total or partial travel support is available for a limited number of participants. The participants will be selected according to the merit of the application and the relevance of academic and/or professional and institutional work for the topics of the seminar. In addition, co-financing from the applicant's home institution is recommended and considered.

Certificates and academic credits

Participants who actively participate in all sessions and activities will receive a certificate of completion of the seminar. For graduate students, upon successful completion of the course and assessment, the UNL will grant them academic credits. The accreditation process of the credits must be processed by each student in their respective universities.

If you need more information, contact us in the following e-mail: iai.santafe2019@dir.iai.int