



*The barriers to sustained **trans-disciplinary** engagement*

LAC and EU scientists and CC

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What is transdisciplinarity?

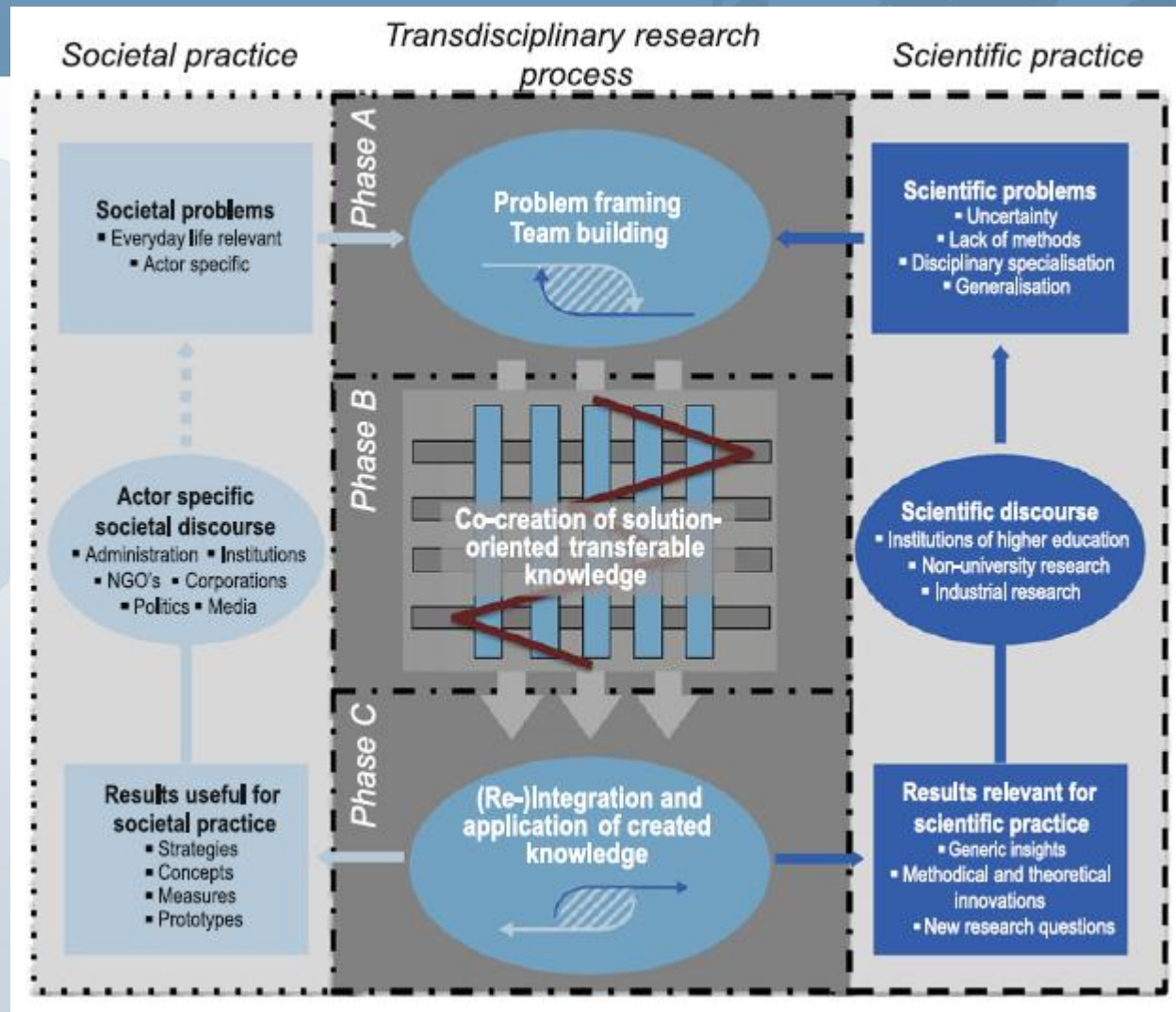
- **Transdisciplinarity** is a reflexive, integrative, method-driven scientific principle aiming at the solution or transition of societal problems and concurrently of related scientific problems by differentiating and *integrating knowledge from various scientific and societal bodies of knowledge* (Scholz, 2011).



Ideal-typical conceptual model of transdisciplinary research process

Three phases are identified (Lang et al., 2012):

- Phase A: Collaborative problem framing and building a collaborative research team.
- Phase B: Co-creation of solution-oriented and transferable knowledge through collaborative research
- Phase C: (Re-) integrating and applying the co-created knowledge



Conceptual model of an ideal-typical transdisciplinary research process.
Source: From Lang et al., 2012.

Design principles for transdisciplinary sustainability research (Lang et al., 2012):

- Phase A: Collaborative problem framing and building a collaborative research team.
 - Build a collaborative research team
 - Create joint understanding and definition of the sustainability problem to be addressed
 - Collaboratively define the boundary/research object, research objectives as well as specific research questions, and success criteria
 - Design a methodological framework for collaborative knowledge production and integration

- Phase B: Co-creation of solution-oriented and transferable knowledge through collaborative research
 - Assign and support appropriate roles for practitioners and researchers
 - Apply and adjust integrative research methods and transdisciplinary settings for knowledge generation and integration
- Phase C: (Re-) integrating and applying the co-created knowledge
 - Realize two-dimensional integration
 - Generate targeted products for both parties
 - Evaluate scientific and societal impact

CASE STUDY: ENSOCIO-LA Project

ENSOCIO-LA

**Strategic. Sustainable
Cooperation with Latin America
(Climate Action. Resource
Efficiency and Raw Materials)**

**The ENSOCIO-LA project is a Coordination and
Support Action funded under ENV.2013.6.5
Knowledge platforms, networking and uptake
of research results for more strategic
international R&I cooperation**

**ENSOCIO-LA aims at
establishing sustainable
and integrated research
and innovation
cooperation between
the EU and Latin
American Countries
in areas of climate
change, resource
efficiency and
raw materials**

Concept & objective

ENSOCIO-LA will help improve dissemination and the exploit research results in the areas of climate change, resource efficiency and raw materials. This will be achieved through networking twinning of existing multilateral and bilateral projects funded from different sources, through the development of efficient inter-schemes between science, industry and users and the joint elaboration of future research priorities and joint activities. ENSOCIO-LA will provide a network of networks.

These objectives will be pursued through the following project components:

- ▶ Review of initiatives, networks and funding opportunities (WP1)
- ▶ **Climate change focussed actions (WP3)**
- ▶ Resource efficiency focussed actions (WP4)
- ▶ Raw materials focussed actions (WP5)
- ▶ Proposals for the joint research and innovation agenda, in policy and funding (WP6)
- ▶ Networking, communication and dissemination (WP7)

...with the following specific actions:

- ▶ Identification and clustering of EU funded projects with high value and relevance to the regional needs, as well as developing synergies with projects funded by other EU instruments as part of FP7
- ▶ Identification of tools and instruments for enhancing cooperation at a more strategic level and exploitation of results
- ▶ Concrete proposals for upgrading the joint research and innovation agenda at more strategic levels
- ▶ Linking major EU projects or clusters with projects/networks in the region and with users
- ▶ Identification of potential other sources of funding and mobilisation of financial means from various sources

Project Team

Many partners of ENSOCIO-LA are funding agencies and hence are part of the political dialogue, colead the JIRI working groups and participate in the EU-LAC S&T Senior Officials Meetings and summits, as well as partners of bilateral and bi-regional INCO projects under FP7. The ENSOCIO-LA team comprises:

Samui France SARL, SamuiFr, France (www.samui-france.com)

Methodology Centre for Environmental Assessment, Metcenas, Czech Republic (www.metcenas.eu)

Universidad Politécnica de Cartagena Universidad Politécnica de Cartagena, UPCT, Spain (www.upct.es)

Deutsches Zentrum fuer Luft- und Raumfahrt Deutsches Zentrum fuer Luft- und Raumfahrt, DLR, Germany (www.dlr.de)

Ministerio de Ciencia, Tecnología e Innovación Productiva, MINCYT, Argentina (www.mincyt.gob.ar)

Comisión Nacional de Investigación Científica y Tecnológica, CONICYT, Chile (www.conicyt.cl)

Departamento Administrativo de ciencia, tecnología e innovación, COLCIENCIAS, Colombia (www.colciencias.gov.co)

Consejo Nacional de Ciencia y Tecnología, CONACYT, Mexico (www.conacyt.mx)

Environmental Research Institute, IVL, Sweden (www.ivl.se)

World Association of Industrial and Technological Research Organisations – Caribbean Industrial Research Institute, WAITRO – CARIRI, Trinidad & Tobago (www.cariri.com)

Fraunhofer Institute for Interfacial Engineering and Biotechnology, Fraunhofer, Germany (www.igb.fraunhofer.de)

Inter American Institute for Global Change Research, IAI, Brazil (www.iai.int)

Helmholtz Institute Freiberg for Resource Technology (HIF), HZDR, Germany (www.hzdr.de/freiberg)

Centro de Investigación Científico Tecnológico para la Minería, CICITEM, Chile (www.cicitem.cl)



ENSOCIO-LA Project. Some priorities and barriers were identified on CC

PRIORITIES AND BARRIERS

An important focus was given to **future policy needs**.

- **Implementation of science-knowledge into the process of decision making in funding programmes**

Calls for proposals through EU-CELAC funding programmes should specifically include knowledge-networks organized to co-explore and co-produce useful climate information, and the actual use of climate knowledge in decision making, policy elaboration and planning.

- **Communication/dialogue between public and private actors, in actions with added value (synergy)**

Despite an improvement in public-private dialogue, there is still a clear gap between public research and private needs. Especially in the framework of climate services, there is a clear need of intermediate actors (private consulting companies), which can dedicate a large part of their time identifying private needs, as well as collaborating with public research groups in order to translate knowledge into products, services, for decision-making and thus actions.

- **Adequate legislation (comprehensive & scientifically-based policies)**

No common legislation to address the problems of biodiversity and climate change in the region. Some examples, Forestry: to prevent deforestation and encourage reforestation, Agriculture: what policies should be applied for adapting agricultural production to climate change shocks (including erosion, floods, wildfires), Sustainable cities: investment in infrastructure for adaptation (floods, salinisation of water, urban heat island).

- **Capacitate technical advisors and local scientists to policy makers**

It is recognized that the dialogue between scientists and decision makers is not simple. A way to encourage this dialogue through the training of technical advisors is proposed, as a means of transmitting scientific knowledge to achieve concrete actions.

- **Availability of information for decision makers: Water regime and balance, climate and biodiversity information. A common observatory and common methodology in the region**

In some cases, there is an excessive concentration of knowledge in a single organization (such as environmental authority). A common platform and methodology could be considered for improving the availability and access to the information. The application of standards, such as the proposed by INSPIRE European Directive, should reinforce the interoperability and sharing the data.



GAPS AND BARRIERS in the translation of knowledge to stake holders/policy makers and reinforcing their participation

- **To promote a structured and multi-stakeholders dialogue** to reinforce the mutual understanding.
- To encourage a **regional joint action** to provide an opportunity for **building cross-boundary partnerships**, opening access to information, and transferring skills and technologies to decision makers.
- **To translate the technical reports to local languages.** Trying to eliminate one barrier in the process of knowledge transference.
- **To increase funding in science capacity.** Raising the profile of existing experts, by training, in order to support the communication of their findings to decision makers.

Lack of engagement of people

Scientists and governmental functionaries complain about the lack of public engagement and participation in the debate of science and technology issues beyond the denial of particular policies. Although participatory exercises manage a wide agenda of issues, they have usually been technically and politically framed and they have worked on an up-down orientation which should be overcome.

Use of basic research, knowledge related to climate and hydrology on the problems (management, use of resources)

Basic research and knowledge on climate and hydrology is a necessary condition but it must extend its scope to be relevant to decision/making in climate sensitive sectors. That implies to explore other areas of basic research needed to make knowledge usable.



IDEAS TO ENHANCE THE COLLABORATIVE RESEARCH

The **equity and strong collaboration** from both communities could be achieved through implementing several research, training, education, and outreach strategies.

Particularly, four key components are identified:

- 1. Address **CC & Biodiversity** disparities through collaborative efforts that support the successful implementation of the **joint** work.
- 2. Contribute to the science of **CC & Biodiversity** disparity research by building on the strengths of the collaborators.
- 3. Attract and cultivate students, researchers, and **CC & Biodiversity** professionals who are dedicated to eliminating disparities.
- 4. Establish and enhance community-academic partnerships through community engagement and outreach activities.

Thank you for your attention !

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