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# Community with practices coordinated by corporate researchers for promoting development compatible with the regional climate – ¡Adaptation!

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## **Abstract**

*The objective of this article is to present the innovative advancement for interaction of academic and other actors as promising strategies for effectively implementing the recommendations of the policies of adaptation to the Basin of Rio da Prata (BRP). These recommendations are based on the synergy project and are meant to maintain and improve the resilience of the ecologic and social multi-frontiers basin in order to cut down the vulnerable climatic changes. The main objective of the interactive proposal is to improve the response of the local communities, taking into consideration the interest of the civil society, government and private sector. This can be achieved by (i) adoption of what has been said by the corporate researchers; (ii) establishment of an active community for a development compatible with the climate and sharing the experiences of each community of that network; and (iii) engaging the local youth in the network*

*looking for new ideas able to manage the climatic variety in a mutual dynamic solidarity. The corporate researchers use a social technology for development of solidary economy. By adapting the corporate researchers from the beginning can facilitate their functioning and open up innovative opportunities for work and engagement of the youth.*

#### **Keywords**

*Social innovation, local communities, Synergy, solidarity economy.*

### **Comunidade de práticas coordenada por pesquisadores cooperados para promover desenvolvimento compatível com o clima – ¡Adaptação!**

#### **Resumo**

São apresentados avanços inovadores para interação entre acadêmicos e outros atores como estratégias promissoras para implementar efetivamente recomendações da política de adaptação para a Bacia do Rio da Prata ( BRP). Essas recomendações surgiram do projeto Sinergia e buscam manter e melhorar a resiliência ecológica-social dessa bacia transfronteiriça para reduzir suas vulnerabilidades para as mudanças climáticas. O principal objetivo da proposta interativa é melhorar a capacidade de resposta das comunidades locais, considerando os interesses da sociedade civil, governos e setor privado. Isto pode ser alcançado através de: (i) adoção do que descrevemos como pesquisadores cooperados (PC), (ii) criação de uma comunidade de práticas (CP) no desenvolvimento compatível com o clima por meio do compartilhamento das experiências de cada uma das comunidades que usam a rede de PCs como uma espinha dorsal e (iii) envolvendo a juventude local no processo de rede para fazer surgir novas ideias, bem como expor e envolvê-la na variabilidade climática e na solidariedade. Discute-se também como adaptar os princípios dos pesquisadores da Cooperativa Coorimbatá que já foram testados em iniciativas anteriores com algumas comunidades locais dentro da BRP. O PC é uma tecnologia social (TS) usada para o desenvolvimento da economia solidária. Adotar o PC desde o início poderá facilitar o funcionamento da CP e levar oportunidades inovadoras de trabalho e engajamento dos jovens dentro da CP, assim como poderá ser um caminho para reproduzir a experiência de pesquisadores cooperados fora do RPB.

#### **Palavras-chave**

Comunidades locais. Economia solidária. Inovação social. Sinergia.

## **INTRODUCTION**

At the proposal of the United Nations Conference On Sustainable Development- Rio + 20 (UNITED NATIONS, 2012) the heads of State and Government resolve to work together for a prosperous, secure and sustainable future for our people and our planet and they committed to making every effort to accelerate progress in achieving the internationally agreed development goals, including the Millennium Development Goals by 2015, thus improving the lives of the poorest people. They observe that, despite efforts by Governments and non-State actors in all countries, sustainable development remains a distant goal and there remain major barriers and systemic gaps in the implementation of internationally agreed commitments. They acknowledge that a green economy in the context of sustainable development and poverty eradication should protect and enhance the natural resource base, increase resource efficiency, promote sustainable consumption and production patterns, and move the world toward low-carbon development.

Even though many companies produce in an increasingly more efficient way, transferring know-how and generating jobs for highly qualified people, this does not pretend to deal with a developmental policy.

Kesselring (2007) shows the example of transnational corporations that increase their participation at the global market and reduce employment at the same time. Is this real development? He reflects on human ethics, politics and development and underlines that, in ethical terms, when legitimating the rules for distributing essential social and political benefits, it is necessary to guarantee that all human beings have identical dignity and autonomy. According to Thomas Kesselring “a policy which does not share this supposition ends up being a mere policy of power and is inconciliable with an authentic policy for development” (KESSELRING, 2007, p.321)

Thus considering the ethical aspects to be discussed in Rio + 20 under the theme Green Economy, we underline the importance of reinforcing and applying Solidary Economy as fundamental to guarantee economic, social and environmental sustainability. Solidary Economy reappears in recent years to reassume the historic fight of workers as a defense against human labor exploitation and as an alternative to the capitalist way of organizing social relations among human beings and between these with nature. From Solidary Economy have emerged practices of economic and social relations which immediately propitiate survival and quality of life for millions of people in different parts of the world (FÓRUM BRASILEIRO DE ECONOMIA SOLIDÁRIA, 2003).

Next are presented some innovative network operating strategies, based on principles of Solidary Economy, that attend to the Objectives of Development of the Millennium and that have promoted profound changes in different entities, propitiating integrated action between solidary economic undertakings, universities, governmental sectors and private enterprises.

## **CLIMATIC CHALLENGER AND INNOVATIONS IN RPB**

### **The RPB and the climatic challenge**

Proposals to protect socio-ecological systems by changing the institutional rules of use and the way these rules are monitored and enforced frequently focus on a single level of social interaction. Social institutions (i.e. rules) linking multiple levels are essential for the long-term protection of ecosystems (BRONDIZIO, et al., 2009; BERKES, 2008).

An increasingly globalized world requires institutions that link the local level to the various higher levels of social and political organization (BERKES, 2008). As expressed by Cash et al. (2007) in the context of co-management, the complex nature of cross-level resource use systems

requires institutional arrangements that facilitate the co-production, mediation, translation, and negotiation of information and knowledge within and across levels.

Therefore, institutions and actors that facilitate cross-level co-management become an important form of social capital, referred here as the value of trust generated by social networks to facilitate individual and group cooperation on shared interests and the organization of social institutions at different scales; surfacing their value as social networks mediating shared interests at the levels of the individual, communities, and society as a whole (BRONDIZIO et al., 2009).

Such social capital is much needed to tackle issues of mitigation and adaptation to climate change, where the need for multilevel and cross-scale interactions has become undeniable. For example, ineffective results related to the implementation of the United Nations Framework Convention on Climate Change (UNFCCC) serve as a mirror that reflects the failures of technical assessments and the shortcomings of conventional top-down environmental co-management. An overview of the ongoing search for answers to climate change dilemmas leads us to conceive possible more creative, responsive and socially inclusive strategies. The academic community should help governments and social groups to realize the risks involved with climate change and turn these into opportunities for collective learning through a fair negotiation process.

Global interlink ages associated with climate regimes mean that no region in the planet is likely to be spared of the consequences of anthropogenic global warming, even areas located relatively distant from the main economic and industrial centers, such as remote areas of the RPB, including the Pantanal wetland. Significant portions of the Pantanal flood plains (as much as 70%) are submerged from four to eight months each year by water depths from a few centimeters to more than two meters (PCBAP, 1997). As a result, the Pantanal functions as a large reservoir that stores water from the surrounding

plateaus during the rainy season and then delivers it slowly to the lower sections of the Paraguay River (GIRARD, 2011).

Beyond carbon storage, wetlands provide a range of environmental services, including water filtration and storage, erosion control, a buffer against flooding, nutrient recycling, biodiversity maintenance, and a nursery for fisheries. In this specific case, the Pantanal has been recognized as one of the most important tropical wetland in the world and was officially designated as Biosphere Reserve by UNESCO in 2000. It is a complex mosaic of ecosystems that sustain an array of species from the Amazon, Savanna and Chaco biomes. Nonetheless, the Pantanal is also one of the most threatened socio-ecological systems on earth mainly because of changes in land use and the implementation of infrastructure projects, such as damming, resulting in, water pollution, increased siltation, modification of natural cycles, causing habitat and biodiversity losses enhanced by the lack of conservation units. Most of the economic pressures and development conflicts occur in the Brazilian portion of the Pantanal region, where the local ecosystems have been impacted by uncontrolled urban and agro-industrial expansion in the surrounding plateaus, as well as by the intensification of agriculture and uncontrolled use of agrochemicals within the floodplain itself (WANTZEN et al., 2008)

Anthropogenic pressures in the river basin resulting in soil erosion, siltation and biodiversity losses are likely to be increasing. These threats will likely be magnified by the major disturbances in the regional climate due to global warming. The scientific community has actually identified a series of potential consequences to climate change in South America, which includes the salinization and desertification of agriculture lands, savannization of forested areas and a reduced availability of water (IPCC, 2007).

Future scenarios of climatic change produced by Marengo et al. (2010) with regional climate

models (HadRM3P, Eta CCS and RegCM3), for the West Central region of Brazil, indicate a trend of reduction in precipitation (according to one model) and high probability of increase in temperature through the whole year (according to the three models). Marengo et al. (2011) have also estimated likely changes to the RPB between 2011-2040 and an increase of 1.8°C in the annual temperature (1.2°C in the summer and 1.8°C in the winter) and a reduction in annual rainfall of 2.1% (-0.7% in the summer and -11.9% in the winter, which is the dry season). The authors warn that further research is needed to assess the localized impacts of droughts and floods, in particular changes in the frequency of extreme events.

Aware of this challenge, the Pantanal Research Center have conducted since 2008 the Sinergia Project, a platform that aimed to connect and stimulate cross-scale, multilevel and supra continental cooperation among scientists, governments, civil society organizations and private sector representatives. Sinergia aims at contributing to the construction of the state of the art of climate science and collaborative design of actions to address RPB climate vulnerabilities and adaptation to climate changes.

The main collaborative results of Sinergia consider four major themes: agriculture; water resources e energy; health e cities; forests e biodiversity and emerged from debates among the participants – scientists as well as other social actors- in a participatory process that occurred during 5 rounds of international meetings. Meeting's participants from civil society, government, private and academic organizations came from Argentina, Bolivia, Brazil, Paraguay and Uruguay. The main recommendations that have emerged from this process are: (i) protection, conservation and restoration of the headwaters region and vegetation of the upper portion of the LPBR through economic and social incentives; (ii) basin early warning system integrating weather events, hydrological and climatic previsions in the Basin to reduce economic losses related to extreme events; (iii) good agricultural and

livestock practices including low carbon practices to potentially increase farmer income; (ii) specific bioclimatic monitoring of diseases in the basin with priority for dengue control, as well as other actions related to the promoting of climate compatible development.

### **Innovative Approach - Cooperated Researcher (CR)**

According to Kesselring (2007) cooperation for development, alongside with interchange of experiences favors the exchange of know-how, provokes reciprocal processes of learning, amplifies our horizons, leads to peace, intercultural understanding and elimination of resentments. One way of breaking the persistent tendency toward globalization would be the organization of international partnerships for development. "Such partnerships should stimulate citizens in privileged nations to become more involved with the less privileged forms of life, by decidedly helping them to improve" (Kesselring, 2007, p.278).

Solidarity Economy is based on the idea that the main virtue of any economic system is to promote cooperation among people, families, communities and countries based on the idea that humanity is composed of different people with different qualities and defects, which when associated, cooperate and promote the progress of society (SINGER, 2010). Considering that Solidary Economy Enterprises have to negotiate in markets where most business are capitalists in a highly competitive and individualistic society, they find great difficulties in being competitive in terms of quality, efficiency of products and services when self-management principles are priority.

As mentioned by Singer (2010), the main challenge for the people who work in the self-managed companies it's to keep the daily and technical knowledge's of individual work and adds new collective responsibilities. In this transition process some skills have to be encouraged and incorporated for a co-management working. Members of these

companies are usually unaware, including staff in the administrative departments (administration, accounting, law, economics, engineering, among others). In these model of work is need edit improve the efficiency and quality of products and services.

Observing this context, Barbieri and Rufino (2007) indicates that the incubation process of these self-managed companies demands innovative ways of interaction, participation and influence of the College Incubators.

During the 1970s and 1980s there was a large proliferation of researchers groups in favor of Appropriate Technology and significant production of technological artifacts, with the incorporation of cultural, social and political discussion, creating a proposal to change the style of development (ITS, 2004). Following this trend, since 1978 researchers at the Federal University of Mato Grosso (UFMT) developed research on appropriate technologies that finally resulted in the launching of the role of Cooperated Researcher (CR), an innovation in social technology (OLIVEIRA; CANEPPELE, 1998; PRIANTE FILHO, 1995; PRIANTE FILHO et al., 1997; PRIANTE FILHO et al., 1998a).

In 2000, these UFMT researchers, along with the members of a cooperative of fishermen "Cooperativa de Pescadores e Artesãos de Pai André e Bonsucesso" (Coorimbatá), introduced scientific research in the statute as one of the objective of the cooperative (PRIANTE FILHO, et al., 2007). At this moment, the Cooperated Researcher (CR) emerges as an innovative form in work organization that created new spaces in which academics and fishermen and craftsmen of traditional communities from the urban area, have joined voluntarily in the same business. The work context then became even more complex promoting an intellectual discomfort that favored a process of "autoincubation" of all that were involved, according to Priante Filho et al. (2007).

Within this ergological approach, the framework of Coorimbatá activities is conceived by the coop

members from their own universes and from universes of collectively structured discourses prepared and processed by all. In this kind of work, we do not recognize anymore what we are, but what we do.

The ergological prospect forces us to understand and act always in new universes (the work environment never repeats itself from one day to another), permanently maintaining a space for debate and exchange of life and work experiences as well as concepts. The resulting work place is always imperfect, always provisional and contingent, in relation to the related experiences, but essentially fostering collective building from these debates (SCHWARTZ; DURRIVE, 2007). With the voluntary integration of academics and traditional communities in the same business (in the case of Coorimbatá), actors from such different backgrounds are faced by the need to align their personal activities with their collective activities in order to get the best experience of each one, no matter how small it can be.

Reflecting upon the Coorimbatá experience so far, climate change provides invaluable opportunities to reconsider development paradigms, especially our relationship patterns with businesses, policies or even neighbors. Even though most governments of RPB developed policies to mitigate climate change, they are barely beginning to focus on adaptation.

Based on the synergies that could emerge from the Sinergia project itself and from the Coorimbatá experience, we conceived that the propagation of the CRs initiative, articulated in CoPs might be an efficient strategy to help implement proposals for adaptation policies presented to the RPB decision makers at various levels.

The CR has emerged from Coorimbatá in Brazil to tackle development challenges. Researchers were included as effective members in the fishermen cooperative included to plan specific investigations/activities to foster the sustainability of the cooperative. CRs have proven to be a safe

and reliable mean of promoting wide-ranging articulations, integrating companies, academic agents, governments and NGOs in real collective efforts to solve numbers of the cooperative local and regional development problems. They proved effectiveness in establishing strong trust relationships between actors of different sectors and scales of action. This practice was rewarded in the Millenium Development Goals - Brazil attending the 7<sup>th</sup> and 8<sup>th</sup> goals of Environmental Sustainability and Global Partnership (PRÊMIO ODM BRASIL, 2007) we said, Sinergia participants came from Argentina, Bolivia, Brazil, Paraguay and Uruguay, and also from Canada and UK, being active at many sectors and scales.

A community of practice (CoP) is a network made up of individuals and organizations that share common concerns or interest in a particular topic (focus), who come together to address a specific challenge, and further each other's goals and objectives in a specific topic area (shared practice). CoPs respond to professional/development needs and are results oriented. They can serve to develop and evolve knowledge, as well as create innovative ideas.

An example of CoP is CoPEH-LAC, the CoP on ecosystemic health in Latin America and the Caribbean. Concerning the involvement of young people, political neglect is high amongst them all over the world, and this is not different in the RPB. Young people have recently demonstrated their ability to use virtual networking technologies to solve issues.

## **DESIGN OF PROPOSED INNOVATION PROCESS**

The aim of this innovation proposal is to increase the capacity and resilience of some of the most vulnerable local communities to climate variability and change and foster a climate compatible development by: (i) introducing Cooperated Researchers (CRs) in their communities; (ii) creating a community of practices (CoP) on climate compatible development through networking among the involved communities and;

(iii) involving young people in the networking process to sparkle new ideas as well as expose and involve them with the concept of development that addresses climatic variability and social solidarity.

The innovation process includes four phases: (phase 1) selection of the 8 most-vulnerable local communities in RPB; (phase 2) convening of meetings to mobilize the communities for the innovation process and selection of their CR; (phase 3) carrying out in Brazil weeklong workshop to train the CRs regarding the role of the CR in the community, the development of CoPs and the participation of young people; (phase 4) the CRs will return to their bases to initiate their activities.

The activities in phases 1 include communication with the actual Sinergia partners to produce the list of communities selected in the five countries involved in the Sinergia project. In phase 2 the proponents of these innovation process will meet the community representatives to: (2.1) build up sensibility to climate change impacts, vulnerability and development opportunities; and (2.2) thoroughly discuss the innovation process and capture suggestions aiming at delivering a conjointly re-designed the proposal, increasing the participation and ownership of the innovation process by these community representatives. During phase 3, the selected CRs will come to Brazil, to build up capacity and learn facilitation techniques to prepare themselves for phase 4.

In Phase 4, the CRs will: (4.1) foster local articulations with companies, academy, governments and NGOs to promote climate compatible development and; (4.2) articulate with the other involved communities to share their problems and evolve common solutions using the networking tools already available in the Internet giving rise to a CoP<sup>1</sup>; (4.3) foster the participation of the young people, using the actions lines devised in the meetings and workshop. Deliverable will consist in an evaluation co-designed with the participants including: (4.3.1) a satisfaction appraisal of the CR performance within

each Local Communities, Governments and Actors (LCGAs); (4.3.2) the number of local articulations and summary of proposed actions to foster local climate development as reported by the local CR; (4.3.3) the number of Internet networking tools used, the frequency and number of participants as well as their profile for each tool to inform on young people participation; and (4.3.4) the number of problems/solutions discussed within the CoP as informed in the social networking applications available in the Internet.

Facilitation in the workshop and meetings will be conducted by experts on dialogue and workgroup using concepts and practices relying on Anthroposophy and Social Ecology. These experts will previously co-design the meetings and workshop as well as collecting contributions from the community representatives and CRs constantly upgrading the innovation process.

Four facilitation experts will accompany the whole innovation process. One expert on public policies and civil society and one expert on CoP will be involved in phases 2, 3 and 4. One expert on climate change, vulnerability and adaptation will be involved in phase 2.

The objectives of this work plan are promoting a CoP oriented to climate compatible development in the RPB and increase resilience and capacity of local communities to cope with their development problems in a long term. The outcome of the process will be a working network of communities from RPB able to join their efforts to discuss and promote their own development.

## **STAKEHOLDER ENGAGEMENT PLAN**

Decision makers will be involved in the innovation process since the beginning. Relying on the networks of Sinergia and Coorimbatá, which already include decision makers, a web of collaborative partnerships will be expanded. Decision makers recognize that participatory approaches involving collective construction and knowledge-sharing are effective in overcoming barriers to sustainable

<sup>1</sup> (<http://www.eit.ufmt.br/gpweb/>)

development, providing economical, ecological and political benefits for society. They will contribute into the development of this proposal during the facilitated meetings of each phase.

They will actively participate in phase 4 and they will be constituent of the local network and of the CoP. They will be maintained informed all the time and will have voice in the CoP discussion and decisions.

They will also be involved in the evaluation process of phase 4. This should warrant their knowledge of the structure of this innovation and their understanding of the role of a CR, of networking and CoP and young people involvement to climate compatible development in their localities/regions. They will be prepared to sustain the CRs lead the CoP with proposals to design relevant policies and to obtain financial support.

## **CAPACITY BUILDING METHODOLOGY**

The Integrated Social Innovation System (Sitecs) focuses on the principles of Social Technology (Social Institute of Technology, 2011). It is a process of institutionalization of the incubation system of Solidarity Economy Enterprises that have been developed in interaction, applied in the interaction and appropriate for the population. This is the main innovation that legitimizes the institutionalization of the performance of the Mato Grosso Federal University on Technological Innovation Office (EIT) as a reference to be reapplied in other regions (New Methodology to Social Technology).

The strategy is based on the incubation system supportive of Solidarity Economic Enterprises of the Extension Program Integrated System for Social Innovation (Sitecs), which runs through the UFMT Technological Innovation Office – Social Technology and Solidarity Economy Incubator (INTECSOL/UFMT), pivotally with the actions of the Cooperative Coorimbatá, Arca Multi-incubator and other partner organizations.

Workshops will be held in Mato Grosso, Brazil, in the area where the current Cooperated Researchers are working with the enterprises incubated by Sitecs.

CRs shall be paid by the Project and will have the duration of the scholarship to structure them in order to continue working in support of the enterprise, regardless of the purse. The management and monitoring of activities of each member of this project will be made through the software project management by WEB (GPWEB), developed by the Brazilian Army, and have implanted in UFMT Technological Innovation Office website ([www.eit.ufmt.br/gpweb](http://www.eit.ufmt.br/gpweb)). Each participant of this project will have a login and password to log all their activities in GPWEB and also have access to all activities and results of the actions of other members of the network.

## **MANAGEMENT OF RISKS AND ASSUMPTIONS**

The research project is expected to help to ensure equitable co-production of knowledge between other participants and the researched and meaningful participation of users in research formulation and practice. Nonetheless, because it will deal with vulnerable people in vulnerable agro-ecosystems in the River Plate Basin, the project requires the acceptance of clear ethical rules (dealing with issues of consent, confidentiality, minimizing harm, avoiding exploitation of participants, as well as cultural and gender sensitivity). The proposed research challenges patronizing attitudes towards vulnerable people and suggests a more reflexive ethical agenda, which includes re-negotiation of questions of difference (related to gender, age, and opportunity) in the form of a dialogue between the researcher and the local groups.

We accept the need for greater normative ‘self-criticality’, which involves ongoing reflexive awareness of the research environment and power relations between the research team and the case study communities to ensure the ethical integrity of the project. Prolonged and sustained engagement

with the researched people will be developed on the basis of earlier relationships established during previous work in the Sinergia Project. To produce evidence that can influence people's lives, definitions of climate change vulnerability and environmental conservation used in this research will be closely linked to local understanding by the vulnerable people themselves.

This proposal attempts to make a practical contribution to the lives of the studied local community dwellers by giving them voice and involving end-users in the data collection and investigative practice. All resources shall be shared between project partners and stored securely, but the final data, in accessible format, as well as the range of case study or training materials and evidence-based good practice guide will be made available to all participants.

## CONSTRUCTING THE FUTURE

At presents the reapplication of the Cooperated Researcher (CR) social technology and the creation of the Community of Practices (CoP) has built itself beyond the RPB. An example of this is the cooperation between Social Technology and Solydary Economy Incubator INTECSOL/UFMT and the Psychopathology Nucleus, Public Policies of Mental Health and Communicative Actions in Public Health of the University of São Paulo (NUPSI/USP). This cooperation results in actions together with the Association of the Community os Remnant Quilombolas of Fazenda Picinguaba, located in the city of Ubatuba on the northern coast of the State of São Paulo, which is creating a cooperative based on the Coorimbatá/UFMT experience.

In the VII Seminar Psychopathology and Public Health and the International Seminar NUPSI/USP: Democratic Inventions in Action, that took place in 2010 at the University of São Paulo, the Cooperated Researcher, due to his participating character integrating the university community, has been recognized as a democratic invention. This Seminar

recommended in its final assembly, the creation and consolidation of an International Network to foment and interact with the Cooperated Researcher. Thus, it consolidates the possibility of our living similar experiences in other regions.

Both South-South and South-North partnerships that have started with the Sinergia project will be strengthened at this process. For the need of this innovation we will work with established partners from Europe (Aberdeen University) and Canada (CINBIOSE/UQAM) while looking to establish new partnerships with US institutions (California State University). In the Southern hemisphere, the Sinergia project has already established partnerships with a wide range of partners such as the local and regional governments, local associations and NGOs, as well as governmental organizations of Argentina, Bolivia, Brazil, Paraguay and Uruguay (for an idea of the range of our partnerships, please see participants list or events in the event section at our website [www.portalsinergia.org.br](http://www.portalsinergia.org.br)). For the needs of this innovation process we will develop partnerships with other actors with similar scope of action as ours such as EcoClimaSol ([ecoclimasol.com](http://ecoclimasol.com)) and projects such as "Strengthening the capacity building and research in environmental economics to study the links between water and climate change". We will also establish partnerships with actors working at a more local scale including communities, small producer associations and local government. We have designed this proposal so we can overcome specific barriers, construct collectively resilient socio-climate solutions in way that reliable social capital can be built among us.

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