

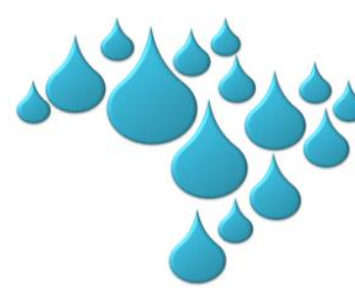
# The scenario of environment and agriculture activities in Santa Catarina State, Brazil: development of technologies, programs and lessons learned

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## INTRODUCTION

Santa Catarina is one of the six most important Brazilian states in the production of food. Thus, the swine production has reached an international competitiveness; it is responsible for 0,8% of the whole production of pork meat and for 26% of the national drove, which means a herd estimated at 6.7 million head. The integrated agro industrial systems contribute around 82% of the total slaughter. Although, Santa Catarina state has been officially recognized as Foot and Mouth disease-free zone, without vaccination, by the World Organization for Animal Health, it is widely known the environmental consequences of the high concentration of pigpens along some watersheds. In order to reduce the environmental pollution caused by the swine production and the lack of adequate sanitation measures, it was elaborated the Swine Project, which is part of the Second Brazilian Environmental Programme (PNMA II), conducted in two river basins: Lajeado dos Fragosos and Coruja/Bonito. Besides, Santa Catarina Rural Project (SC Rural) was also implemented involving the 16 river basin committees due to conflicts in terms of water usages. At federal level, the National Water Agency (ANA) also launched PROGESTÃO, which emphasizes the role of the national government in the process of solving environmental issues, mainly in the water resources and land uses systems.



## RESULTS AND DISCUSSION

Since the beginning of those projects, the systemic approach proposed by them had the focus on the improvement of life quality and environmental conditions concerning water resources management and agricultural production. Some technicians have already understood that cheap technologies must be available to the small farmers along the river basins in order to promote a sustainable development and also to avoid conflicts of interest. Besides, the execution of those actions provided the opportunity to build a compromise among the environmental agency, the technicians, the water users, and the politicians to avoid more environmental degradation. Those kind of initiatives are going to help the decision makers to reflect more about the enhancement of the technologies and the importance of the participation of all stakeholders in the decision making processes.



Figure 1. Biogas tank in Coruja Bonito river basin



Figure 2. Storage tank (residues)

## OBJECTIVE

The Swine Project, SC Rural and PROGESTÃO are tools, which have in common the goal to contribute to the improvement and development of urban and rural areas in a sustainable way, and also promoting, the participation of the whole civil society, local stakeholders and federal, state, local governments in the process through the implementation of governance measures.



Figure 3. River basin meeting



Figure 4. River basin meeting

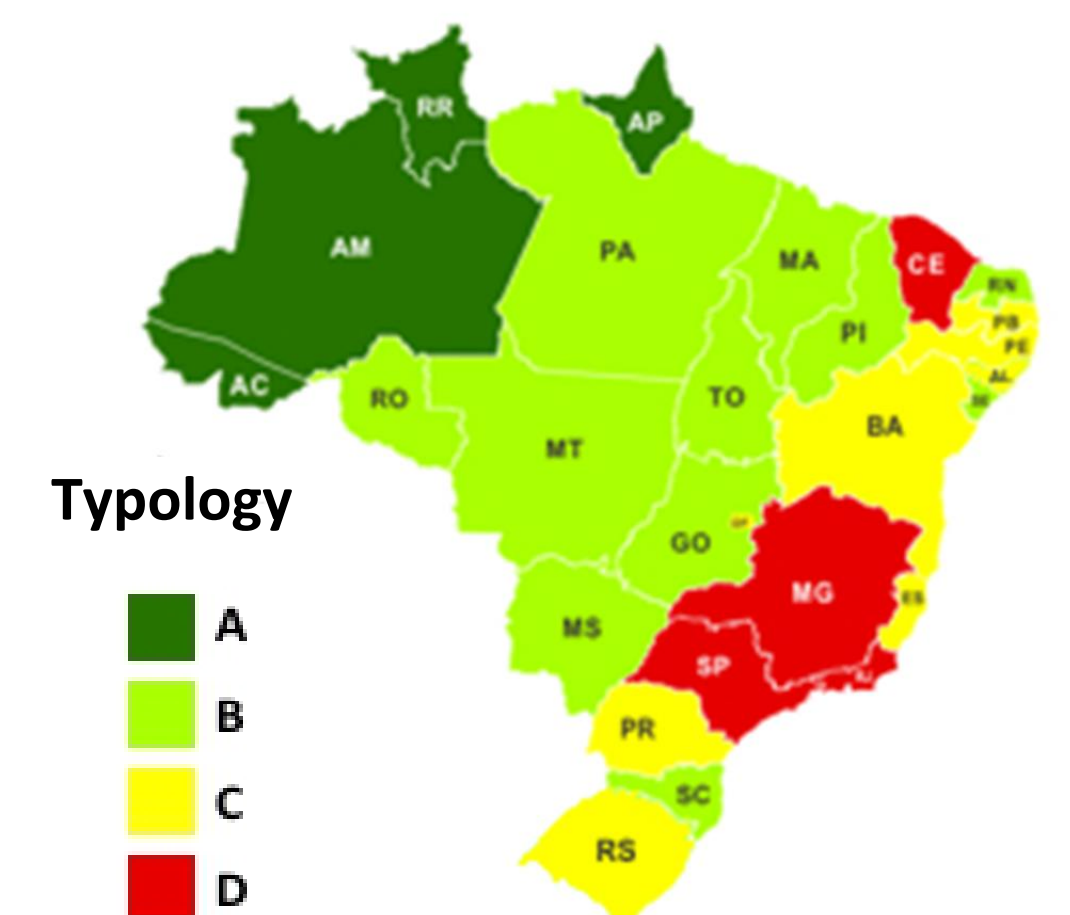


Figure 5. PROGESTÃO

## METHODOLOGY

Based on operational concepts, like landscape, territory, region, place, net and environment, it was intended to understand how those three approaches should contribute to the discussion about sustainability applied to the field and mainly focused on water resources management/agriculture. In the case of Swine Project it was selected two river basins ('Braço do Norte' and 'Concordia') due to the fact that there were many studies and knowledge already developed about massive pork production in both watersheds. SC Rural was conducted over 10 river basins and covered the 16 river basin committees in terms of organization, financial support and implementation of some tools at local level. And, finally, PROGESTÃO as a federal program, is promoting among other activities, the development of capacity building, institutional strengthening and water resources management. So, most of the actions developed by the projects are already finished, as well as the implementation of some interventions along the river basins. On the other hand, PROGESTÃO is on its 2<sup>nd</sup> phase and some local proposals are still going on.

## CONCLUSION

Despite of the projects have been ruled by the sustainable development goal and the sustainability of the activities, the institutions, which are responsible for the implementation of them must interact much more among themselves. Moreover, the expected results will only be feasible, when occur the structuration and enforcement of the Water Resources Management Institution at all levels, the ratification of the Water Resources State Council, and the water resources river basin committees get fully engaged in that purpose. Nevertheless, the whole comprehension of "sustainability" remained too far to be understood by the whole stakeholders. Thus, there is still a long process to be pursued towards that goal. And the tools, which have been used so far, seem to signal that even though we are at the beginning of the process, we are finally on the right track.

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