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Farmers’ and academia’s views”

## Applying the nexus-mesmis methodology in the river Ibirapuitã catchment area, Brazil

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### Abstract

The divergent effects of globalisation seize the world into interdependent and connected economies and those that experience drastic consequences. The economic and social disparity between these two “worlds intensifies bringing disses between strategies and ways to promote sustainable and inclusive growth. These discussions were guided by the World Economic Forum (2011), which indicated economic disparity and global governance failures as risks with serious impact potential to generate other problems. These two risks unfold into three risk groups, scored as an important agenda of policies and actions: the macroeconomic imbalances”, the illegal economy and the “Water-Energy-Food” (WEF) issue. The linked approach arises from the concern to think articulated actions, since a portion of policies, in the national and international spheres, end up bringing solutions to isolated parts of the systems, unbalancing their effects. The Nexus Pampa project brings the emergence of systemic, transdisciplinary and participatory approaches from the perspective of a specific regional reality, the Ibirapuitã River Basin, inserted in the Brazilian portion of the Pampa Biome. This region has suffered socioeconomic and environmental consequences resulting from the agricultural production model based on the maximum productive efficiency of internationalized commodities, bringing to the fore the need for an integrative approach between the WEF link. Thus, based on the MESMIS methodology, Nexus Pampa makes adaptations transforming the tripod of sustainability (social, economic and environmental), object of MESMIS evaluation, in the foundations of the WEF nexus, which represent the dimensions of NEXUS-MESMIS sustainability evaluation. With this approach aiming to represent the heterogeneity of the productive systems and land use of the Ibirapuitã River basin, 121 interviews were conducted. The three dimensions are significantly different from each other. The water dimension represents a high index (87.98%), the energy dimension an average index (63.52%) and the food dimension is very close to the minimum limit of the average index (50.47%). The results obtained demonstrate the applicability of

the NEXUS-MESMIS methodology in measuring the sustainability of the WEF triad in the context of the Ibirapuitã River Basin.

**Keywords:** Nexus WEF, pampa biome, productive systems