



APPLYING THE NEXUS-MESMIS METHODOLOGY IN THE RIVER IBIRAPUITÃ CATCHMENT AREA, BRAZIL

Vicente Celestino Pires Silveira¹; João Garibaldi Almeida Viana; Cláudia Garrastazu Ribeiro; Claudio Marques Ribeiro; Fernando Luiz Ferreira de Quadros; Jean François Tourrand; Jean Paolo Gomes Minella

¹UFMS, Prédio 44, Sala 5110, Santa Maria - RS, Brasil, CEP 97105-900, Postgraduate Program in Rural Extension. vcpsilveira@gmail.com

Introduction

The divergent effects of globalization 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 disseizes 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 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.

Methodology

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.



Figure 1. Nexus Pampa Project – Farmer interview

Results and discussion

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 individual lowest (lowest S) and the individual highest (highest S) sustainability levels were 152 and 233, respectively (Figure 2).

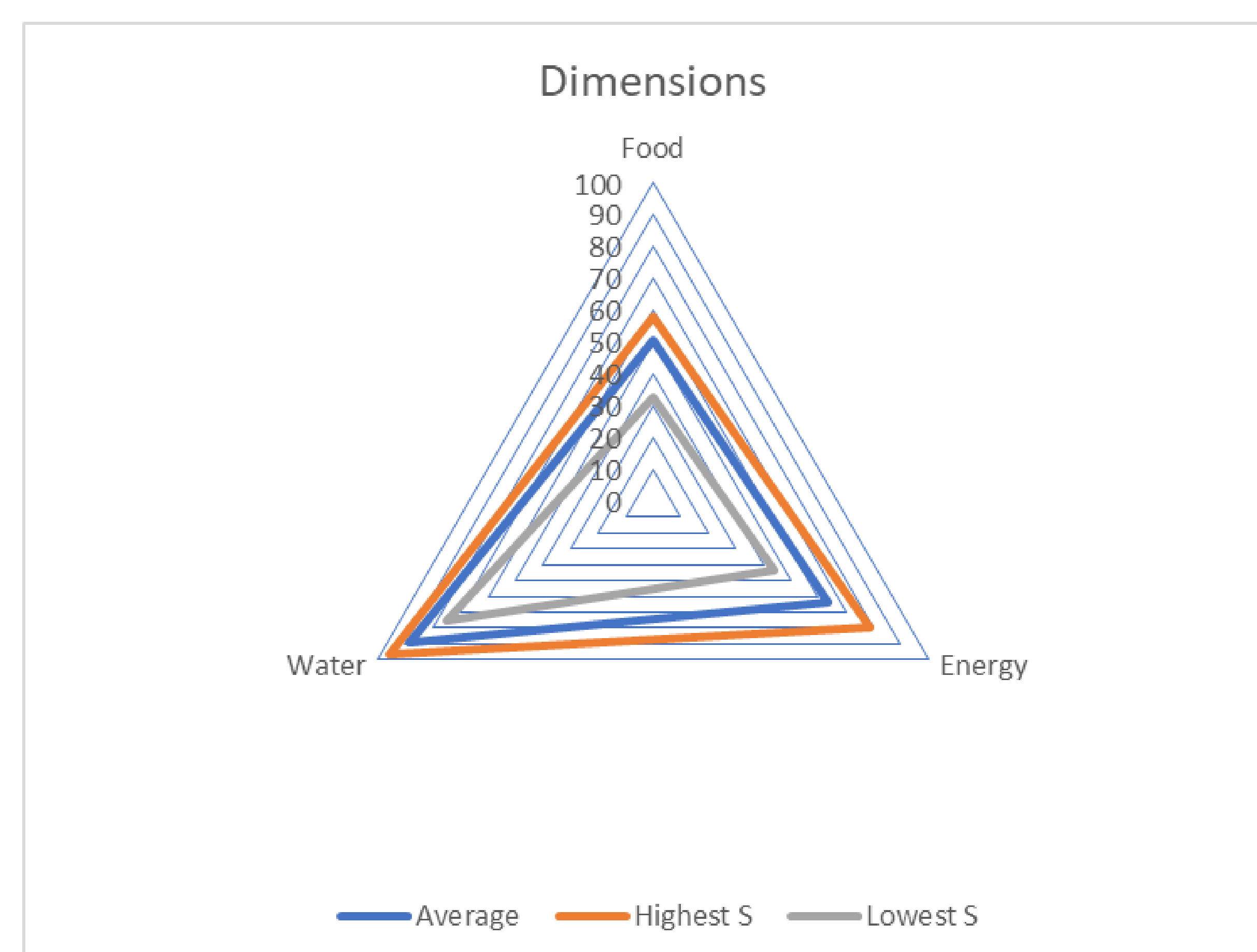


Figure 2. Indicators for Water, Energy and Food applied to farmers in river Ibirapuitã catchment area.



Figure 3. Nexus Pampa Project – Beef Cattle Farmers meeting.

Conclusions and Outlook

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.