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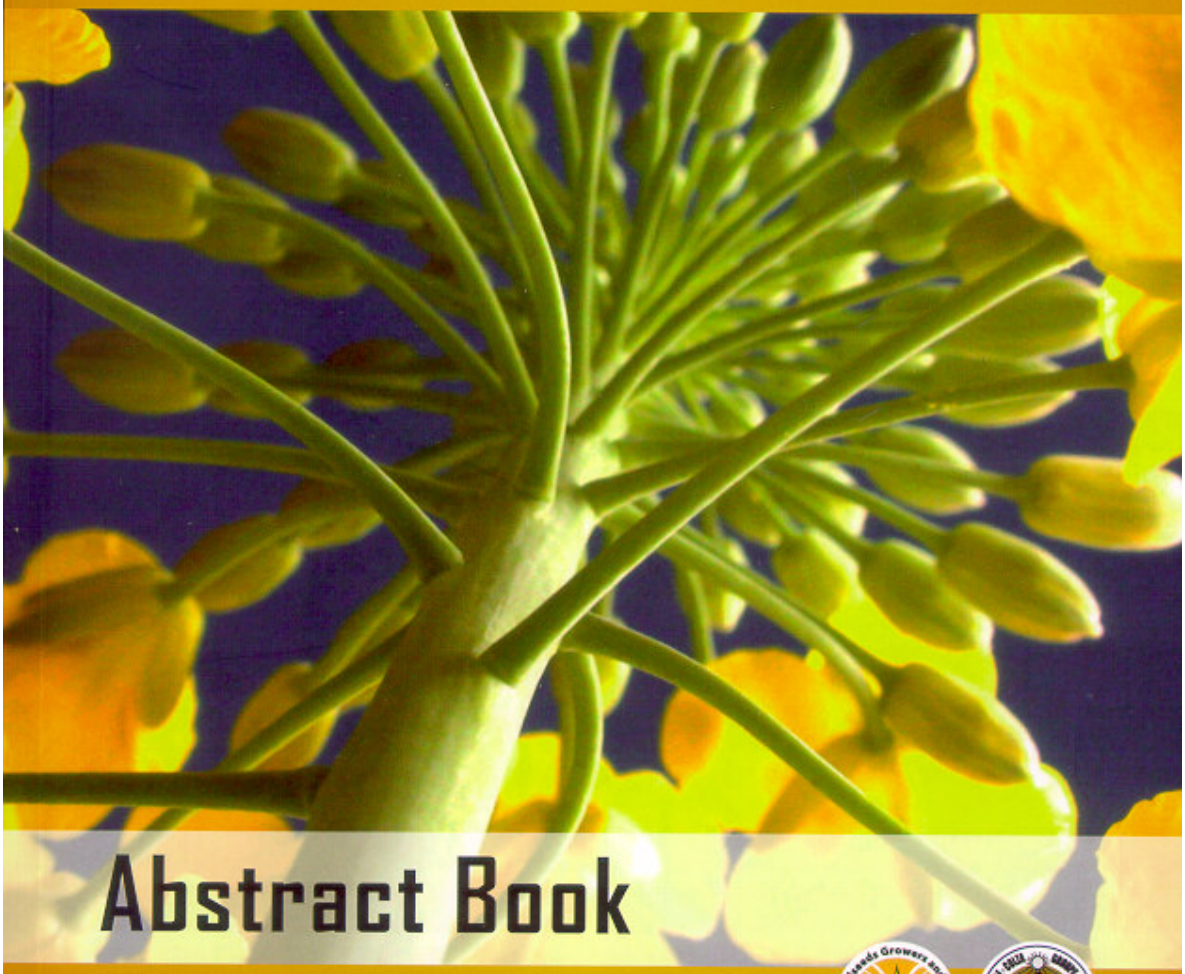

Abstract Book

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Assessment of social and environmental impacts of canola on the biodiesel production chain in Southern Brazil

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Worldwide growing demand for biodiesel has both directly and indirectly driven an enhancement in the production of oilseed crops, including canola. Brazil has favourable environmental conditions for oilseeds production in most areas of the country. However, assessment of the sustainability of the biodiesel production chain related to each oilseed species, relating to the biome, to the region and to the farm where it is produced is scarce. Therefore this research aimed to assess the social and environmental impacts of canola on the biodiesel production, and also of one farm were canola is produced, both in the region of Passo Fundo, state of Rio Grande do Sul, Brazil. Methodology included extensive literature review and deployment of two impact assessment software tools: a) the "Sistema Base de Eco-certificação de Atividades Rurais – *Eco-cert.Rural*" (Eco-certification system for rural activities (*Eco-cert.Rural*) with 24 parameters evaluating the production chain, based on the input of 15 expertises with knowledge on the diverse segments of the biodiesel chain in the region of the study, and b) the "Sistema de Avaliação Ponderada de Impacto Ambiental de Atividades do Novo Rural – *APOIA-NovoRural*" (System for weighted environmental impact assessment of rural activities (*APOIA-NovoRural*) with 62 parameters based on detailed interview and field assessment with a canola farmer. Besides the results of *Eco-cert.Rural*, according to the specialists in the Passo Fundo region, canola cropping crops under no-tillage, following soybean (two crops in the same year), presented negative effect on "Ecological Performance" parameters due to the dependence on farming inputs and off- farm resources (fertilizers, fuel etc – as any other grain crop). Besides that, canola cropping had a positive effect on soil quality, biodiversity, and environmental reclaim. The social-environmental performance benefited from this production chain due to its positive impacts on almost every criteria and parameter, especially in relation to farmers' training, income generation and food safety.

The farm assessment indicated that canola crops had positive impact in most of the dimensions of the system *APOIA-NovoRural*. Only "Landscape Ecology" (0.62) was below the reference baseline (0.70), as it did not fully meet the legislation regarding the percentage of the property of Land Reserve. It is necessary to clarify that this factor doesn't depend on of canola production. However, the dimension "Environmental Quality" (atmosphere, soil, and water) presented indexes above the baseline, highlighting that water quality was 0.90. The dimensions related to economic values as well as management/administration also presented high indexes (0.85).

The assessment led to the conclusion that at the region of Passo Fundo, Rio Grande do Sul, Brazil, the biodiesel production chain based on canola has a positive impact for the people involved in its production.

Since it increases the use of farming inputs and off–farm resources, the aspects related to ecological performance are less favourable. Canola production brings important contributions for sustainability of farming, with a general impact index of 0.77 of a maximum index of 1.00.