Towards Resilient and Sustainable Integrated Agro-ecosystems Through Appropriate Climate-smart Farming Practices in Morocco Rainfed Agriculture

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Abstract : This research seeks to develop multi-disciplinary, multi-criteria, and multi-institutional approaches that consider the three main pillars of sustainability (environmental, economic, and social aspects) at the level of decision making regarding the adoption of improved technologies in the targeted case study region in Morocco. The study is aimed at combining sound R&I with extensive skills in applied research and policy evaluation. The intention is to provide new simple, and transferable tools and agricultural practices that will enable the uptake of sustainability and the resiliency of agro-ecosystems. The study will understand the state-of-the-art of the impact of climate change and identify the core bottlenecks and climate change's impact on crop and livestock productivity of the targeted value chains in Morocco. Studies conducted during 2021-2022 showed that most of the farmers are using since 2010 the direct seeding and the system can be improved by adopting new fertilizer and varieties of wheat. The alley-cropping technology is based on Atriplex plant or olive trees. The introduction of new varieties of oat and quinoa has improved biomass and grain production in a dry season. The research is targeting other issues, such as social enterprises, to diversify women's income resources and create new job opportunities through diversification of end uses of durum wheat and barley grains. Women's local knowledge is rich on the different end uses of durum and barley grains that can improve their added value if they are transformed as couscous, pasta, or any other products.

Keywords : agriculture, climate, production system, integration