Climate-smart grasslands management: Adapting to climate variability, reducing vulnerability of producers, and advancing toward inclusive low-carbon "green growth" in Uruguay

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Uruguay is known for its grass-fed beef production on a landscape with diverse grasses and gentle hills where trees or shrubs are only seen in rocky and hilly areas. The basis for its world famous beef-production economy can be traced to the early 1600s when 100 livestock heads were introduced to Uruguay's extensive grasslands and the national herd has since grown dramatically. In this rural landscape, a convergence of different animals and plants makes Uruguay a country of globally significant biodiversity with approximately 14 million hectares of savannah—the dominant landscape where livestock have adapted. Due to now hundreds of years of extensive and increasingly intensive livestock production, the rich biodiversity found in Uruguay is becoming more and more threatened. Agricultural production and agro-industries are responsible for over 70 percent of Uruguay's total export earnings, and in order to promote further economic development and increased productivity on the same amount of land available, practices to reduce soil erosion and degradation are necessary to utilize and manage water and pasture resources appropriately. Climate-related extreme events also threaten rural production. In recent years, Uruguay's agriculture has been seriously affected by increasing climate variability. Over the past ten years, the country has experienced extreme floods and droughts, increasing both in intensity and frequency, when compared to historical records. Repeated and severe floods and droughts have had a strong negative impact on rural livelihoods and production levels. Uruguay has sought to develop strategies and mechanisms to responsibly capitalize on its natural resources in the pursuit of market opportunities presented by increasingly aware and demanding consumers. The "Integrated Natural Resources and Biodiversity Management Project (locally known as *Proyecto de Producción Responsable* or PPR)" was prepared in conjunction with the Government of Uruguay's Ministry of Livestock, Agriculture and Fisheries (MGAP) and the World Bank. PPR has successfully demonstrated improvements in NRM and climate change adaptation practices for the most vulnerable production systems of Uruguay. The national NRM strategy has been supported by on-farm agro-environmental and climate-smart investments. Matching grants given to "family farmers" was accompanied by a comprehensive set of complementary. Around 25% (4,600) of Uruguayan family farmers adopted economically, climate-smart and environmentally sustainable pra ctices. These interventions have integrated soil, water, and biodiversity management through implementation of 5,300 on-farm sub-projects covering over 880,000 hectares of agricultural landscapes throughout the country (5% of Uruguay's productive area). Natural grasslands management and biodiversity mainstreaming have proven to be crucial for reducing vulnerability and promoting adaptation strategies.The project has served as a catalyst for "biodiversity-awareness" building in both the private and public sectors, spurring important behavioral changes for mainstreaming biodiversity in production/management decisions. PPR produced noticeable behavioral changes for thousands of families across rural Uruguay with many beneficiaries still proudly displaying the PPR promotional signs on their property in which they are identified as a "responsible and biodiversity-friendly producer."