Potential of and constraints on rainfed lowland rice farming in Mozambique

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1. Background
- Rice consumption in Mozambique has been increasing but local rice production has stagnated. The stagnant yield resulted in a rapid increase in rice importation.
- A high priority has been given to the development of the domestic rice sector in the country.
- About 90% of the rice area in Mozambique is classified under rainfed lowland ecology (Sec et al. 2010).

2. Research questions
- Production increase can be achieved through rice area expansion or rand productivity (yield) improvement.

What are the determinants of these two processes?
- The 2nd point is important because some farmers have already achieved high yield even under rainfed conditions by modernizing their practices.

3. Study sites and data collection
- Zambézia and Sofala provinces
- Household survey during the 2007-08 agricultural season (IRRI & National Agricultural Survey of 2008 [Trabalho de Inquérito Agrícola 2008 (TIA08)])

4. Determinants of rice area expansion (Tobit regression results)

5. Determinants of paddy yield (OLS & IV regression results)

Export = 3.115 - 0.0001 age + 0.0001 age^2 + 0.0566 Ave educ + 0.141 Paddy yield + 0.0524 Animal rental mkt + 0.147 Road access (paved) + 0.0622 Road access (non paved) + 0.729** Credit access (trader) + 0.00146 No. of draft animals /ha.  + 0.119 Proportion of rice area

6. Take home messages
- The potential is not fully exploited as only 41% of cultivable lowland is used for rice.
- The lack of power is the predominant constraint to rice area expansion. (The existence of animal rental market relaxes the constraints.)
- High potential also exists in land intensification (the average yield of the top 25% of farmers is 2.5 t/ha).
- The Boserupian process (intensification through technology adoption and intensive crop care) seems to be emerging among farmers who have reached the rice land frontier.
- Adoption of high yielding varieties and animal use contribute to yield increase.

Emergence of land intensification among the farmers who have reached the land frontier (Boserupian process)

Animal power is also important for productivity improvement.