

A Qualitative Assessment of Conservation Agriculture in the Angonia Highlands of Mozambique: Perspectives from Smallholder Farmers



Philip Grabowski
M.S. Student at MSU
CARRS Department

What are the constraints to spontaneous adoption?

- Qualitative approach for generating hypotheses
- Focus on smallholder hand-hoe maize production
- Induced Innovation Model (Hayami and Ruttan) – efficient allocation of land, labor and capital



Methods

- In-depth semi-structured interviews
- Thematic analysis
- Labor and harvest details
- Measuring CA plots



Two forms of manual CA

- Basins with compost promoted by the Igreja Reformada em Mozambique (IRM)
- Direct seeding with fertilizer and herbicides promoted by Total Land Care (TLC)



Results

- CA addresses a priority need – increased maize production
- Little sign of adoption beyond plots where inputs provided by NGOs
- Constraints - nutrient availability, labor requirements and profitability



CA requires fertility supplements

- Conventional tillage preferred where fertilizer is unavailable
- Several farmers disadopted when IRM stopped giving out fertilizer
- Compost is not as effective and is too labor-intensive for use at large scale
- Most farmers buy fertilizer for use on potatoes

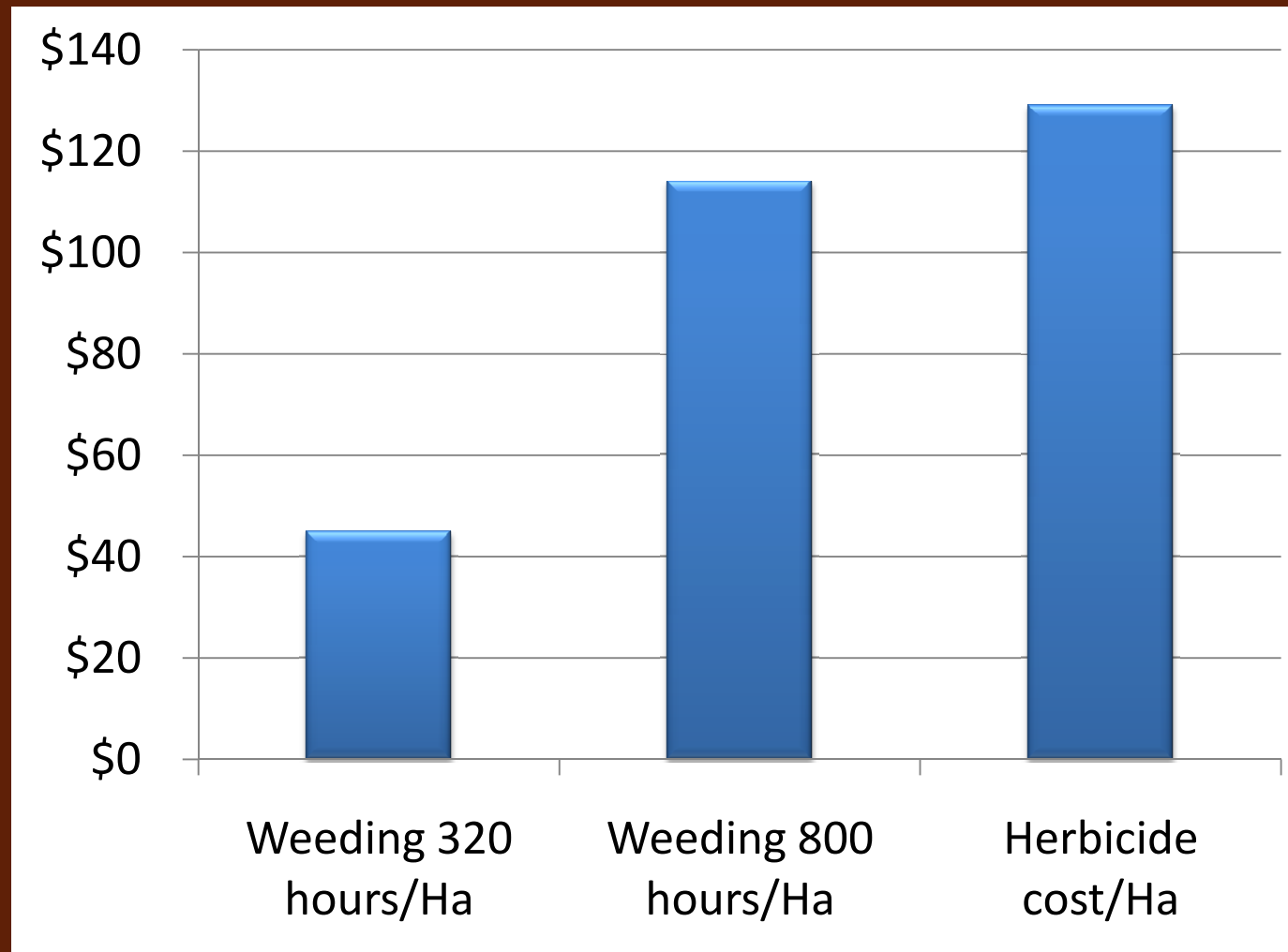


Labor changes with CA

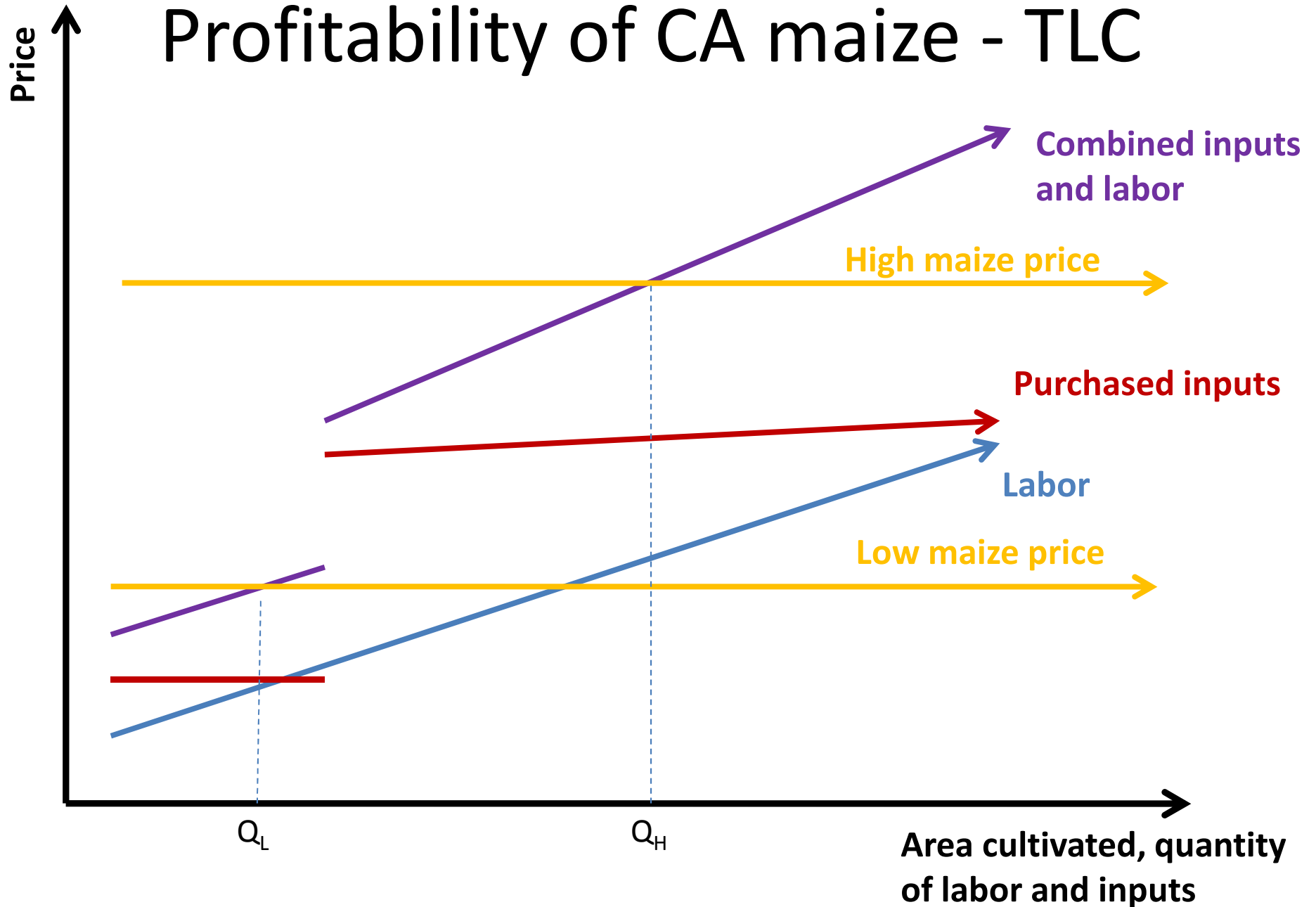
- CA moves less soil but does it save labor?
- Less time on physically demanding tasks but no statistical difference in hours/Ha
- Basins - land preparation takes longer
- Weed pressure is greater requiring either more labor or herbicide use



Profitability of Herbicide use



Profitability of CA maize - TLC



Profitability of CA maize

- Fertilizer and herbicide use only profitable when subsidized or when high yields are sold at a high maize price
- Basins and compost not profitable at large scale because of high labor requirements



Implications for smallholder CA

- CA is limited to small “insurance” plots where constraints are lowest and the opportunity cost of labor is lower
- There is a need to work with farmers on their non-CA plots as well to reduce erosion and increase production utilizing their given amounts of labor and capital.



Key productivity constraint



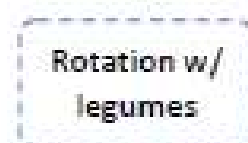
Technical solution for land quality constraint



Negative side effects of minimum tillage



Technical solutions that address these side effects



Constraints to solutions



Thank You

