Assessing and Comparing Income Generation of Livestock Holders in Olancho, Honduras.
An Analysis across Typical Landscapes and Farming Systems

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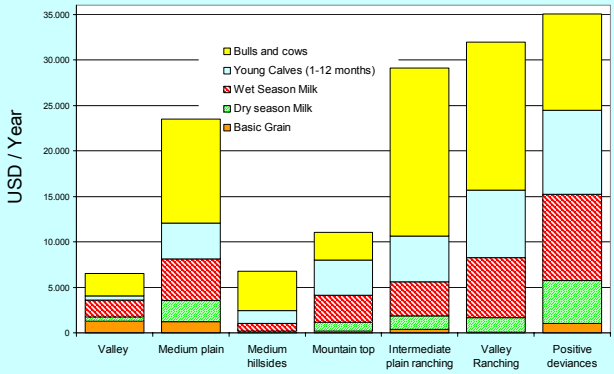
1. Development Challenge, Research Objective and Analytical Methods

A prolonged dry season (3-6 months) limits livestock production in wide parts of Central America. Responding to drought, livestock holders rely on feeding supplements, such as concentrates, molasses and conserved forage. Nevertheless, many small-scale livestock holders with scarce cash resources must cease milk production during these months. They forego an important source of income.
To follow the objective of a comparative analysis across landscapes and zones, sampling of 86 farms was done in two groups: A random sample along a transect and a targeted sample of positive deviances (= farms with known higher level of technology use).

2. Income sources across landscapes in Olancho



Low income zones:
- Valley: less than 16 animals: 36 % and basic grain
- Medium hillsides: 70 % small cattle herds < 16 animals
- Mountain top: 71 % between 16 and 70 head.

Income from milk is the only continous source of cash and varies greatly between dry and wet season.
Small farmers on medium hillsides: very little from milk.
Rearing cattle long (> 30 months) production cycles.

High income zones: meat more important than milk.

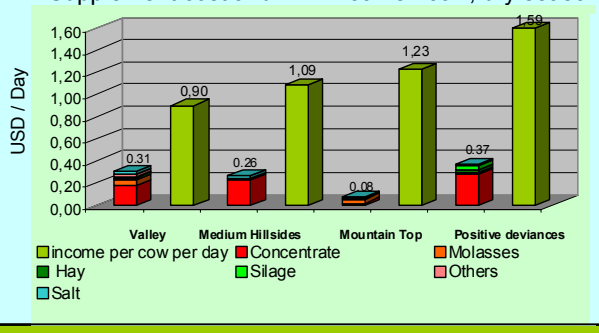
Dry season: milk production declines throughout all zones.

Positive deviances: apply multi purpose forage options correctly. More milk sold in both seasons. Cash flow is balanced between milk and meat.

3. Problems of milk production in low income zones

- Cash: flow is small and often unavailable
- 20% of farms do not milk in the dry season
- About 56% of small farmers have no off-farm income

Supplement cost and milk income / cow, dry season



- Low incomes: 65% of small farmers < $1 /day/ person
- Little income from young stock sales (at 12 months) because of high feeding costs for the calves (milk sales foregone)
- Lack of conserved forage

Constraints of dry season milk production
- Lack of forage
- High supplementation cost: feeding of commercial concentrate
- Low returns and volume of production
- Small farmers: production similar to intensive producers
- Short dry season on mountain top: no need to buy much supplement, but market constraints.

5. Possibilities for small farmers

To increase income, small farmers should overcome the so called "concentrate trap" in the dry season. They use external inputs to maintain the animals but not to produce.

Low-cost dry season feeding alternatives:
- Farm supplements instead of purchased supplements: cut & carry grasses, self-made concentrates
- Conserved forage feeding: hay or silage
- Increase carrying capacity with improved gasses

1 ha of cut and carry grass (e.g. King Grass or Cane) would be sufficient for a small herd of cows (e.g. 5 head). Establishment costs about US$121 to 172 per ha and equals about 500 to 727 kg of concentrate.

Establishment cost of improved pastures (e.g. *Brachiaria brizantha* cv Toledo) for pasture and hay or silage is about $192 to 286 per ha (depending on the use of family work and fertilizer) and equals about 800 to 1180 kg of concentrate.

Establishing and conserving improved pastures or cut & carry grasses can reduce commercial concentrate purchase by half. A farmer with 5 cows and a 120 days dry season would save $60 per dry season on concentrates. The investment would pay off between 2.8 (cut and carry) and 4.7 (improved grass) dry seasons if fertilized and established with hired labor.

With a wet season milk yield increase of 0.5 l per cow included in the calculation, the investment pays off after 0.54 (cut & carry grass) and 1.3 (fertilized improved grass) dry seasons.

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