

ANIMAL TRACTION EXPERIENCE IN BURKINA FASO

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The project area covered 50,000 km² with a total population of 440,000. This compares with Togo in terms of area but with an average of only 2.9 people per square kilometer, the area is sparsely settled and has a poor infrastructure. Rainfall ranges from 900 mm in the south to 500 mm in the north. Over 80 percent of crop area is in millet and sorghum with some cash crops such as rice, soybean, peanuts and cotton of limited importance. Only 8 to 15 percent of total crop production is sold. Few farmers have animal experience and equipment used is much the same as in Togo.

There were six previous attempts to introduce animal traction. All more or less failed because they relied on imported equipment that was poorly adapted. They took the "model farmer" approach, which failed to provide the support needed to maintain animal traction. Also the short duration of the projects (three to five years) mitigated against success.

OBJECTIVES OF PROJECT

1. Improve institutional capacity of the regional development organization.
2. Increase agricultural production and rural income through the introduction of animal traction.
3. Provide technical assistance and conduct farm production and regional marketing surveys.

STRATEGY

1. Working small well-defined areas using Peace Corps Volunteers and local extension staff, although a government decision to make the program country-wide disallowed P.C.V.s.
2. Increased the number of extension agents six-fold during the life of the project to over 400; many were young and inexperienced.

OUTPUT

- 1974 - 180 animal traction units plus owners
- 1980 - 1,800 animal traction units plus owners (of which over 1,000 were using donkey traction).

RESULTS OF THE FARM LEVEL SURVEY

The survey was intended to provide baseline data as well as comparisons between animal traction and manual farmers. There were 480 households using animal traction, either oxen or donkeys. Fifty-eight percent of the farmers using oxen had less than three years experience, thus showing that the technology had been adopted only recently.

Over half of the farmers used their animal traction unit less than 12 days per year. This has serious economic implications since the animals have to be fed throughout the entire year. Rental income was minimal, 530 CFA for oxen and 63 CFA per donkey. Oxen carting was insignificant (four percent of animal use) and even donkey carting was not widespread. Plowing was by far the most important use of animals. Donkey farmers plowed 85 percent of their cultivated area while oxen farmers plowed 50 percent of their cultivated area. Very little weeding was done. Farmers using animal traction for weeding averaged 11 years of animal traction experience.

Animal traction households on the average, cultivated six ha while manual households cultivated only four ha. Animal traction households were wealthier and larger than manual households with averages of 11.5 people and 4.8 active workers versus 7.7 people and 3.6 active workers. The difference in area per worker between animal traction and manual households was less than ten percent. Thus the area expansion effect of animal traction was very small. Ox farmers using animal traction weeding did cultivate an area 22 percent larger per active worker than ox farmers who did not weed. Therefore, weeding did have a substantial effect on the area cultivated per worker. The crop mix changed very little between manual and animal traction farmers except for a slight increase in cash crop production. Yield effects were negligible. Yields in the area are low and dominated by agro-climatic conditions. On-farm trials did show a positive effect from plowing. Animal traction did reduce labor inputs per hectare by 174 hours or approximately 25 percent. Even with animal care considered, there was an 11 percent decrease in labor inputs per hectare.

Animal traction increased variable input costs by 50 percent over those of manual farmers. Fixed costs were more than 125 percent higher. Donkey traction was significantly less expensive than oxen traction and appealed to resource-poor farmers. The higher costs of oxen, however, were more than covered by appreciation in the price of the animals. The price of donkeys did not appreciate. The cash costs of animal traction were so high and farm cash revenues so low that farmers needed non-farm cash revenues to support the cost of animal traction.

Survey data was used to generate projections of farm income over a ten year period. A ten year period was used because it is usually agreed that farmers require five years to learn to use animal traction effectively. For farmers using oxen only for plowing with no area or yield effects, the projected internal rate of return was only two percent. Most of the income generated came from the increase in the price of oxen. Net income actually decreased seven out of ten years, from what it was prior to animal traction adoption.

Projections for farmers who use their oxen for weeding and obtain some area and yield effects, showed an internal rate of return of 24 percent. This increased to 28 percent if the weeder was not included in the original equipment package but purchased later when the farmer was capable of using it. Donkey traction projections showed less income but higher rates of return.

CONCLUSIONS

1. The number of animal traction units placed is not a good criteria for evaluating an animal traction project.
2. Farmers are likely to experience a decrease in net income initially when adopting animal traction.
3. Weeding is a key component of the animal traction package in terms of making it profitable.
4. Animal traction allows a substantial reduction in labor inputs per hectare, even when the time needed to care for the animals is included.
5. Good extension support to farmers is vital to the success of the project.
6. The introduction of animal traction is a long-term process and the evolution of that process should be constantly evaluated.

