

Entrepreneurship in animal traction: empowering rural initiatives

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Abstract

The economies of most countries in Eastern and Southern Africa are going through a dynamic transformation from centralized to market oriented economies. The current emphasis on private sector development accompanied by privatisation of government institutions creates ample opportunities for enterprising in agriculture. The paper highlights some of the opportunities which exists and recommends approaches to develop and promote entrepreneurship in animal traction. Some of the opportunities discussed include: Draught animal hire including rural transport services, small scale manufacturing, repair and maintenance services and the establishment of rural supply and distribution centres/ networks.

It is argued that entrepreneurship development in animal traction can empower farmers, youth and rural communities in improving their income levels and rural livelihoods. However, for these initiatives to thrive, an enabling environment is necessary as well as a change of attitudes and training in business management to the target groups.

Introduction

Most of the developing countries and indeed sub-Saharan Africa (SSA), have an economy strongly dominated by the agriculture sector which generates over 50% of GNP contributing to over 80% of trading value and more than 50% of raw materials to industries (Badiane and Delgado, 1995). Agriculture is also the largest source of employment whereby the livelihood of more than two thirds of the population depend on farming. Agricultural exports are a principal earner of foreign exchange and contribute between 15 and 60% of the GDP. It is therefore imperative that a strong and growing agricultural sector is essential for economic development, both in its own right and to stimulate and support the growth of associated industries.

In most of the SSA countries, agriculture is still dominated by the smallholder and subsistence sector which is characterized by low capital, limited technical know how and limited infrastructure and support services. These factors have led to the heavy dependency on hand tool technologies of low field efficiency and capacity. Many of the engine powered mechanization systems, including the tractor hire schemes, in SSA have had a disappointing performance with very limited success (Ellis-Jones 1997). As an alternative, animal traction has proved itself as a viable source of power for tillage and transport operations where applicable. This is due to its simplicity, affordability and capacity for its

integration into the smallholder African farming systems.

As many economies in Eastern and Southern Africa countries are transforming themselves from centrally planned and controlled to more market oriented economies, the private sector has a key role to play in the development process. In free market economy, the supply of inputs is demand driven and an individual becomes a focus for policy, planning and development. For this reason, the individual will need to be more enterprising to capture the niche opportunities created by the free market economy.

It is therefore, the objective of this paper to discuss critical issues and opportunities related to entrepreneurship development in animal traction. The paper also highlights some challenges and potentials in promoting entrepreneurs for increasing both the production and productivity of agriculture in the region.

Mechanising agriculture with animal traction

Traditionally, draught animals have played a major role in the integrated crop/livestock production systems in SSA countries. The use of draught animals dates back to 2000 BC in Ethiopia. In South Africa it started in the fifteenth century, picking up in the later nineteenth and beginning of the twentieth centuries in most parts of sub-Saharan Africa (Goe, 1988; Starkey, 1992).

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Table 1: Proportional contribution (%) of total power use in selected developing countries

	Human power	Animal power	Mechanical power
Sub-Saharan Africa	80	16	4
Botswana	20	40	40
Kenya	84	12	4
Tanzania	80	14	6
Zimbabwe	15	30	55
South Africa	10	20	70
India	18	21	61
China	22	26	52

Source: COMSEC (1992)

In most SSA countries where animal traction was introduced, it was mainly associated with European settlers, missionaries and different colonial administrations who promoted the technology in an attempt to expand cash crop production to serve the industrialized world. To date, animal traction is one of the major sources of power in smallholder agriculture, still dominant in the region (Table 1).

One of the major reasons for the disappointing performance and contribution of mechanization (using both animal traction and/or tractors) to agricultural development has been the inadequate promotion of mechanized-technology oriented entrepreneurship. In most cases where mechanization has made a positive contribution to agricultural development, it has been by chance and not by design (Simalenga, 1999; Muchiri et. al., 1994).

Therefore, to achieve a sustainable mechanization levels in agricultural production and processing, Africa needs its own crop of entrepreneurs to seize the market and technical opportunities of the twenty first century. The entrepreneurial potential of the African farmers, agricultural engineers, artisans and traders should be enhanced systematically as proposed in the following chapters.

Entrepreneurship and business opportunities in animal traction

An enterprise is any business entity and entrepreneurship is the act or process of getting into and managing one's own business (Box 1).

Box 1: What is an enterprise?

An enterprise is the association of man's labour with raw material or an innovative idea and capital. It is a question of knowing how to combine these different factors to the benefit of the community. The first and foremost objective of an enterprise is to produce a good service at a profit while providing work and income for those who participate in production.

An entrepreneur is therefore a person who attempts to earn a profit by taking the risk of operating a business enterprise. These are people who have the ability to identify and evaluate business opportunities in the environment, gather resources to take advantage of the business opportunities and ensure success. An entrepreneur is a moderate risk taker who takes calculated chances with the hope of success. They are creative and innovative so as to develop new processes, products, services and markets.

There are several business opportunities in animal traction. These include manufacturing of implements and carts, Supply and distribution networks, repair and maintenance and contracting (hire) services.

Manufacturing of implements, carts and spare parts.

Many countries in Eastern and Southern Africa like Zimbabwe, South Africa, Mozambique, Tanzania, Kenya, Zambia, Malawi and Uganda have enough installed capacity for the manufacture of animal-drawn implements and spares. Until the recent past, this manufacturing (with the exception of South Africa and Zimbabwe) was mainly in the hands of Government run parastatals.

These parastatals had a monopoly in the business, especially in centralised large-scale manufacturing. They controlled the market and determined what to produce and what price to set. Government subventions made these parastatals to operate in disregard of profits, setting low prices to their products at the detriment of the private sector growth (Table2).

Opportunities for entrepreneurship now exist in manufacturing as a result of the liberalization of the economy and accompanying Economic Structural Adjustment Programs that lead to the privatization of these organizations. The numerous factories and rural craft workshops being divested present a unique opportune for entrepreneurs to participate in the

manufacturing of implements, carts and spares part fabrication business.

Rural craft workshops

In Tanzania, Kenya and Zambia, several craft workshops were established in urban and rural areas, producing among other products animal-drawn implements. Their performance was poor, making their production level insignificant compared to the national demand, mainly because of too high overhead costs and poor management. Also the "engineering top down concept" in which most of them operated, providing implements and equipment of their choice in disregard to farmers' demands, pushed their services further away from the intended customers (e.g. appropriate design of carts). However, there is need to revive these rural craft workshop. They can play a major role in repair and maintenance of implements in rural communities and provide the much needed employment for young people which can also improve the rural - urban migration problem. The "Jua Kali" concept in Kenya is a good example on how entrepreneurship can thrive at small scale level.

Small scale manufacturing

The informal sector composed mainly of rural based artisans and blacksmiths has played a dominant role especially in the production of ox-carts in the region in countries like Tanzania, Kenya, Zambia and Malawi (Box 2).

Box 2: Ox-cart production and marketing

Ox-cart production is done in several specialized workshops in Shinyanga town, Tanzania. Some workshops specialize in the production of axles, others hubs and rims. Other workshops supply timber, bolts and nuts while assembling is done in other workshops. Traders then travel out to villages with several cart trains pulled by donkeys. The carts are exchanged for cattle. (Hatibu and Shetto, 1997)

The artisans and blacksmiths also produce hand tools, ox-plough parts such as shares and land-sides, harnesses and they are engaged in repair and maintenance of the equipment. The majority operates through simple workshops using unsophisticated techniques. This is an area where the private sector can play a dominant role due to the following advantages:

- They are in close contact with their customers and can thus respond quickly to their needs;
- They can utilize the readily available user feedback to improve product or service quality;
- By virtue of being located in the vicinity, they warrant product performance;
- In addition to the physical product (implement, spare) the accompanying repair/maintenance services usually provide satisfaction to customers.

Table 2: Price comparisons between UFI (a state owned factory) and other private manufacturers (October 1992) in Tanzania.

SUPPLIER	STATUS	COUNTRY	IMPLEMENTS AND PRICE IN US\$				
			VS10 plough	S51 cultivator	Ridger	Zig-zag harrow	Planter
ZIMFLOW	Private	Zimbabwe	63.6	105.7	136.9	201.1	285.3
Bulawayo Steel Products	Private	Zimbabwe	63.6	105.1	136.0	200.1	283.5
AGROALFA	Private	Mozambique	79.75	120.4	104.4	222.0	n/a
SAFIM	Private	South Africa	64.8	69.5	114.3	n/a	182.6
COSSUL	Private	India	85.7	55.00	105.21	75.0	n/a
UFI	Public owned	Tanzania	37.6	8.5	34.6	11.7	81.3

Source: Mkomwa *et. al.*, 1994

NB: All prices are Ex works in US\$ in the host cities, while UFI's prices include delivery

Supply and distribution networks

The supply of animal drawn implements started with the importation of ploughs from Europe and declined in the 1970s when many countries started manufacturing them locally. Like the centralized large scale manufacturing, importation and dealership in animal drawn implements was dominated by public institutions. A number of private firms are now actively involved in the importation of these implements to cover the deficit (gap) created by the decline in manufacturing as many factories are changing hands from government to private. The supply and distribution networks have been fairly strong in the private sector with retail shops in urban trading centres. There is a need to strengthen these networks and promote distribution points in rural areas where implements and spares are mostly needed. The synthesis between manufacturing and dealership to the entrepreneurs in terms of resources and costs is shown in Table 3.

Table 3: Comparison between manufacturing and dealership to the entrepreneur

Criteria	Manufacturing	Dealership
Capital	High	Lower
Operational costs	Varied and generally high	Less and well defined
Workforce or technical know how requirements	High	Low
Employment Capability	High	Low

Other important criteria, besides profitability and within the national or macro level, include:

- Promotion of self-reliance and full use of local resources and skills;
- Economy in use of fossil fuels;
- Best possible use of scarce foreign currency;
- Maximum use of local industry.

Provision of animal power contracting and other services

Numerous opportunities exist in the provision of animal traction services. These include:

- Contract hire services for tillage and rural transport services;
- Training, extension and advisory services;
- Research and product development;
- Work animal health and supply.

Animal traction contracting (hiring out) services are fairly common in the rural communities in the region. An estimated 30-60% of the farming community including the poor, benefits substantially as non oxen owners access the technology through direct hire or other social arrangements within the society (Box 3).

Box 3: Animal traction hiring is common and profitable

One farmer who adopted work oxen for cultivation, subsequently purchased a cart and started hiring out. The business was profitable to an extent that he concentrated on being a transporter, using hired manual labour on his farm rather than using his oxen (Starkey, 1985). In Sumbawanga district in Tanzania, 98% of the rural households use oxen in ploughing. However, oxen are owned by only 30% of the households. The rest depends on hiring mainly paying in kind (Shetto and Mkomwa, 1996).

It has been established that animal traction is more profitable and the payback to investment is fast when animals are hired out. Farmer contractors have recorded increases in farm incomes of more than 50% and in many cases a cart can be repaid within six months (Panin and Ellis -Jones, 1992; Shetto and Mkomwa, 1996; Starkey, 1985).

Challenges in promoting entrepreneurship in animal traction

The biggest challenges in the animal traction business in private small establishment have been on availing effective quantity volume sales of quality implements or services at affordable prices and still make profit to sustain the business. Many entrepreneurs are constrained with low capital outlay, limited markets, low sales volumes, and limited working facilities and the lack of business and managerial skills.

Investment costs in animal traction is relatively high. The seasonality of animal traction business, the need for cash financing and unreliable markets which depend so much on the previous season's performance of the crop, create a lot of cash flow problems. This makes business in animal drawn implements very vulnerable and unfavourable with a lot of uncertainties.

Unfavourable policies, lack of institutional framework and financial support are some of the main constraints to the development entrepreneurship in the region.

Policy and enabling environment

Normally Governments set rules and regulations that must be followed by all business people including the new emerging entrepreneurs. Currently, there is lack of effective policies and support in promoting animal traction. Some of the policy issues and challenges related to the development of entrepreneurship in animal traction include:

- Lack of clarity in the legal framework (registration, licensing, taxation, levies);
- Lack of formal mechanisms for public - private sector consultations;

- Too many taxes whose tariffs keep fluctuating every now and then;
- Lack of strategy to promote and protect entrepreneurs in who can adequately;
- To fill the vacuum left by divested public sector.

Institutional framework

In many countries, there is inadequate co-operation between private sector and institutions (e.g. R and D, training) and information support centres in promoting entrepreneurship drive. Some institutional related challenges include:

- Lack of effective institutional support in provision of entrepreneurship training and information services in an efficient and effective manner;
- Lack of leadership and stewardship for animal traction entrepreneurs that would ensure efficient and effective government support;
- Lack of rationalization and coordination of the roles of players in the trade sector.

Infrastructure development and maintenance

Lack of fast track access to serviced land (which is a disincentive to better prices) reduces the people's capacity to procure goods and services. This is a limitation to entrepreneurship especially in the rural transport sector. Animal-drawn implements and goods are bulky and their distribution becomes difficult where there are no access roads. In Nigeria and Zaire, the pattern of adoption of animal traction has been highly influenced by the presence of roads and marketing opportunities (Starkey and Faye, 1990). The increased use of draught animals create an economic demand for the supply of implements, spares and services attracting the business communities to participate in the supply chain.

Financial resources and funding mechanisms

Investment costs in animal traction hardware are relatively high. The seasonality of animal traction business and unreliable markets (which depend on the seasons' crop performance) require an adequate and reliable supply of credit. Small scale enterprises have for a long time been prejudiced by economic policies which have explicitly given privilege access to well established enterprises. Even under the current Structural Adjustment programmes, many restrictions have been impinged on the small scale sector. The majority of small scale enterprises still remain outside of the banking systems when it comes to loans and they feel the ripple effects of the credit squeeze when it comes to reduced demand for goods and services.

Some of financial resources constraints include:

- Lack of financial institutions to cater for small scale rural based economic activities;

- High interest rates;
- Lack of collateral;
- Delay to credit disbursement;
- Drastic devaluation which make price rise unable to cope with the business.

Training and capacity building in business management

For entrepreneurs to take full and faster advantage of the liberalised regime, a minimum level of training and capacity building is needed. Most of our training in schools and colleges is geared in making graduants who aspire to be employed rather than self employed. These highly trained professionals lack business acumen, management skills and confidence to start enterprises. This situation needs to be redressed. Challenges in attaining a firm level of capacity building include:

- Weak public sector institutional capacity;
- Lack of business and managerial skills;
- Need for innovation, product development and adaptation;
- Inefficient, inadequate or lack of information networks.

Possible areas for intervention in empowering rural initiatives

Successful and sustainable exploitation of business opportunities in animal traction requires the creation and maintenance of an enabling environment in which the emerging entrepreneurs can operate. This will stimulate and activate both in the formal and informal sectors. The starting point is an individual who is planning to go into business. They need to take initiative to explore available opportunities. Only when one is self-driven can s/he put maximum effort into a business venture to ensure success. Some areas for possible interventions include:

Provision of finance (start up capital)

In many sub-Saharan countries, the revenue from products is always eaten up by high inflation, which eliminates potential savings, thus making capital as one of the limiting constraints in business. In most cases rural micro financing is weak with very little participation of the formal lending institutions. Stringent, borrowing conditions and high interest rates makes credits out of reach to most entrepreneurs.

Therefore some of the possible means of availing capital include:

- Alternative financing, which includes starting with one's own effort, mobilizing physical resources and savings and creating economic activities and enterprises capable of generating income. Other options may include the

establishment of Savings and Credit Cooperatives, and Grain banks. These are schemes that guarantee a member saving access to credit;

- Establishment of Micro-credit schemes or rural development banks offering low interest rates. The successful model of Grameen bank in Bangladesh is a good example where the scheme has adopted group-based lending with peer pressure to monitor and enforce contracts. The scheme has reached 2 million households with overall repayment rate exceeding 95%. (Qureshi et. al., 1996).

Aggressive promotion of animal traction and entrepreneurship

Both formal and informal enterprises depend on adequate markets for their services and are unlikely to be active at low levels of animal traction adoption. Aggressive promotion of animal traction and an effective extension system have accelerated the adoption of animal traction in some parts of West Africa. As the use of draught animals increases, the need for implements and services increases too, creating an economic demand. The economies of scale would henceforth allow profitable provision of implements, spare parts and repair services, attracting the participation of the private sector.

At government level, it is important to assist emerging entrepreneurs by enforcing deliberate policies which promote the image of animal traction and enable informal sector establish enterprises. In Japan, for example, deliberate efforts and policies were formulated in 1956 to encourage and support small scale enterprises by removing foreign transaction constraints, facilitate provision of financial resources, provision of tax incentives that stimulate entrepreneurship and development of technologies (Kagami, 1995). Such de-regulations can easily be reversed slowly once the businesses have been firmly established.

Education and training

Location specific training addressing the actual needs to the clientele should be undertaken. Hands on skill training should be provided to artisans, black smith and technicians in the operation, manufacture, maintenance and repair of various animal traction equipment. The training should also include accounting, business or small enterprise management and marketing aspects.

Youth training programmes can also be initiated by community based projects on the niche opportunities existing in a particular area. These will not only attract young people in agriculture, but will also create the much needed employment and deter rural-

urban migration. At higher level, there might be a need to incorporate entrepreneurship training in universities, colleges and even vocational training centres.

Sensitization/awareness creation

Sensitization especially of the youth should be carried out to expose them to viable animal traction business like contract hire services in ploughing, transportation and weeding. The mass communication media such as radio, newspapers and newsletters can play a prominent role. Professional societies such as SEASAE and ATNESA have a very important role to play in entrepreneurship development in the region. They can initiate market surveys of goods and services in demand, make inventory of existing potential business opportunities and sensitize both the government and its members for the required business development.

Conclusion

As stated in previous sections, the problems for starting and sustaining animal traction technology-oriented entrepreneurs does not have a magic formula to solve them. It requires both re-orientation of donor assisted projects towards micro-enterprises, deliberate government intervention in creating enabling environment and a strong mechanism to make follow up and support the entrepreneurs.

Financial markets needs major reform in order to provide required finance to support emerging entrepreneurs. This can be achieved by setting up of special revolving loan fund or by provision of accessible micro-credit facilities.

Appropriate policy and institutional framework such as Agricultural Mechanization Strategy, needs to be in place so as to ensure that enabling environment is created and sustained to run business profitably. The strategy will also assist to identify the required infrastructure and other sectors of the national economy to be developed to support the agricultural development.

Education and training will need to be reviewed in line of the changing economic environment. Courses such as business and capital management, application of information technology in agri-business will have to be incorporated as well as entrepreneurship training in universities, colleges, and professional training courses.

A mechanism for information for business and market (networking) will need to be established for regional collaboration, promotion and publicity. The mechanism will also initiate the formation of data

bank (especially for regional trade and tariffs, market opportunities etc). This will greatly assist regional networking for one-stop-information acquisition system.

The paper has attempted to show that entrepreneurship in animal traction is a viable

economic activity which can enhance the quality of life and bring in income and employment to the rural communities. It thus deserves support in terms of investment and promotion for the development and modernization of Africa's agriculture.

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