Endogenous Livestock Development — Can it Help the Poor?

Evelyn Mathias\textsuperscript{a}, Ilse Köhler-Rollefson\textsuperscript{a}, Ellen Geerlings\textsuperscript{a}, Katrien van’t Hooft\textsuperscript{b}

\textbf{a} League for Pastoral People and Endogenous Livestock Development, c/o Weizenfeld 4, 51467 Bergisch Gladbach, Germany
\textbf{b} ETC Foundation, COMPAS, P.O.Box 64, 3830AB Leusden, The Netherlands

\textbf{Abstract}

The consumption of meat and milk in developing countries is expected to double in the next two decades. Enhanced demand and trade liberalization have triggered the expansion of industrial livestock production in the South, promising to revolutionize and intensify the livestock sector in many developing countries. What options do poor herders and farmers have if they want to continue livestock keeping? Some development professionals recommend vertical integration and contract farming. But these strategies appear inappropriate for pro-poor development as they commonly combine high labour productivity with low employment. Alternatives include (a) helping poor livestock keepers to build strong associations and empower them to argue for their rights and (b) reforming service delivery institutions. “Endogenous livestock development” (ELD) is an approach to livestock development that puts livestock keepers at the centre of development efforts rather than pursuing enhanced production. It recognizes that pastoralists and smallholders are geared towards risk-aversion instead of maximizing production per animal, so supports the resilience of livestock keeping households, for instance by securing their access to land and grazing rights. Recognition and respect of indigenous knowledge and local culture are important aspects of ELD projects, as are the integration of local and modern knowledge, initiating a dialogue with politicians and scientists, linking people to support institutions, and helping them explore niche markets and voice their needs. Other potential strategies are lobbying for the legalization of informal markets, lowering animal mortality in low-input husbandry systems, and helping people fulfil the required standards of hygiene and (zoonotic) disease control. This paper analyses such approaches and discusses their results and impacts, drawing on a pilot study of 15+ people-centred livestock projects, additional project documents and literature, and field experience in several countries in Asia, Africa, South America and Europe.

\textbf{2 Background}

Livestock is getting back on the national and international development agenda. Cities and populations in the South are growing, and with them, the demand for livestock products. This has triggered a livestock revolution in developing countries. Since the early 1980s, meat production has grown by 230\% and milk production by 200\%. Globalized markets offer additional opportunities to enhance national income and improve nutrition. But they also pose risks to livelihoods, human health, and the environment. Especially vulnerable are the 600 million poor livestock producers – pastoralists, small farmers and landless people – estimated to live in rural, often marginal areas (FAO, 2005). How can these livestock keepers benefit from the livestock revolution if they want to continue livestock keeping? Which development activities can support them?
Longstanding attempts to raise animal productivity and optimize livestock products through the promotion of breeds and technologies developed under favourable conditions in developed countries have mostly failed to help pastoralists and poor livestock keepers (Leonhard, 2003; LID, 1999; Mathias and Mundy, 2005). Recent trends towards vertical integration and contract farming also appear questionable to support poor livestock keepers in rural areas: such strategies commonly combine high labour productivity with low employment (Köhler-Rollefson, 2005).

Out of the concern that the international debate does not seem to be leading to approaches that support poor livestock-dependent peoples in an effective way, the “endogenous livestock development” (ELD) initiative evolved about two years ago. ELD puts livestock keepers at the centre of development efforts, strengthening their resilience rather than pursuing enhanced animal production as the primary goal (ELD Group, 2005; van’t Hooft and Wanyama, 2005; Köhler-Rollefson 2005).

Methodologically, ELD builds on the various field-tested methodologies and approaches developed since the 1970s. These include participatory appraisals, community-based animal healthcare, ethnoveterinary medicine, and participatory technology development. Going beyond these approaches, ELD combines participatory livestock development with lobbying, networking and institution building, influencing education, and other strategies. Ultimately ELD seeks to enable livestock keepers to take their development in their own hands.

The “ideal” ELD project does not exist, but a number of projects incorporate some of the key aspects listed in Box 1. What have been the impacts and outcomes of these projects? Is ELD a valid approach to improve the livelihoods of pastoralists and poor livestock keepers?

**Box 1. Key aspects of endogenous livestock development**

- Understanding the local situation.
- Building on local needs and capacities
- Improvement of local knowledge and practices.
- Local control of development options.
- Identification of (local) development niches.
- Selective use of external resources.
- Exchange and learning between cultures.
- Training and capacity building.
- Networking and strategic partnerships.
- Understanding systems of knowing and learning.

Source: ELD Group, 2005

### 3 Approach and projects covered

The paper summarises the findings of a literature-based pilot study of 16 people-centred livestock projects (Geerlings, forthcoming). The projects were identified through a call for information via electronic mailing lists, literature and Internet searches, and the personal experience and contacts of the authors. Finally 16 projects were selected for further studies (6 in Africa, 2 in Asia, 2 in Europe and 6 in Latin America, see Table 1 for details).
<table>
<thead>
<tr>
<th>Country</th>
<th>Project name</th>
<th>Implementing organization</th>
<th>Start</th>
<th>Short description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>Women innovators in Tigray</td>
<td>Local NGOs (TPLF, Catholic Diocese), local university (Mekelle University)</td>
<td>1981</td>
<td>Women start ploughing themselves, experiment and train other women, awards for outstanding women innovators</td>
</tr>
<tr>
<td>Tunisia</td>
<td>Promoting farmer innovation</td>
<td>Institut des Régions Arides (IRA)</td>
<td>?</td>
<td>Support to innovations in feeding of sheep and goats, and keeping of bees, poultry and rabbits</td>
</tr>
<tr>
<td>Kenya</td>
<td>Wajir Pastoral Development Project (WPDP)</td>
<td>International donors (DFID) and NGOs (Oxfam, Comic Relief)</td>
<td>1994</td>
<td>Improving pastoral livelihoods through strengthening institutional capacity and leadership within the district plus other measures such as health care; water supply; etc.</td>
</tr>
<tr>
<td>Sudan</td>
<td>Participatory Development of the Donkey-Drawn plough</td>
<td>International NGO (ITDG)</td>
<td>1987</td>
<td>Adapt and modify plough designs in participatory technology development process; revolving fund; establish niche markets</td>
</tr>
<tr>
<td>Wales, U.K.</td>
<td>Selling organic meat through a co-operative of Welsh farmers</td>
<td>NGO (Cambria Organics)</td>
<td>2001</td>
<td>Setting up production chains and direct farmer-consumer linkages for organic meat</td>
</tr>
<tr>
<td>India</td>
<td>Promoting indigenous, self-reliant and organic eco-friendly agriculture</td>
<td>Farmers’organization [Krishi Prayoga Pariwara (KPP)]</td>
<td>1996</td>
<td>Support to farmers interested in research, revitalising local practices, and local cattle breeds</td>
</tr>
<tr>
<td>Peru</td>
<td>Recovering Indigenous Technical Knowledge</td>
<td>Local (IVITA) and US (CRSP) universities</td>
<td>1983</td>
<td>Assessing traditional remedies for parasite control</td>
</tr>
<tr>
<td>India</td>
<td>Conserving the Aseel poultry</td>
<td>NGOs (ANTHRA, YAKSHI) and POs (Girijana Deepika)</td>
<td>1996</td>
<td>Improving small-scale poultry keeping, and revitalising system of sharing and asset building</td>
</tr>
<tr>
<td>Peru</td>
<td>Solidaridad – Villa</td>
<td>NGO [Instituto de Promoción Agropecuaria y Comunal (IPAC)]</td>
<td>1996</td>
<td>Enhancing guinea pig production in combination with home gardens and other measures in urban areas</td>
</tr>
<tr>
<td>Cameroon</td>
<td>Ethnoveterinary Medicine/Fulani Livestock Development Project</td>
<td>NGO (Heifer Cameroon)</td>
<td>1989</td>
<td>Assessing and documenting ethnoveterinary practices, establishing a Council of local ethnoveterinary healers</td>
</tr>
<tr>
<td>Mexico</td>
<td>Genetic improvement of the</td>
<td>Local university (Instituto de</td>
<td>1992</td>
<td>Building up a nucleus herd based on the selection criteria of Indian</td>
</tr>
</tbody>
</table>
Chiapas sheep Estudios Indigenas) women and distribution in communities

Netherlands Finding solutions for environmental problems Farmer organizations (VEL&VANLA) 1992 Environmental co-operatives of dairy farmers, experimentation of more sustainable dairy systems

Benin Programme d’Appui au Development d’Aviculture Villageoise (PADAV) Bilateral donor (DANIDA), NGOs (APRETECTRA, GRAPAD) 1997 Improving village poultry keeping by combining local practices with conventional practices and knowledge

Mexico Conserving the hairless pig through Community Management. Local university (veterinary faculty of Yucatan University) 2000 Comparing advantages of local pig breed with imported breeds; revitalising gene-pool of local breed

Bolivia Improving llama production NGO [Asociacion de Servicios Artesanales y Rurales – (ASAR)] 1995 Support to llama breeders associations, and improving quality and marketing of llama meat and wool

Guatemala Indigenous alternatives to animal production NGO [Veterinarios sin Fronteras (VSF) Guatemala) 2001 On-farm research programmes with livestock keepers, revitalising ethnoveterinary practices, network of village animal health workers

4 Characteristics of the projects

All projects had the following features in common:

- They addressed problems identified by livestock keepers or enhanced activities that livestock keepers’ had started.
- They used participatory methods and encouraged genuine participation.
- They combined the use of local and appropriate outside knowledge and resources.
- They networked among livestock keepers and linked them with other stakeholders (NGOs, scientists, government services, policy makers).
- Most included training and capacity building components for livestock keepers.

Apart from these commonalities, the projects varied in their focus and strategies. In the South, six of the 16 projects focussed on enhancing animal production and the exploration of niche markets, and four on improving selected indigenous knowledge and encouraging local innovation. The remainder centred around a specific technology (donkey plough), promoted ecological agriculture or strengthened pastoral livelihoods through a variety of activities.

Both projects in the North focussed on the creation of niche markets for livestock products and improving the environment, triggering growth of agro-tourism.

5 Impacts

The available data had a number of limitations: identifying projects and collecting information on them has been arduous. The majority of the 16 projects were run by NGOs, which submit project reports but rarely produce scientific papers. As a result, much information is hidden in the grey
literature. Other limitations have been the low quality and incompleteness of many reports, and the lack of quantitative data. Furthermore, for many years the monitoring and evaluation of projects tended to focus on outputs versus project goals, while impact monitoring among NGOs is not yet a widespread requirement. All in all, the available data highlight trends but not firm conclusions on impacts.

5.1 Type of livestock keepers reached
Data on the wealth status of the livestock keepers benefiting from the projects are not available. But there are indications that the projects reached poor and disadvantaged livestock keepers. In the South, seven projects worked with groups commonly categorized as vulnerable and poor: women, blacksmiths and animal healers. Both projects in the North had been started by farmers whose livelihoods had been threatened.

Another indication are the types of activities: they focused on local knowledge and breeds, as well as on species which are typically overlooked by conventional research and development and which are mostly kept by pastoralists and poor livestock keepers (guinea pigs, chickens, pigs, sheep, llamas). However, it is unclear whether the projects aimed to reach the poorest of the poor (or actually did so).

5.2 Empowerment
Nearly all projects contributed to the empowerment of the local partners through training and capacity building, reducing dependence on outside resources, building local institutions such as producer groups, service providers, professional associations, and linking them to other stakeholder groups. In several cases, linkages to scientists and researchers helped livestock keepers to prove the validity of their efforts and lobby for political recognition of their needs.

5.3 Economics
There is little quantitative information on the economic impact of the projects. One exception is the Wajir project in Kenya, which raised the average annual household income by US$424. The project is estimated to have produced an Internal Rate of Return (IRR) of over 50%. A second example is the project in Sudan, which helped village blacksmiths form groups, enabling them to build a workshop and store where they could keep raw materials and finished products. In addition they set up a revolving fund for group members to buy scrap metal from Khartoum. Over the course of two years, the size of the fund (initially £1,250) multiplied eightfold. The project in the Bolivian highlands reported an increase of 9.65 US$ per adult llama sold between 1997 and 2000, as well as increased market opportunities for llama meat and wool.

Still it can be assumed that other projects also benefited their participants in various ways: improving livestock production and reducing mortality, reducing labour and optimizing the use of resources, generating employment opportunities and diversifying income, creating niche markets and adding value to livestock products. In the case of poultry production (in India and Benin), the introduction of vaccination has been especially effective. Institution building appears to have played a key role in helping people to realize economic benefits.

5.4 Sustainability
The projects commenced between 1981 and 2001, with the majority being implemented during the 1990s. Only three projects were younger than 5 years. While positive impacts were reported in many cases, long term sustainability was evident in only a few, and post-project data are lacking for most. The Sudan project reportedly handed some 12 years after project begin the management over to representatives of the community and the project continued until the recent conflict in the Dafur region broke out. The establishment of environmental co-operatives of dairy
farmers in the Netherlands project have recently been recognized by the NL government as a valid approach.

6 Scale and cost-effectiveness of ELD
Most of the projects have been rather small-scale. Perhaps the biggest has been the Wajir project, which set up some 40 pastoral organizations. Others reached several hundred (e.g., PADAV in Benin and Solidaridad – Villa in Peru) up to several thousand livestock keepers (e.g., eco-friendly agriculture in India). The lack of information on costs does not allow general conclusions on the cost-effectiveness of the ELD approach, except for the Wajir project, with its 50%+ internal rate of return.

7 Conclusions and recommendations
This analysis is a first step in research on endogenous livestock development. The data indicate that the projects discussed in this report reached poor livestock keepers, contributed towards their empowerment and gave them some economic benefits. But it is unclear whether the achievements have been sustainable and sufficient to help people out of poverty. Clearly further research on these aspects is needed. Ideally data should be collected by outsiders after the end of project.

Having said this, the ELD projects discussed in this paper do seem to have improved the livestock keepers’ information and knowledge, enhancing their capability to make informed choices and decisions. Institution building and linkages to other stakeholder have played a key role all projects and have been crucial in achieving economic benefits and empowerment. This finding is in accordance with the recommendations by Leonhard (2003) and LID (1999) that the best ways to help poor livestock keepers is to empower them to argue for their rights and to help them build strong associations. However, further information is needed which types of institutions are most efficient to reach these goals (Köhler-Rollefson, 2005). Moreover, various other livestock development efforts in this direction could be included in the analysis.

The potential of ELD is not confined to the South. In the North, ELD has been a useful tool to improve the environment while helping farmers stay in livestock production, as shown by the projects in the Netherlands and Wales.

8 References


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