Prospects of lead farmer concept for improved livestock development among rural communities in Malawi

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ABSTRACT

The growing challenge in the developing countries in undertaking development programmes is lack of consistent and proper implementation strategies. A host of programs aimed at fostering agricultural growth have been implemented over the decades but most have reported limited long term impact. The evaluation reports for some projects fail to justify the poor results, sometimes leaving the burden of blame on the resource poor farmers. Malawi is a country in Africa where agriculture sector employs over 85% of the rural population and accounts for 35–40% of Gross Domestic Product (GDP) which contributes over 90% to total export earnings (GoM, 2007). Livestock industry has not been fully exploited as is evident from its contribution of only 8% to the GDP. The lead farmers’ concept demonstrates the capacity of farmers in achieving remarkable results by diversifying agricultural production and improving their livelihoods. Lead farmers provide a focal point for articulation of specific technology, farmer capacity building and entry point for service providers. The lead farmer concept along with the one-to-one approach in diffusion of the technological interventions has met with substantial success at the grassroots level extension. The concept has been tried and produced desired outcomes in intensive livestock development activities. In particular, production of goats which are easy-to-raise animals has performed extremely well among targeted farmers. After a period of nearly 2 years, hybrid goat population had increased to 1,422 (76% nanny goats) from the initial support of 675 goats reaching over 220 households. A total of 74 secondary beneficiaries had received from the primary beneficiaries accessed through one to one pass-on initiatives with 24 tertiary beneficiaries reported. Farmers have realized increased income sources from goat sales and by-products such as droppings converted to organic fertilizers for crop production. The overall picture drawn indicates the immense potential of lead farmer concept along with one-to-one diffusion approach in livestock development leading to improved rural livelihoods. The implementation strategy, proper capacity building and farmer involvement is central towards the overall success of the interventions.

Key words: Lead farmers, livestock package support, one-to-one approach, in-built farmer monitoring and stakeholder involvement

The diverse number of approaches used implementation of development activities has played an important role in improving rural livelihoods. Farmers’ active involvement has remained on the low in most of these. The end result has largely led to ineffectiveness with less output characterized by minimum sustainability of interventions. This raises an important question that remains unanswered- “are farmers unable to take up development activities?”

However some farmers have been influential towards the success of interventions. Farmers’ self-initiatives in communities have transformed their way of lives by increasing the scale of production and productivity. These farmers have been a driving-force for the entire process ranging from production until disposing of the produce to marketing outlets.

According to Ministry of Agriculture in Malawi (2010) lead farmer is defined as an individual farmer who has been elected by the community to perform technology specific farmer-to-farmer extension and is trained in the technology. A series of community sensitization meetings and Participatory Rural appraisals (PRAs) to empower and orient on lead farmer concept is of paramount importance for the successful
processes. The document also indicates that there exist an opportunity for farmers to play a role as extension service providers in the new framework of service provision.

The Government extension worker to farmer ratio is very high, estimated at 1:1500 against a target of 1:750. This gap is very huge to effectively reach out to the increasing needs of the rural areas. The lead farmer concept infiltrates perfectly well for its reachability to complement the efforts.

This paper therefore provides an overview of how lead farmer concept has significantly contributed towards livestock development. The concept demonstrates the capacity of farmers’ commitment and determination in achieving remarkable results by diversifying in agricultural production. The concept has been tried and successfully produced desired outcomes in intensive livestock development activities. Some of the benefit of the concept includes;

- Increased farmers’ networking and linkages in the communities. This enhances exchange of knowledge and sharing of experiences for increased agricultural production.
- Helps in changing attitudes of the people. Farmers are able to motivate and encourage each other in adopting technologies. Due to trust, closeness and sharing common attributes, farmers become more inclined learn from fellow farmers.
- Farmer capacity building has been promoted among members in the communities.
- Entry point to other development initiatives. Other service providers are attracted towards success factors of particular activities for them to win confidence among the people and the entire society.

Objectives of the study:
1. To study the implementation approaches of livestock interventions through lead farmer concept
2. To document the sustainability factors for improved livestock development activities

METHODOLOGY

The study was conducted as part of examining the lead farmer activities implemented through SHA activities. In similar manner make a contrast to other approaches that other implementing agencies are following. The sampled districts included Lilongwe, Kasungu, Dedza, Balaka and Machinga where related interventions are predominant.

Data was collected by administering questionnaire to officers/ experts from government and non-governmental organizations that are involved in livestock development activities. The basic idea was to seek their opinion on implementation approaches for rural farmers’ livestock activities. A total of 20 respondents were interviewed randomly across the institutions.

A Scientific Package for Social Scientists (SPSS 16) was used for data analysis and interpretation. Descriptive statistics like means, frequencies, percentages and t-test have been provided to show the results of the study. The case studies on success stories from outstanding farmer activities have been presented. Secondary data sources have also played an important role in the process.

RESULTS AND DISCUSSION

Initiatives on livestock development from government and NGOs: Initiatives by government to promote and improve livestock program has been implemented through special projects such as Farm Income Diversification Programme (FIDP), animal health project, Rural Income Enhancement Program (RIEP), Agriculture Sector Wider Approach program (ASWAP) and Enhancing Food Security and Developing Sustainable Rural Livelihoods Project supported by FAO in Machinga ADD.

Similar efforts through NGOs have also been predominant in complementing the government initiatives. Common projects implemented under NGOs include; Kalembo Rural Development Project supported by Self Help Africa, Small Scale Livestock Promotion Program (SSLPP), Msamala Environmental Rehabilitation and Livelihood Improvement program supported by Concern Universal, Wellness Agriculture for Life Advancement (WALA) by Project Concern International, Trustees for agriculture promotion program and Oxfam livestock programs.

Project success as perceived by development officials (n=20)

<table>
<thead>
<tr>
<th>Implementing agency</th>
<th>Projects</th>
<th>Description</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Government</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project 1</td>
<td>Low</td>
<td>45</td>
<td></td>
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<tr>
<td>High</td>
<td>55</td>
<td></td>
<td></td>
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<tr>
<td>Project 2</td>
<td>Low</td>
<td>45</td>
<td></td>
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<tr>
<td>High</td>
<td>55</td>
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<tr>
<td><strong>NGOs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project 1</td>
<td>Low</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>70</td>
<td></td>
<td></td>
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<tr>
<td>Project 2</td>
<td>Low</td>
<td>40</td>
<td></td>
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<tr>
<td>High</td>
<td>60</td>
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</tbody>
</table>
The government projects 1 and 2 rated lower (55%) than those of NGOs projects 1 and 2 which rated 70% and 60% respectively. This could reflect that the NGOs projects were more focused in their modes of implementation to achieve higher success rates in addressing farmers’ livestock problems.

### Implementation approaches between government and NGOs projects (n=20)

<table>
<thead>
<tr>
<th>Implementing agency</th>
<th>Activity</th>
<th>Description</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>Needs assessment</td>
<td>Low</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Identification of beneficiaries</td>
<td>Low</td>
<td>45</td>
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<tr>
<td></td>
<td></td>
<td>High</td>
<td>55</td>
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<tr>
<td></td>
<td>Training support</td>
<td>Low</td>
<td>30</td>
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<tr>
<td></td>
<td></td>
<td>High</td>
<td>70</td>
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<tr>
<td></td>
<td>Package of inputs</td>
<td>Low</td>
<td>50</td>
</tr>
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<td></td>
<td></td>
<td>High</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Farmer centered monitoring plans</td>
<td>Low</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Joint monitoring involving experts in livestock</td>
<td>Low</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
<td>20</td>
</tr>
<tr>
<td>NGOs</td>
<td>Needs assessment</td>
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<tr>
<td></td>
<td>beneficiaries</td>
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<tr>
<td></td>
<td>Identification of beneficiaries</td>
<td>Low</td>
<td>40</td>
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<tr>
<td></td>
<td></td>
<td>High</td>
<td>60</td>
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<tr>
<td></td>
<td>Training support</td>
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<td>High</td>
<td>90</td>
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<tr>
<td></td>
<td>Package of inputs</td>
<td>Low</td>
<td>25</td>
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<td>High</td>
<td>45</td>
</tr>
</tbody>
</table>

2.4 Results of t- test for rate of project successes

#### One-Sample t-test statistics

<table>
<thead>
<tr>
<th>Categories</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>NGOs project 1 rate of success</td>
<td>20</td>
<td>3.9500</td>
<td>0.75915</td>
<td>0.16975</td>
</tr>
</tbody>
</table>

#### One-Sample t-test

<table>
<thead>
<tr>
<th>Category</th>
<th>T</th>
<th>Df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Diff.</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>NGOs project 1 rate of success</td>
<td>2.651</td>
<td>19</td>
<td>0.016</td>
<td>0.450</td>
<td>0.095</td>
</tr>
</tbody>
</table>

Statistical hypotheses: Ho: µ = 3.5 and H₁: µ ≠ 3.5

Test Value = 3.5

Formula
\[ t_{obtained} = \frac{\bar{Y} - \mu}{\bar{S}_Y} = 2.651 \]

\( t_{critical} = 1.729 \) (From t-test table; df=(n-1) two-tailed at a=0.05)

Where:
- N= Number of subjects in the sample; \( \bar{Y} \)= Sample mean; \( \mu \)= Population mean;
- \( \bar{S}_Y \)= Standard error of the mean; df= Degrees of freedom= (n-1); and Sig.= Obtained= chance difference due to sampling error

Practical significance:

\[ d = \frac{|\bar{Y} - \mu|}{\bar{S}_Y} \]

Where:
- \( d \)= measure of practical significance (effect size) and \( \bar{S}_Y \)= standard deviation

If the calculated value of \( t \) is greater than the table value, the hypothesis is rejected indicating that the difference in means is significant. On another hand if the calculated value is less than the table value, the hypothesis is accepted showing that the difference in means is not significant.

**Summary of inference**: The NGOs: Ho \( t(19) = 2.651 \). It is therefore, inferred that the difference in mean was significant in the success rates of the projects.

**Implementation strategies**: The success of the program is crucial depending on the approach adopted and level of beneficiaries’ involvement.

**The beneficiary’s needs**: It was noted that government projects indicated 30% farmer involvement in farmers’ needs assessment prior to rolling out their activities as compared to NGOs which reported 70%. Since farmers are faced with myriad challenges, it is more practical to address what they urgently feel and it is a core shortfall of Government projects. The beneficiaries’ involvement is essential for drawing up solutions based on analysis of the farmers’ current situation.

**Beneficiary’s identification**: This phase registered small difference between government (55%) and NGOs (60%) in targeting beneficiaries. It appears that implementing agencies take considerable time in facilitating this process since it has future impacts in the success of the activities. In which case, systematic targeting procedures are useful together with involvement of local leaders. The concept should also be well understood by the communities through sensitization meetings and effective empowerment.

The implementing agencies together with government experts should facilitate the processes in
order to protect the interest of farmers. The community members are well conversant with their own situation and will be able to select the rightful beneficiaries. They have social ranking criterion such as access to resources, wealth ranking and participation in development activities just to mention a few. When rightful beneficiaries/lead farmers have been identified, other activities will find a much more permissive environment.

**Beneficiary capacity building**: Under this, NGOs were rated as high as 90% as compared to government projects which were at 70%. This is an important process that ensures that lead farmers are provided with sufficient knowledge and skills in livestock management. It would also reflect the observation why NGOs had higher rate of success in the projects. Well organized and practical trainings are useful for sustaining livestock development interventions.

Poorly trained farmers would result into high death rates of livestock which will have enormous loss on the investment coupled with low sustainability. Some of the useful trainings are:

- Familiarize beneficiaries on lead farmer concept covering on the idea behind the concept, roles, mode of operations and facilitation skills
- Leadership skills activities
- Livestock management practices including housing, feeding, breeding, diseases and pest control.
- Capacity building to paravets that support drug revolving scheme and administration of drugs to livestock in the communities. This is an important area since there are limited number of veterinary experts and veterinary services in rural areas.
- Fodder establishment and management
- Feed preservation/storage and formulation
- Prescribed modalities for pass-on of livestock
- Marketing skills include the business plans, market research etc

The training should be well planned and implemented fully by covering all topics in order to enhance efficiency and effectiveness among beneficiaries. It is also necessary to ensure that well qualified experts are engaged in delivering of the trainings.

**Package of inputs support**: Government projects reported nearly half of rate of provision as compared to NGOs which rated 75%. Inputs should be provided as a package comprising all elements that are locally unavailable such as small stocks, drugs, livestock seed, and fodder. Rightful provision is essential as it relates to timely implementation of series of livestock activities like farm designing, construction of kraals (livestock house) and establishment of fodder fields.

The health, productivity of livestock and forage production are directly and closely related to fodder development program. Grazing lands keep on shrinking due to competing demands for food under increasing population pressure and there is limited forage conservation to sustain livestock in years of lean periods (Sagar Modal, 2009). There is also need for farm feed storage sourced from crop residues which should be exploited to diversify feed for livestock. Proper storage and feed formulation techniques should be designed for use among the lead farmers for quality assurance.

**Initiate in-built monitoring among farmers**: Under promotion of farmers’ own monitoring strategy, government projects were rated as low as 25% while NGOs indicated nearly 50%. This is a deliberate effort to enable farmers to take leading role in monitoring each other and share experiences. The process enhances ownership and sustains the activities among the communities in the long run. The lead farmers for the specified catchment area should identify a common place where they are able to meet up and discuss their activities. Thus, enhancing detailed documentation of information on activity progress such as uniformity of kraals construction, type of feed provided, livestock population from the start to present, cases of diseases and pests affecting the animals, etc will take place. The meetings must be conducted on regular basis with proper issue documentation and coming up with solutions to problems being faced. Any problems which they fail to address can be shared through joint meetings with stakeholders. In so doing, farmers encourage and strengthen each other for the success of their enterprises.

**Joint monitoring involving experts in livestock**: Only 20% of time is featured in government projects as compared to almost 50% as featured by NGOs to promote joint monitoring visits to livestock interventions. Limited or less farmer supervision to discuss progress is crucial for livestock development. The stakeholders play an essential role in providing on-site advice to the farmers. The joint monitoring must be conducted periodically in a consistent manner according to farmers’ scheduled programs. The farmers feel proud by having
such high competent experts when they visit their households. In this way, farmers are encouraged and motivated to take care of their livestock very well. The rotational visit to farmer sites renders the beneficiaries to become more committed to improve their livestock activities.

Model for implementation: The revolving-scheme program featured high among the respondents. Farmers should be supported with start-up inputs with well stipulated guidelines agreed by the stakeholders (farmers, functionaries from government and development agencies). The program should target selected lead farmers while in the long run aim at reaching the entire community.

The village/community should be empowered so that they can manage and monitor repayments and even identification of lead farmers/beneficiaries. The identified farmers would further be trained to raise livestock. The selected farmers must enhance one-to-one farmer approach for increased accountability. The next lot of beneficiaries should further be strengthened in readiness to access the passed on offspring. Lead farmers ‘X’ would be in turn strengthened to monitor directly by beneficiary ‘Y’ for accountability.

The community should manage the processes by ensuring that beneficiaries repay back the loans at one-to-one ratio. It will be community responsibility to decide on how to replenish other costs by initiating additional contributions depending on their by-laws. With well coordinated efforts at community level, the repaid loan is in turn given to the next identified beneficiaries. The next lot of beneficiaries should be able to get locally coordinated training through fellow farmers. This group of beneficiaries must take advantage of the already successful farmers through farmer-to-farmer learning. The farmers must be able to carry some locally arranged awareness programs and practical demonstrations to train others. The process will create opportunity for increased sustainability and ownership if communities are well empowered at the initial stages of the entire program.

The success of the processes should be held on the principle of periodic communal meetings that are aimed at ensuring that farmers are assisted whenever they experience some problems. The challenges faced must be sorted with urgency especially if it would require external support from the stakeholders. Documenting data on progress being made at village level and impacts registered among beneficiaries must be organized and preserved. These meetings are useful for devising strategies for future growth.

A network of livestock groups may be created by utilizing the working relationships in the villages. The villages may pull resources together and draw some strategies in order to exploit markets. In prescribed arrangements and within specified working radius, organizations like associations or cooperatives can be initiated. At that level, there will be more chances of growth and subsequent investment in other activities such as ruminant production, acquiring bigger loans and having greater bargaining power in markets.

Opinion about small stock production in improving rural livelihoods in Malawi: The overall opinion about small stock production for improved rural livelihoods in Malawi was as follows;

1. Generation of household income in relatively quicker manner with higher returns over a shorter period of time.
2. It is a promising enterprise because small stocks are easy to manage for low income earners and vulnerable rural groups
3. Ultimate source of income diversification with high potential of developing rural livelihoods
4. Small stocks are less labour intensive which gives ample time for even women especially who are overburdened with both productive and reproductive roles to ably participate in this.
5. They provide good source of nutrition to rural people as such addressing problems of nutrition.
6. Revamping deteriorated and non-functional rural veterinary services such dip tanks, livestock clinics etc is necessary.
7. Small stocks have shorter multiplication period hence can easily be promoted to reach out many rural communities.
8. Access to credit facilities that can be invested in small stocks production should be made available.
9. Active involvement of rural farmers in livestock selection processes and production

Major restricting factors to small stock production and some proposed measures for growth of the sector in rural areas :

1. Poor livestock management practices

Solutions: Capacity building to farmers on aspects of livestock management involving well trained
veterinary experts and consistent participatory monitoring. The farmers should take leading role of supporting and monitoring each other.

2. Livestock in relatively unhealthy and less productive condition due to poor feeding
Solutions: Capacity building to farmers on proper feeding regime, promote supplementary feeding, promote feed storage and encourage fodder establishment programs

3. Limited veterinary services in rural communities hindering the efforts of livestock programs.
Solutions: Capacity building to paravets at community level, increase access to veterinary services and increase number of veterinary experts

4. Hand out syndrome which promote communities failure to contribute for livestock activities such as procurement of livestock drugs
Solutions: Promote revolving scheme activities and create more access to credit facilities

5. Lack of reliable livestock markets in rural areas
Solutions: Empower livestock farmers to work in groups which would enhance pooling of resources together for bulk selling to increase returns.

Livestock enterprise should be market oriented besides creating market linkages

6. Limited knowledge among farmers on selection of profitable livestock enterprises
Solutions: Promote learning models among farmers taking advantage of successful farmers based on their local environment

7. High inbreeding cases leading to low quality livestock breeds.
Solutions: Farmers must be encouraged to keep proper records of their stock and the livestock sources must be well known because chances of inbreeding may be high

Success factors:

Government and stakeholder support: There has to be continued cooperation among the stakeholders to strengthen and support the initiatives that the farmers are involved in. Policy formulation is necessary to promote investing in agricultural production for bettering farmers livelihoods. The policies should have provisions for the soft loans to venture into agriculture.

There should be promotion of research activities on livestock production for new technology development such as recommending livestock breeds, appropriate feed formulations, forage seeds/planting materials, establishment of fodder banks etc. The experts must develop technologies that are appropriate to the climatic and agro-ecological zones for enhanced productivity.

Farmer strategic initiatives: The farmers should take all initiative to implement livestock development interventions. Some of the areas of interest would include:

- Enhanced farmer-to-farmer support and linkages to inspire more farmer active involvement
- The interventions should be tailored towards exploiting intensive livestock activities for increased returns.
- The farmers should be able to identify and come up with solutions to challenges that they encounter and preferably refer to experts if need be.
- Farmers must develop their own by-laws to facilitate good livestock management activities and set-up penalties for the defaulters to ensure uniformity of success.

Growth factors: The lead farmers should be able grow and diversify their enterprises. Farmers should take advantage of goats’ high rates of multiplication for further growth. In terms of scaling up their activities, the following elements may be considered:

- Ability to expand production capacities by increasing the numbers of livestock populations.
- Exploit opportunities to diversify into ruminant production. The skills learnt from the non-ruminants (small stocks) can be very essential at raising ruminants.
- The opportunities to specialize livestock activities such as breeding programs.
- Establishment of livestock fodder banks with diversified varieties of fodder crops.
- Identify and establish market outlets that fetch better returns

Case study of lead farmer livestock pass-on programme in Kalembo- Balaka District in Malawi by Self Help Africa (SHA): The project is supporting farmers’ livestock production activities through a pass-on (revolving) scheme program. This is mainly aimed at improving goat breed, increasing goat population, sources of meat protein and income among households. The project was initiated as a result of the baseline study report conducted in January 2006 that revealed worsening problems of food insecurity, low income levels and low access to social services. Hence, one of the
interventions envisaged was livestock improvement program through provision of start-up inputs and capacity building to lead farmers.

The community members play an active role in overall coordination of the activities like beneficiary identification, monitoring, locally arranged training and revolving offspring. The lead farmers are targeted at village level and are provided with initial livestock inputs that are later revolved among community members. A series of trainings are carried out including livestock management, drug administration, model khola (livestock house) construction, leadership skills, fodder establishment and pass-on initiative.

Communities are empowered to monitor the entire processes by conducting constant supervisory visits to members and assisting each other. After a period of nearly 2 years, hybrid goat population had increased to 1,422 (76% nanny goats) from the initial support of 675 goats reaching over 220 households. A total of 74 secondary beneficiaries had received from the primary beneficiaries accessed through one to one pass-on initiatives with 24 tertiary beneficiaries reported. Each beneficiary receives a boer and two local nanny goats. The community receives a package of livestock drugs which are meant to be replenished by initiating small contributions from the members. Total of MK79, 230.00 (iiMK denotes Malawi Kwacha (currency)) has been revolving as fee services for livestock and membership contributions towards the drugs replenishment activities and growth of livestock activities

The program is producing outstanding results as many new households are being targeted once the beneficiaries pay back loans which are in turn provided to new members. The repayment rate for the primary and secondary beneficiaries was completed and tertiary and more sets of beneficiaries are yet to benefit.

**Salient Outcomes**
- Increased availability of improved livestock breed in the impact area especially boer goats
- Increased number of households raising improved livestock breed
- Increased livestock population among beneficiaries
- Increased number of households accessing and using manure for composting activities
- Increased number of households with added source of income and improved diet.

The main challenges are farmers delay to pass-on the offspring and also lack of commitment to contribute fees towards the drug revolving scheme. These problems are addressed through consistent follow-ups among members and charging penalties.

**CONCLUSION**

There is immense potential for lead farmer concept along with one to one diffusion approach in livestock development for improved rural livelihoods. The implementation strategy, proper capacity building and farmer involvement is central towards the overall success of the interventions.

**REFERENCES**