

SECURING WATER FOR FOOD

Meat Naturally Performance Evaluation

Ecorangers and Communal Grazing Systems in South Africa

AUGUST 2019



SECURING
WATER
FOR FOOD:
A GRAND CHALLENGE
FOR DEVELOPMENT



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ABSTRACT

Meat Naturally Pty Ltd (MNP) is a for-profit organization based in the Eastern Cape, South Africa. The organization collaborates with non-profit organizations to manage communal grazing land in three regions around South Africa with the purpose of conserving grassland and improving rural livelihoods. MNP partners are Implementing Agents (IA), they include Conservation South Africa (CSA), LIMA Rural Development Foundation (LIMA), TransKinira Trust (TKT), Environmental and Rural Solutions (ERS), and others. Generally, IA's are responsible for the planning, facilitation, and monitoring and evaluation of activities in line with MNP objectives relating to the ecorangers management and rotational grazing. However, the capacity and projects of each organization influence its scope of work in collaborating with MNP and, therefore, the end results.

The work of MNP was evaluated using a questionnaire that investigated the farmer, farm, income and expenditure, and farmers' perceptions of the innovation. Six locations were visited with a total of 65 customers participating. All 65 interviewed farmers participated in MNP auctions by selling cattle. A significant number of farmers acknowledged the role of MNP as paramount in helping them sell their cattle, thereby improving their income and reducing poverty. MNP and the partners positively contributed to grassland restoration with farmers acknowledging a change in livestock health and their herd increasing with no mortality as a result of overgrazing.

Overall MNP and its partners (including the EcoRangers) are reviving the grazing land of Umzimvubu and the practice of communal farming by involving farmers and community members and subsequently improving their livelihoods. This has yielded positive results so far. However, for sustainability, the EcoRangers need to do more to help farmers positively embrace rotational grazing, understand the dynamics of pricing per kilo, and know the value of different breeds. Also, MNP should reach out to make farmers further realize the impact of climatic variability.

INTRODUCTION



Communal farming is an old practice that is still common in rural areas of Africa and developing countries (Mmbengwa et al., 2015). Food security is one challenge that most developing countries face, and South Africa is no exception. Livestock production significantly contributes to South Africa's food security, economy, and social activities. It is estimated that over 50 percent of total South African livestock is in the hands of small-scale producers and communal farmers. However, they only contribute five percent of the total annual meat consumption (Rust et al., 2019). This is because of low levels of nutrition, climate variability, and poor management in communal grazing areas. This causes farmers to be frustrated with the value of balancing summer grazing and winter grazing, as they are accustomed to having their cattle suffer in winter and overgraze in summer for immediate recovery, making it difficult for them to be consistent or reliable suppliers. Farming in unprotected and shared grazing spaces is challenging, but it is even more difficult if there are no developmental programs that offer guidance on practices and help farmers with challenges or limitations, such as inadequate resources and market access.

In the Eastern Cape the geographical landscape is considered to be 90 percent suitable for livestock grazing, nature conservation, and game ranching (De Wet & Van Averbeke, 1995). However, in communal farming spaces the value of the land is hardly realized because of poor management and the persisting climatic variability that affects water sources in a dry country, ranked 30th globally. In the Eastern Cape this is exacerbated by the abundance of alien plants in the country. The erratic rainfall further affects the vegetation and/or grassland, thereby exposing the soil to erosion and land degradation.

In the Umzimvubu region where MNP is based and well established, the value of livestock farming in poverty reduction is of great importance. This is because of the presence of rangelands/grasslands, the absence of industries, and 35 percent unemployment in the province (Stats SA, 2019). MNP is one initiative that seeks to develop a sustainability cycle that protects the environment from degradation and simultaneously promotes the involvement of the communal livestock producers in the supply chain of red meat without negatively impacting their production capacity. The approach of MNP and its partners is that healthy rangelands will produce increased quantity and quality of livestock, which, with improved market access, will improve returns for rural livelihoods. It also provides a positive feedback loop for better rangeland stewardship to support this stock, resulting in improved basal cover and grassland biodiversity with improved ecosystem services. MNP, as a consortium, achieves this through collaborating with partners such as Conservation South Africa (CSA), LIMA Rural Development Foundation (LIMA), TransKinira Trust (TKT), Environmental and Rural Solutions (ERS), and others. Generally, the role of the partners is planning and facilitating the rangeland work, including formation and support of grazing associations within communities, conservation agreements, identifying rest areas with associations, auction preparations, and M&E of all areas.

Therefore, it is the purpose of this study to evaluate the performance of MNP in promoting sustainable grazing, the participation of communal farmers in the red meat supply chain, and improvement of income of rural livelihoods. The study is made up of interviewees that have participated in MNP activities, mainly auction. The interview covers general farmer information, farm, income and expenditure, and farmers' perceptions of the innovation.

BACKGROUND

The survey was conducted in the Eastern Cape, one of South Africa’s largest provinces in terms of livestock populations. MNP is a CSA founded independent for-profit company that is well established in the province with its head offices based in the same province. With more than 10 locations in the province where MNP operates, six of the locations were selected as representatives of the survey mainly because of the diversity that exists in the different locations. All six locations have had the activities of MNP, but not all have had the services of its partners (Table 1). The different MNP partners are Implementing Agents (IA) and act as main supporters for MNP activities. The different partners are established organizations in their respective communities that implement projects that are in line with MNP. Their selection is based on CSA merit criteria with the purpose of advancing MNP objectives, helping to develop MNP as a brand, and gaining farmers trust in MNP over time. The scope of work for each IA is affected by its capacity and projects. CSA is the main MNP support structure and an IA organization, and it covered most of the work that is linked to MNP. The different CSA tasks included community engagement campaigns in holistic planned grazing, alien vegetation awareness and bush clearing, community water sources (through One Health), livestock health, ecoranger skills training, and maintaining ecorangers salaries among others. The tasks for the other IA’s are: (LIMA)-improved grazing management, community exchanges, and livestock auctions among others; (ERS)-grazing planning support, ecoranger skills training for herders, and livestock husbandry support and tagging; and, (TKT)-improved grazing management.

TABLE 1. MNP & PARTNERS INVOLVEMENT IN THE VISITED AREAS

	COLANA	LUYENGWENI	MAFUBE	MPHARANE	MZONGWANE	ONR
MNP involved	Yes	Yes	Yes	Yes	Yes	Yes
Main support partner/s	TKT	MNP	LIMA & ERS	NONE	ERS	CSA
Agreement	Formal/Informal	Informal	Formal	Informal	Formal	Formal

A total of 65 farmers from six different locations (Table 2) were interviewed using a SWFF questionnaire that was uploaded to an application called Fulcrum. The application allowed a profile for every interviewee so their responses could be uploaded for sharing and referencing purposes.

The questionnaire covered the:

- farmer’s information/details, participation in MNP, livelihood and ownership;
- farm and farmer’s involvement in farming and changes as well as access to water personally and for livestock purposes;
- farmer’s income and expenditure questions that intend to share the farmers’ livelihoods and farming challenges; and
- the perception of farmers toward the innovation and its value in their space or lives.

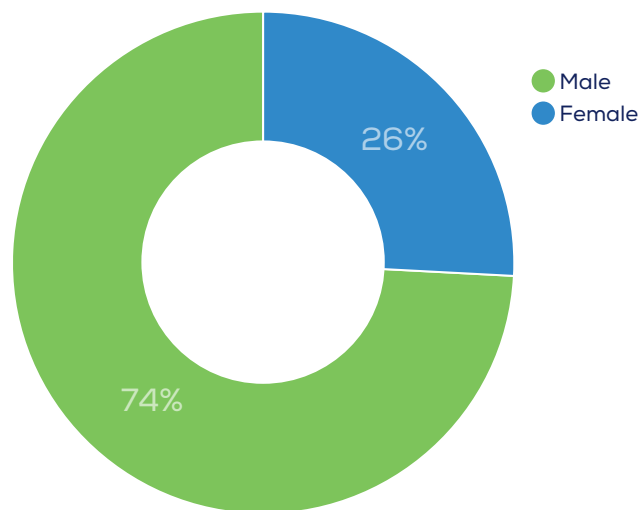
**TABLE 2. NUMBER OF INTERVIEWEES PER LOCATION
(N=65)**

	COLANA	LUYENGWENI	MAFUBE	MPHARANE	MZONGWANE	ONR
Total interviewees	15	6	16	4	13	11
Percentage	23.08	9.23	24.62	6.15	20.00	16.92

Gender

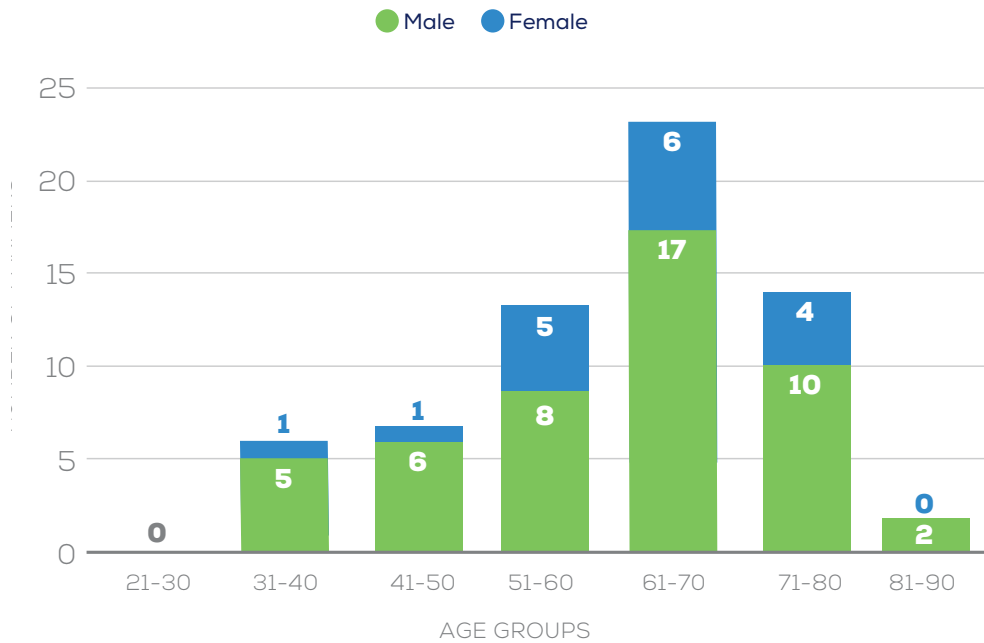
South Africa’s population is approximately 59 million, with males making up about 49 percent of the total population (Stats SA, 2019). The Eastern Cape Province, where the study was conducted, ranks as the third most populated province, and has 53 percent and 47 percent female and male population, respectively. However, in the current study of 65 interviewees, 74 percent (48 of 65) were male (Figure 1). This is in agreement with the findings of a study of cattle farmers in the same province by Marandure (2015).

**FIGURE 1. FARMERS GENDER
(N=65)**



The population participating in the survey consisted of different age groups, and gender between groups was consistently dominated by males. The majority of livestock owners/beneficiaries was 35 percent (23 of 65) between ages 61 and 70. This is the pension age or retirement age in South Africa. The youth age group was the second lowest group to be presented with a total of just over nine percent (6 of 65) (Figure 2).

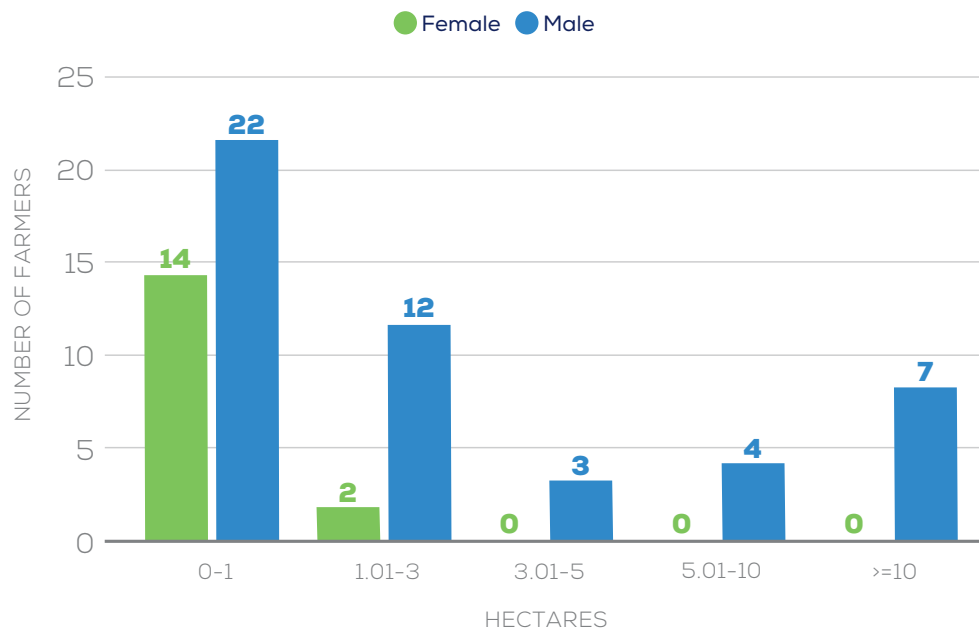
FIGURE 2. FARMERS GENDER AGE DISTRIBUTION (N=65)



Farm size

Cattle farming is a capacity per head practice, especially if sustainable grazing is to be achieved. The current study evaluated livestock farming practiced in communal farming; however, land ownership in size was also evaluated to determine the distribution and potential ownership purposes and associated benefits. The 64 respondents gave varying responses, ranging from zero to 300 hectares. Most of the farmers do not own any land, and the majority of those who own land are male. Just above 56 percent (36 of 64) of the total population does not own land, or they own land less than a hectare. Of the 56 percent, 39 percent (14 of 36) are female. Only three percent of females in the total population (2 of 65) own over one to three hectares of land. About 11 percent (seven of 65) of males of the total population own land greater than 10 hectares (Figure 3).

**FIGURE 3. FARM SIZE
(N=64)**



Farmer’s experience

Cattle farming in the Eastern Cape Umzimvubu region has been practiced for decades from previous generations. Most of the cattle owners are successors or beneficiaries of their grandparent’s or parent’s livestock because they are herdsmen in their family and community, male children, female widows, sole female children in their families, and, to a lesser extent, beginners. Before MNP, the farmer’s markets for livestock were at most dependent on local social events and unfortunate events such as death. However, for some farmers, especially male farmers, cattle were, and still are, sold to auction events in neighboring communities hosted by other organizations that have existed for decades. One farmer shared that they have an organization that has been conducting auctions since the 1980s. Unfortunately, most of these auctions are hosted far from most of the communities and have higher commissions.

All 65 farmers were able to remember their first year of participation in the innovation activities. About 54 percent (35 of 65) of the total surveyed population participated in the first year of the innovation auction by selling one or more cows . The second year auction(s) showed a decline with only 20 percent (13 of 65) of the total population participating as new members. This was followed by a slow increase in the 2018/19 season, whereby only 26.15 percent of new farmers participated. Nevertheless, the participation of females has shown positive growth from the 2016/17 season. In the 2017/18 season, the increase in females was less than one percent, but this was followed by a massive increase in the 2018/19 season of 12 percent (Table 3).

TABLE 3. FARMERS INTAKE AND PARTICIPATION BY GENDER IN INNOVATION (N=65)

FIRST YEAR OF PARTICIPATING IN INNOVATION	NO OF FARMERS	PERCENTAGE OF TOTAL POPULATION	NO. OF FEMALE FARMERS	FEMALE PERCENTAGE	NO. OF MALE FARMERS	MALE PERCENTAGE
2016/17	35	54	8	23	27	77
2017/18	13	20	3	23	10	77
2018/19	17	26	6	35	11	65

Other occupations or sources of income

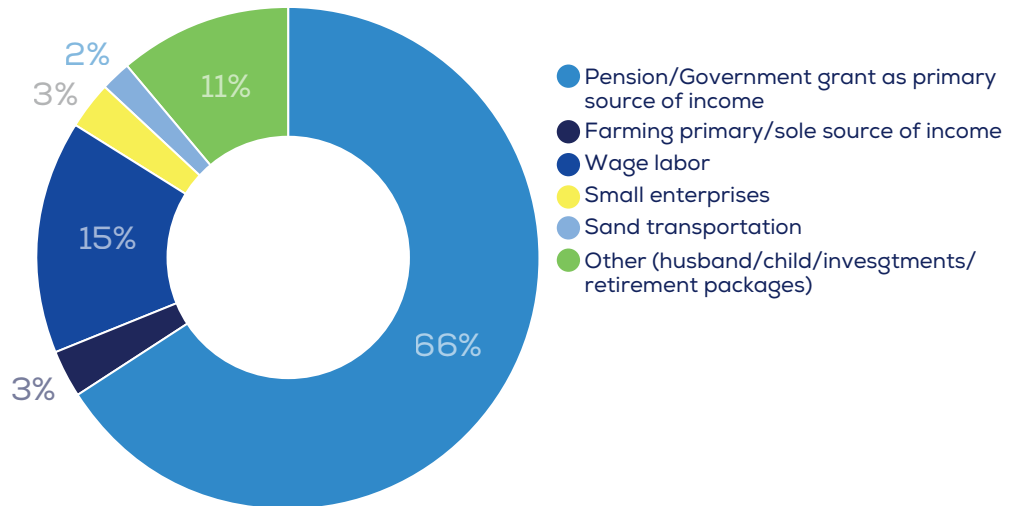
A total of 80 percent (52 of 65) of the respondents accepts farming as their primary occupation, 15.38 percent (10 out of 65) source their primary income from wage labor, just over three percent (2 out of 65) source their income from their established small enterprise (local supermarkets), and only one does not have an occupation although her source of income is from the government pension (Table 4).

TABLE 4. FARMERS PRIMARY OCCUPATIONS (N=65)

FARMING AS PRIMARY OCCUPATION	WAGE LABOR AS PRIMARY OCCUPATION	SMALL ENTERPRISE	OTHER
52	10	2	1
80%	15%	3%	2%

The value of the different sources of incomes varied, especially for the individuals who have more than one occupation or depend on the government pension/social grants. Therefore, the participants were categorized for the value that their sources of income have over the other. A total of six sources of income was common among the farmers. The government social grant was by far the most significant source of income at 66 percent (44 out of 65). Farming income was the fourth/fifth significant source of income at three percent (two out of 65) with small enterprises (Figure 4).

FIGURE 4. FARMERS MAJOR SOURCES OF INCOME





Family size

The 65 respondents represented 395 dependents or family members, with a minimum of one, maximum of 18, mean of 6.28, median, and mode of six for both. Males presented in the survey accounted for 299 of the total family size, and females were 96. On gender differences, males accounted, on average, for 6 and females 6 people. The difference in maximum number of dependency between males and females is two, at 18 and 16 for both genders, respectively. On the contrary, every female had a person to account for, unlike males whereby one is living alone (Table 5).

TABLE 5. FAMILY SIZE FREQUENCIES AND GENDER DIFFERENCES (N=65)

OVERALL FAMILY SIZE FREQUENCIES						
FAMILY SIZE	TOTAL	AVERAGE	MEDIAN	MODE	MIN	MAX
	395	6	6	6	1	18
OVERALL FAMILY SIZE FREQUENCIES						
	TOTAL	AVERAGE	MEDIAN	MODE	MIN	MAX
Male	299	6	6	5	1	18
Female	96	6	4	2	2	16



METHODOLOGY



Sample Selection

MNP operates in three regions around South Africa (Map 1). Each region covers one or more provinces: specifically, the Umzimvubu region is in the Eastern Cape and Kwa-Zulu Natal, the Namakwa region is in the Northern Cape, and the K2C is in Mpumalanga and Limpopo around the Kruger National park borders.

**MAP 1. GOOGLE MAPS:
LOCATIONS OF MNP OPERATIONAL REGIONS IN SOUTH AFRICA.**



Nevertheless, the area of interest and with the most activity is the Umzimvubu where the innovation is well established. In the Umzimvubu area, more than 10 locations with small villages allow work with MNP in both formal and informal agreements. In fact, both locations with formal and informal agreements were included in the study to evaluate the differences. Also, locations under MNP and partners, such as CSA, LIMA, TKT, and ERS, were included in the study because of the role they play in the different locations where they are involved.

A cluster sampling method was applied to conduct the survey. A total of six locations (Map 2) was selected, and in each sample units were randomly selected for individual interviews. From the six locations, 65 farmers were selected.

MAP 2. GOOGLE PRO: GEOGRAPHICAL LOCATIONS OF PLACES VISITED FOR SURVEY INTERVIEWS AT THE UMZIMVUBU REGION.



The selection of farmers was limited to individuals who have participated in MNP, specifically through the sale of cattle in innovation auctions. Large data sheets with farmer’s details and information on the various locations MNP operates in were provided by the organization. Farmers were contacted by telephone to schedule interviews. Initially, the total number of sample units per location depended on the total customer population of an area. This was changed and depended on the availability of farmers on the scheduled day of the interview. The interviews were conducted in the local languages of isiXhosa or seSotho. Since the field evaluator was fluent in these languages, an interpreter was not needed for the interviews. The interviews were conducted using a standard questionnaire from SWFF. The questionnaire was uploaded to Fulcrum, a mobile phone application. Every interview was recorded on a portable voice recorder, except for one that was only recorded for just over two minutes at the farmer’s request.

The selected individuals were contacted by telephone one day before to schedule an interview on the following day or two days later. Individual interviews were the target, but in three instances an interview involving a spouse or child was allowed because the other spouse or the child was more involved on the ground but was not the listed customer.

Some end users on the random list agreed to be interviewed and some did not because they weren't willing or available since their primary occupation is outside the listed location. On the first day of the survey, a random list of potential interviewees was difficult to reach since people were confused about the purpose of the survey from MNP and/or its partners because their relationship was a business transaction that was completed. However, the few end users who were interviewed shared challenges in the community relating to livestock safety that would make some uncomfortable participating in a survey related to livestock in general. Due to a slow start and because people were not at ease with conducting interviews, another plan was strategized and implemented. Less often, in locations where a customer would allow for the first interview, a request was made to have a local young person accompany the interviewer to some of the people on the list that had agreed to have an interview without informing them prior to the visit. However, it should be stressed that verification of identity through a call at the presence and with the knowledge of the interviewee was done. Also, it should be mentioned that the farmers welcomed the strategy, and there was no risk to the young people or jeopardizing of the survey. Other participants warmly welcomed the interviewer from a basic introduction because they were previously informed of a possible visit. (Editorial Note: SWFF was not informed in the proposal phase, the implementation phase, or after the implementation phase that minors would be involved in this study. Though the families gave consent, SWFF did not approve in any form the involvement of minors in the Field Evaluators Activity and notes that the Field Evaluator involved minors without the knowledge or approval of SWFF.)



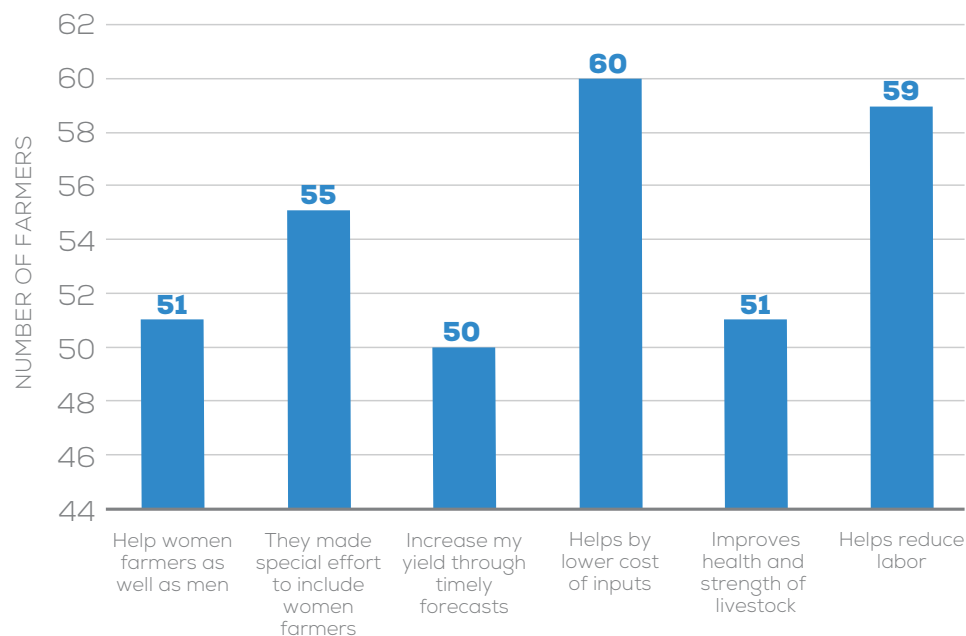
RESULTS



EXPERIENCE WITH INNOVATION

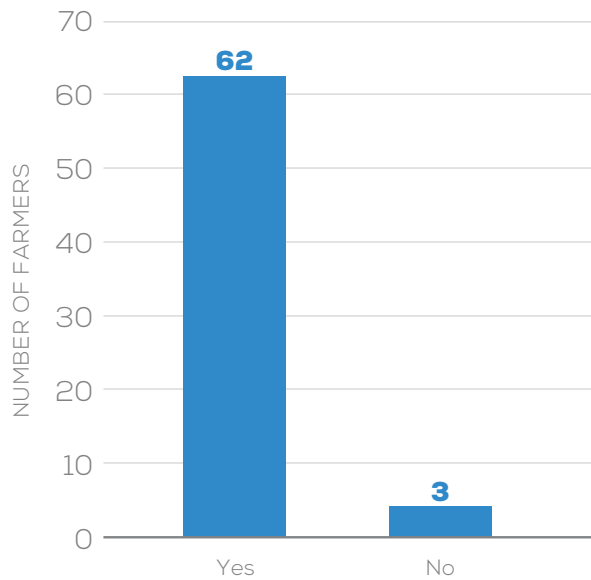
Farmers acknowledged the role and contributions of the innovation in their locations, with most having more than one positive impression. A total of 92 percent (60 of 65) of farmers realized that the presence of the innovation in their areas is very helpful in reducing costs involved in transportation of cattle to other locations that host auctions. Another 91 percent (59 of 65) observed a decrease in labor required to get their cattle to the marketplace where they can be sold. Farmers shared that the presence of the innovation locally allows them to attend the auction. Unlike having a herdsman to herd their cattle a day before or early in the morning to go to the auction facilities that are far from their location. About 74 percent (51 of 65) acknowledged the inclusion of and equal treatment between genders during auctions by the innovator, and 85 percent (55 of 65) acknowledged special effort put forth in accommodating women (Figure 5).

FIGURE 5. FARMERS VIEWS ON INNOVATION CONTRIBUTIONS (N=65)



When asked if they will use the innovation in the future (five to 10 years), 95 percent said they will use the innovation going forward. Only 5 percent (three of 65) said they are not going to continue using the innovation (Figure 6).

FIGURE 6. FARMERS VIEWS ON USING INNOVATION IN FUTURE (N=65)



Farmers were asked why they would continue using the innovation and had one or more reasons for continuation. The majority of the farmers at 52 percent (32 of 61) shared they will use the innovation for sourcing income used for supporting their families as a main source of income or for supplementary income for their projects (building, debts, etc.). Only 2 percent (one of 61) stated they will use the innovation because the commission is low compared to other organizations that offer auctions for cattle sales. Of the 61 farmers, two sets of 15 percent (nine of 61) said they will use the innovation for sourcing emergency funds and sell their cattle to save them from death and theft. Just under one-third (33 percent) felt they will continue using the innovation auction because they are hosted locally (Figure 7).

FIGURE 7. FARMERS REASONS FOR USING INNOVATION IN FUTURE



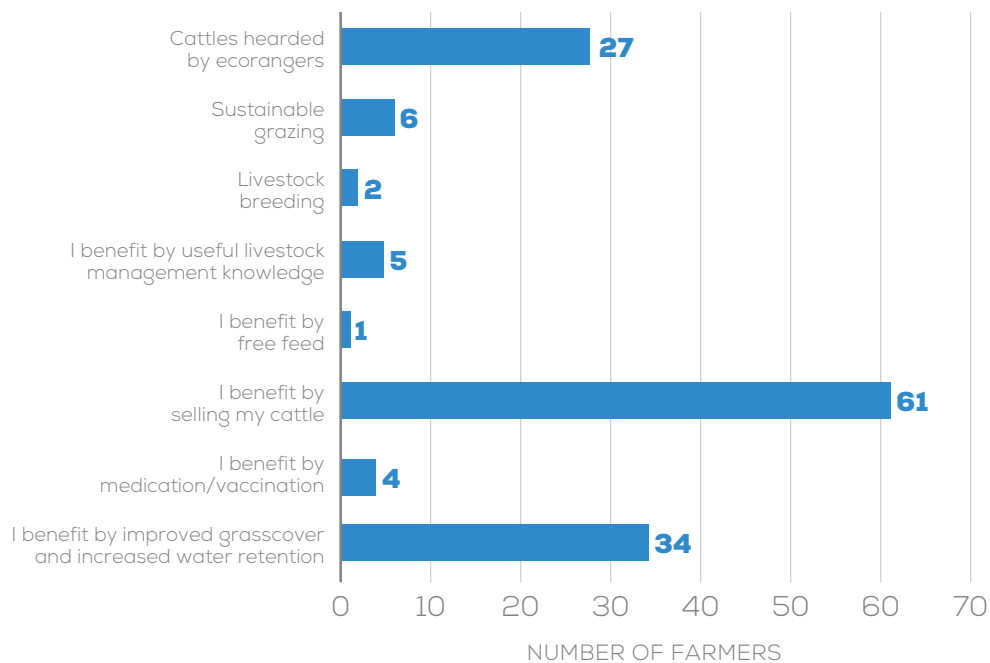
BENEFITS OF INNOVATION

Agricultural activities benefits

Agricultural benefits were realized by farmers from the different locations. Depending on the extent of MNP and partner engagement or individual engagement by MNP, the results varied significantly. The most common and widely regarded benefit was selling cattle to the innovation auctions, at 94 percent (61 of 65). Customers acknowledged cattle selling as the main benefit from the innovation. The second most recognized benefit was improved grass cover and increased water retention at 52 percent (34 of 65). The least considered benefit was free cattle feed at 2 percent (one of 65). This farmer acknowledged free cattle feed referenced as a salt lick that was offered by MNP's implementing partner to help their cattle with appetite.

The value of selling cattle during the innovation auctions is unambiguously of great importance; however, during the interviews, farmers shared the importance of other progress noticed in their livestock, including a decrease in the mortality rate of their cattle. The reasons included medications or vaccinations that seasonal veterinarians offered through MNP and its partners. Some farmers appreciated the knowledge of understanding the different seasonal commercial feeds they have gained from MNP and its partners. Some were happy with their decision making and valued the innovation's presence as the reason because they are now able to sell their cattle if they show signs of dilapidation (Figure 8).

FIGURE 8. FARMERS AGRICULTURAL BENEFITS (N=65)

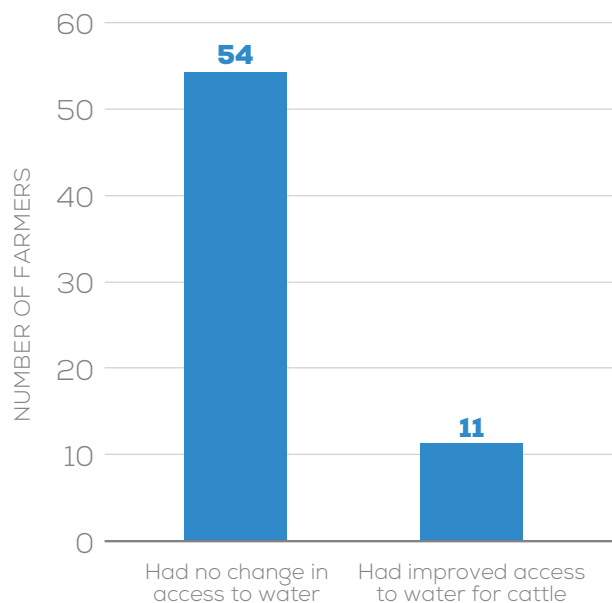


Although the role of ecorangers was recognized as a benefit by 42 percent (27 of 65), farmers have their own description of ecorangers. According to the farmers, the ecorangers are not cattle herders but rather grazing field guards. They described them as people who protect certain portions of the grassland reserved for winter grazing. In the process, some shared that they were not happy with the system. Farmers felt that ecorangers should rotate the livestock on their behalf in the different grazing spaces because ecorangers now know the fields better than the herdsman. On the same subject, two farmers appreciated the benefit of ecorangers and rotational grazing, noting that it dates back to an old practice that has helped them or their relatives in the past so they would like it to be restored to accomplish sustainable grazing.

Water benefits

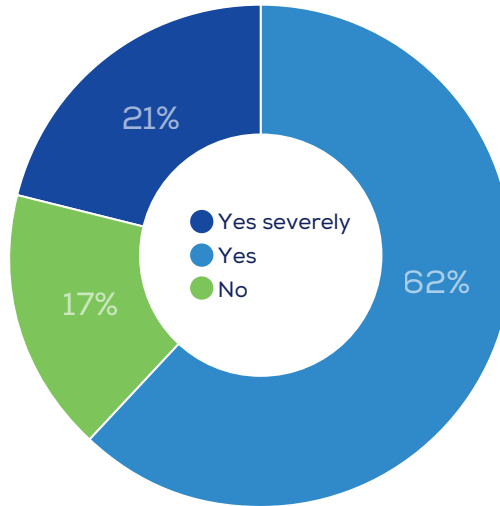
One of the least acknowledged benefits by the farmers was water. The contribution of MNP and its partners in water for the communities is indirect and hard to quantify for farmers because of the scientific and technical nature of the activity. However, according to MNP, CSA and its partners claim to have reallocated 100,575 liters and 259,175,000 liters on year 1 and 2 respectively back into the soil because of reduced erosion and the removal of invasive species that would have consumed that much water as compared to local grasses. Farmers that acknowledged a change in water access for cattle mainly referenced the removal of alien plants in the vegetation around the rivers and, to a lesser degree, the removal of dead plants and debris that prevent the cattle from drinking water from a stable position. Lastly, the removal of blockages of the free flow of the river was also acknowledged as a reason why there is a realization of change in cattle accessing water. On the contrary, there was an unfortunate and isolated incident that one farmer associated with the removal of alien plants. The farmer shared that his neighbor lost her goats due to slipperiness and a landslide that fell on the goats due to the removal of the plants that held the soil together. A total of 54 respondents believed there isn't a change in the way the cattle access water post participation or in involvement of MNP and its partners in their community. Only 17 percent acknowledged a change in the way cattle access water (Figure 9).

FIGURE 9. CHANGE IN WATER ACCESS FOR CATTLE



A total of 21 percent (14 of 65) of the respondents regarded water as a severely scarce resource. Scarcity was further supported by 62 percent (40 of 65) that felt water is fairly scarce in their area. However, 17 percent (11 of 65) felt there's no water scarcity problem (Figure 10).

FIGURE 10. COMMUNITY WATER SCARCITY (N=65)



The water sources for the communities are limited to river water for both human and livestock use (see photo below). However, Mzongwane has a solar powered borehole that supplies the community with groundwater. River water is supplied to community street taps or households using diesel powered generators. The cattle drink water directly from the river. It was shared that the cattle are herded to the river generally twice a day in the winter because they graze far from water sources. In the summer, the cattle are kept on the flat surfaces and are free to reach water sources.

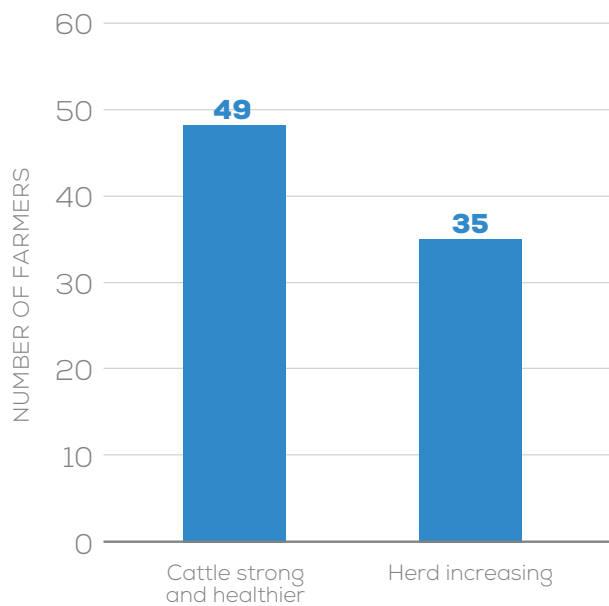


Mkhemane River, community and cattle water source

Livestock benefits

The cattle of the surveyed farmers were significantly regarded as strong and healthier at 77 percent (49 of 64) (Figure 11). According to farmers, their herds are increasing. More than 50 percent acknowledged growth in their herds. The availability of grassland during the winter was one of the factors that is appreciated as beneficial to livestock (see photo on page 34). Only one farmer acknowledged an increase in their livestock but disagreed or does not recognize an improvement in his livestock health and or physical state as a result of the innovation.

FIGURE 11. LIVESTOCK BENEFITS



Distribution of cattle in the Umzimvubu region varied. The top two locations are those locations where MNP and its partners are fully operational. Mafube was presented by 16 farmers, who on average each owned 13 cattle. This is the second highest after Mzongwane, where each farmer owned 67 cattle. In Colana, 14 farmers owned 177 cattle, averaging 13 with a median of 9. The least presented location was Mpharane, where four farmers owned 5 cattle each on average. Although the Mzongwane numbers are heightened by the one farmer who owned 600 cattle, the location's totals without his consideration still are high. Without considering this farmer, the total is 269, the average is 22, and the median is 18 (Table 6).



Nguni cattle breed winter grazing

**TABLE 6. CATTLE OWNERSHIP
(N=65)**

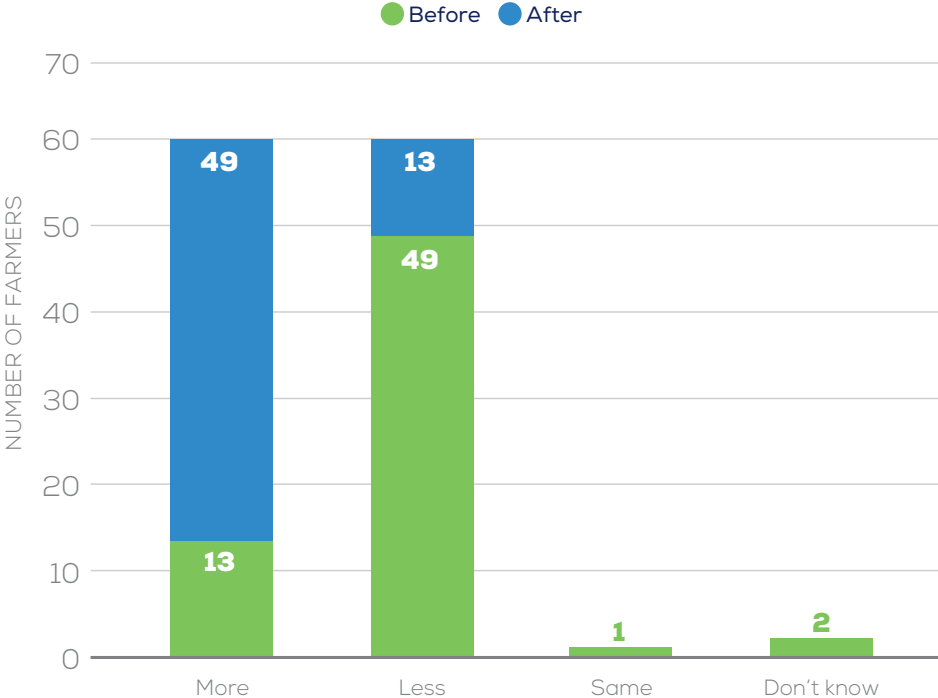
LOCATION	CATTLE OWNERSHIP					
	COLANA	LUYENGWENI	MAFUBE	MPHARANE	MZONGWANE	ONR
Average	12	11	13	5	67	12
Median	9	10	12	4	18	10
Sub total	177	64	203	21	869	130
Total	1,464					

Income benefits

Farmers' income from cattle is affected by several factors that are interlinked, such as price per kilo, physical appearance, and age, which affects meat quality. Farmers shared their experience on income from the innovation, before the innovation, and on prices generally. Before participating in the innovation, only 20 percent (13 of 65) of farmers stated they were making more income per head of cattle. On the other hand, 78 percent (49 of 65) believe they are making more money from selling their cattle through the innovation in comparison to selling to other avenues (mainly to a community member). Only 2 percent (one of 65) believe they are making the same amount through the innovation or other avenues. Finally, 4 percent (two of 65) are perplexed or have not justified the difference between the innovation and using other avenues (Figure 12). It should be noted that, despite their criticism of MNP's price/kilo, the alternatives to MNP would not lead to higher price/kilo. This is important as the criticism of the price is strongly articulated and the benefit of MNP here needs to be established. In addition, that appreciation of price is in comparison to instances where the farmers did not have a plan or guaranteed market to sell to, but could only hope that someone might come and buy. The presence of the innovation has given them hopes and expectations, which are exacerbated by predetermining prices for their cattle without considering (lack of knowledge) factors that influence price at a time.

There was one example of a farmer interviewed who was from a meeting (organized by one of the partners) that shed light on livestock pricing and breeds. The farmer was happy and hoped that many people would have attended because he now has a basic understanding of the innovation pricing.

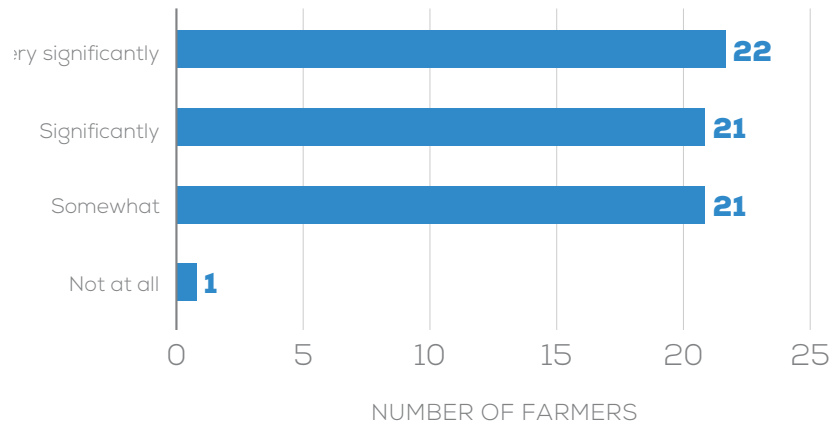
FIGURE 12. HOW MUCH WERE YOU MAKING BEFORE AND AFTER INNOVATION



During the interview, most farmers shared that they sell their cattle to community members for social events or unfortunate events, such as death. They said pricing is difficult because there is a sentimental element. Secondly, the price would be affected by the use of credit to help the person in need fulfill social rituals or respond to an emergency situation. In comparison to the innovation, the price agreed upon is paid in full and on time, with no sentimental consideration. Another factor is that more cattle can be sold at once, with the innovation thereby increasing income.

The role or value of income sourced from the innovation sale of cattle varied among farmer’s needs and state of life. Just over one-third (34 percent) (22 of 65) of farmers felt money from the innovation contributed very significantly to their income. Approximately one-third (32 percent) (21 of 65) felt the money contributed significantly to their income. Another 32 percent (21 of 65) felt the money does contribute to their income to some extent. Only 2 percent (one of 65) felt the money had no effect or contribution to income (Figure 13).

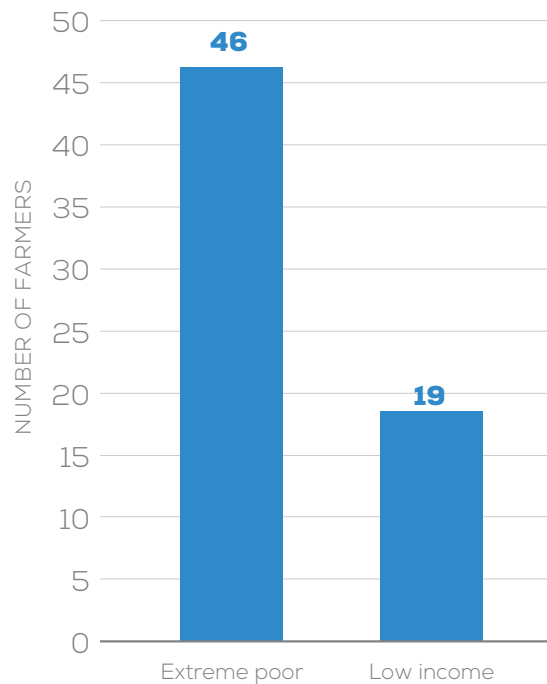
FIGURE 13. INNOVATION CONTRIBUTION TO INCOME



Poverty reduction benefits

The total of the respondents (N=65) in the survey is mostly people who are categorized in the lowest annual household bracket (USD 0.00 to 59,550) and generally experience extreme poverty. Of the respondents, 77 percent (46 out of 65) are extremely poor, and the majority depend on social grants from the government. About one-fourth (19 of 65) of the surveyed population is categorized as low-income (Figure 14). Those in this class are either retired individuals with few to no dependents or, to a lesser extent, the head of the family working for wage labor that comes more often and pays decent salaries.

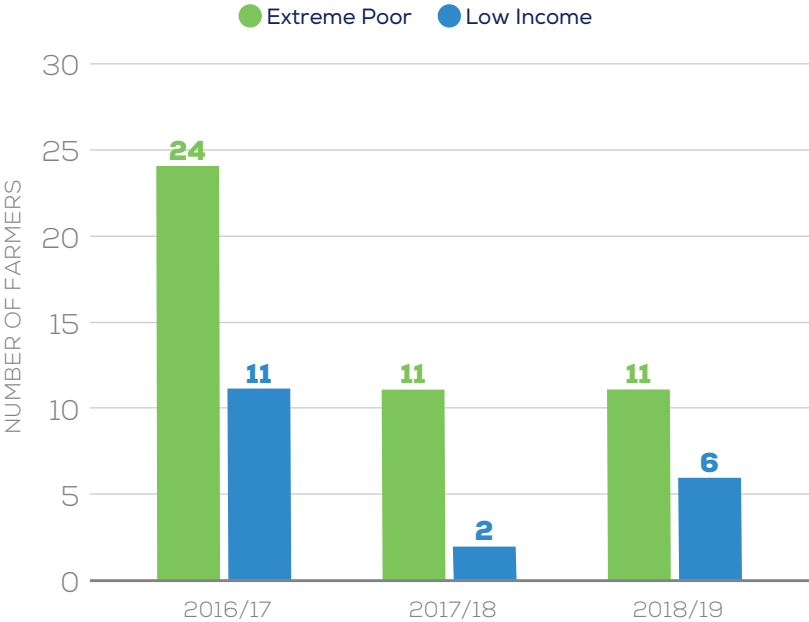
FIGURE 14. FARMERS POVERTY RANKINGS





The trend of pro-poor in the program continued or was clear from the first season (2016/17), whereby the majority (69 percent) (24 of 35) of respondents were extreme poor individuals as compared to the low-income group. The high uptake of the extreme poor compared to low-income continued in the 2017/18 and 2018/19 seasons, whereby 85 percent (11 of 13) and 68 percent (11 of 17) were achieved, respectively. Overall 70.77 percent (46 of 65) of the respondents are poorest (Figure 15).

FIGURE 15. FARMERS INTAKE BY POVERTY RANKING IN THREE YEARS



Sales

Farmers shared the amount of income sourced in their respective last MNP auctions. They shared income differently based on how best they recalled, with some farmers giving the total income sourced from last auctions or approximate/exact figure for every cattle sold. The total or average of the total of multiple cattle was divided and presented as an average for every farmer. In total, 58 farmers made ZAR 403,700 from their respective last auctions. The most common price or mode was ZAR 6,000, and the average price per cattle was ZAR 6,960. Using the overall farmers last sale average, the three year income was calculated and amounted to ZAR 1,600,800/USD 114,506.44 (at an exchange rate of USD 1 = ZAR 13.98 at the time) (Table 7).

TABLE 7. FARMERS CATTLE SALES

FARMERS LAST (AUCTION) CATTLE SALES (N=58)		
	ZAR	USD
Total	403,700	28,876.97
Average	6,960	497.85
Median	6,600	472.10
Mode	6,000	429.18
LONG TERM SALE INCOME		
TOTAL CATTLE SOLD IN THREE YEARS	THREE YEARS INCOME	
Total	1, 600, 800	114,506.44

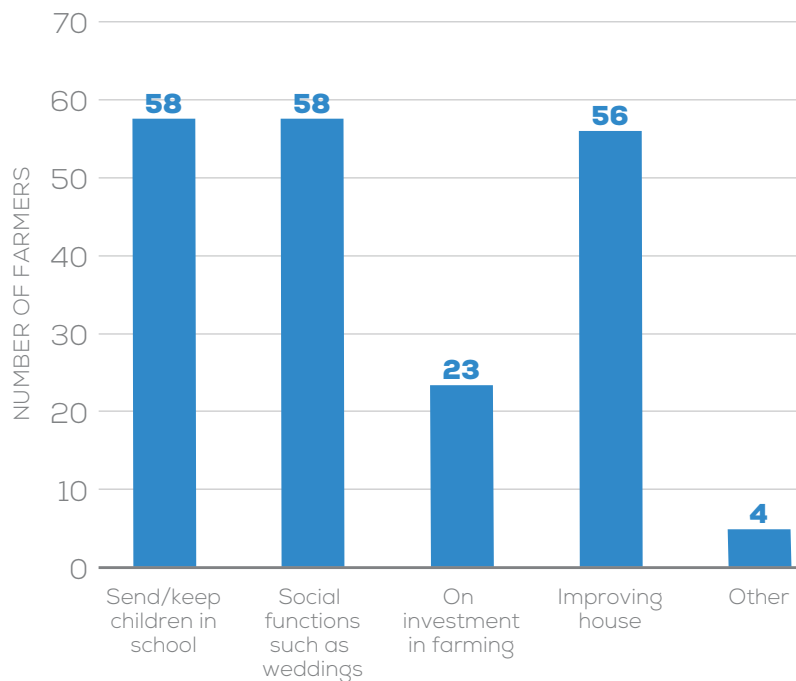


Expenses

(I) USAGE OF INCOME FROM INNOVATION

Farmers had multiple uses for income from the innovation. A total of 58 farmers used their money to send their children to school and for social functions. Additionally, 56 used their money to improve their house. Only 23 farmers stated using a portion of the money for farming purposes, and four said they use their money for other reasons, specifically savings (three) and buying medication (one) (Figure 16).

FIGURE 16. FARMERS INNOVATION INCOME USAGE



(II). OPERATIONAL EXPENSES

Cattle herding was the most common monthly expenditure for respondents. They spent a total of ZAR 25,200 per month on their herdsman and a total of ZAR 302,400 per annum. On average, a herdsman is paid ZAR 788 per month and ZAR 9,450 per annum. The lowest average is for the herdsman or cattle owners that own one to five cattle at ZAR 600 per month, and the highest average is from the sole farmer with more than 31 cattle at ZAR 1,500 (Table 8).

TABLE 8. FARMERS EXPENSES ON HERDSMAN

NO OF CATTLE	NO OF FARMERS	HERDSMEN MONTHLY SALARIES IN ZAR	HERDSMEN MONTHLY SALARIES IN USD	AVERAGES	NO OF MALE FARMERS
1-5	5	3,000	214.59	600	42.92
6-10	9	5,700	407.73	633	45.30
11-20	12	9,300	665.24	775	55.44
21-30	5	5,700	407.73	1140	81.55
>31	1	1,500	107.30	1500	107.30
Total	32	25,200	1,802.57	788	56.33
Annual expenditure		302,400	21,630.90	9,450	675.97

Over 50 percent of the cattle farmers herd their livestock or have a family member who is responsible for looking after the cattle. In the case of farmers with herdsmen, the monthly salary of herdsmen is complicated within the region. Most herdsmen are from outside the country (mainly Lesotho), and their salary is negotiated by treating or absorbing them as family members who are provided food and shelter. Some herdsmen herd more than one farmers' cattle through an agreement with a group of farmers in which they are paid less money by each farmer, and the final sum is less than or equivalent to what is paid to an individual herding few cattle of a single farmer.

The second largest expenditure was cattle feed, which is generally used in winter or during the dry seasons. In total, the seasonal annual feed cost ZAR 50,155 at an average cost of ZAR 5.08 per kilo and at ZAR 253.95 per 50 kilogram, which is commonly purchased according to the farmers. In total, only 40 farmers buy feed over 9 tons annually (Table 9).

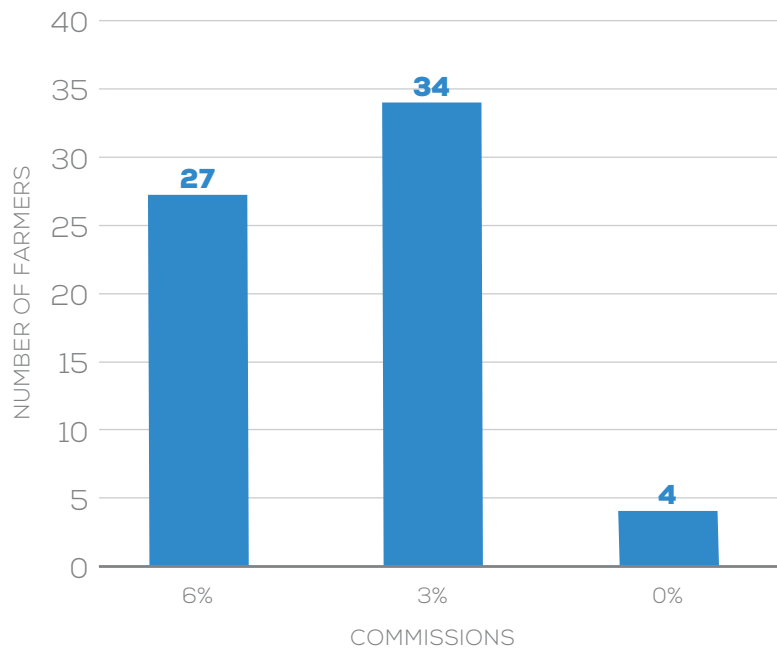
TABLE 9. ANNUAL WINTER/DRY SEASON FEED EXPENDITURE (N=40)

	ZAR	USD
TOTAL COST	50,155.00	3,610.87
AVERAGE COST PER KG	5.08	0.37
AVERAGE COST PER 50 KG BAG	253.95	18.28
MEDIAN	50.00	3.60

When asked whether the innovation was provided at a cost or free, 95 percent stated they were charged. However, the fee differed among farmers. Some were clear about the fees and the differences, while others were confused about the fee and the differences between farmers. Those who were clear about the fee said there is a six percent commission fee that is priced to 42 percent (27 of 65) for non-association members because they were not honoring sustainable grazing practices. Another fee was three percent that is charged to 52 percent (34 of 65) of association members who support the rotational grazing programs. Only 6 percent (four of 65) said they pay

nothing for the innovation (Figure 17). According to MNP, the commission fees are used to cover MNP operational costs and generate income for the innovation, which is further used to contribute to the community's activities for alien plant removal.

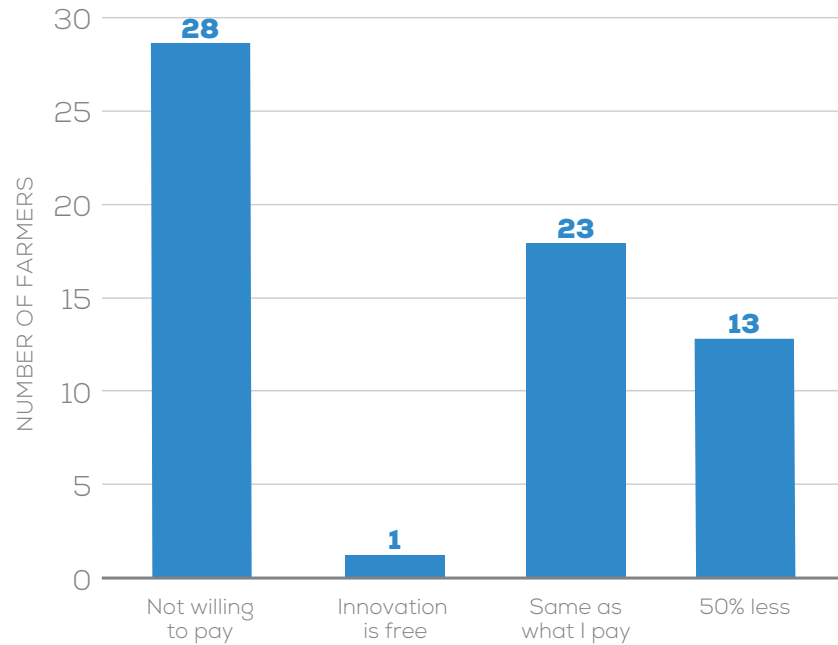
FIGURE 17. HOW MUCH ARE YOU PAYING FOR INNOVATION



Farmers were asked if they would like to pay for the innovation, and if so, how much would they pay? Of the farmers, 43 percent (28 of 65) were not willing to pay. Only 35 percent (23 of 65) of the paying farmers were happy with the fee. Among paying farmers, 20 percent (13 of 65) felt the price should be reduced by one-half (Figure 18).



FIGURE 18. HOW MUCH ARE YOU WILLING TO PAY FOR INNOVATION

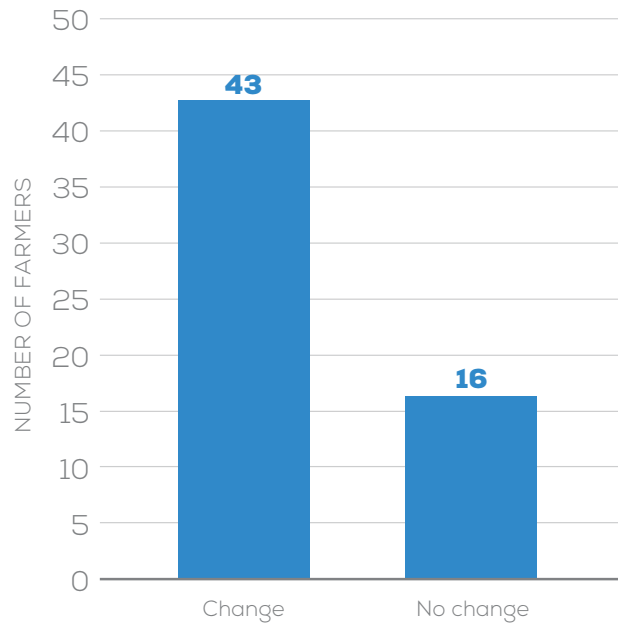


Change in farming practices due to climatic variability

In the past, rural farmers depended on rain to supply their grassland with water for growth. However, variability in the climate has made it difficult to depend on rain for sufficient grass growth because the normal average rainfall is reduced and sporadic. Farmers were asked if there are changes in their daily operations in managing their livestock, and, if so, how. A total of 73 percent (43 of 59) stated they are affected by climatic variability but their operations have not changed. Another 27 percent (16 of 59) shared the effect of the climate caused them to change their normal way of doing things (Figure 19).

Farmers changing their operational ways in managing their livestock had a combination of practices. The dominant practice was buying feed, followed by keeping the livestock deep in the mountains for longer periods than in the past and being more welcoming of rotational grazing from MNP and partners.

FIGURE 19. CHANGE IN LIVESTOCK OPERATIONS



Comparison between latest Innovator M&E and latest SWFF M&E

The MNP report to SWFF in year 1 showed that the farmers’ average income from cattle sale is USD 508.57. In year 2, MNP reported an increase with farmers averaging USD 1,254, which is more than double the previous year. For further comparison, averages were presented as cumulative averages for the two-year period. Using the MNP report, the two-year total was USD 1,762.56. On the contrary, the current report showed farmers with the exact or average figures obtained from their respective last sales from year one to year three. Using their last cattle sale income, farmers recorded an average of USD 497.85 for their different years of last cattle sale. The farmers’ three-year cumulative average was USD 1,974.30. This translated to a cumulative annual average income of USD 658.08 for 230 cattle sold (Table 10).

TABLE 10. INCOME COMPARISON BETWEEN REPORTS

MNP			
	TOTAL INCOME(USD)	TOTAL CATTLE SOLD	ANNUAL AVERAGE
Year 1	89,000	240	508.57
Year 2			1,254
2 YEARS CUMULATIVE			1,762,57
CUMULATIVE ANNUAL AVERAGE			881,285
SWFF-M&E			
TOTAL INCOME (USD)	TOTAL CATTLE SOLD	THREE YEAR CUMULATIVE	CUMULATIVE ANNUAL AVERAGE
11,4506.4	230	1,974.3	658.08

MNP results on gender differences are consistent with the findings of the current report, with more active males than females. Also, with regard to females, their intake is positively increasing year over year (Table 11).

TABLE 11. GENDER COMPARISON BETWEEN REPORTS

	YEAR 1 PERCENTAGE		YEAR 2 PERCENTAGE		YEAR 3 PERCENTAGE	
	MNP	SWFF-M&E	MNP	SWFF-M&E	MNP	SWFF-M&E
Men	79	77	74	77	70	65
Women	21	23	26	23	30	35

Farmers suggestions and requests

Many farmers were aware of the business nature of MNP and its partners and did not shy away from expressing their views or requests on how the innovation can serve them better individually and as a community (Table 12).

TABLE 12. FARMERS SUGGESTIONS AND REQUESTS

FARMERS SUGGESTIONS RELATING TO MNP
1. Reduce or cancel the commission fee
2. Help users understand the innovation pricing system
3. Bring in more buyers
4. Offer breeding bulls/calves for fully grown cattle
5. Buy small stocks, pigs, horses and wool
6. Inform people in advance to have more sellers on auction day/involve farmers on deciding auction dates
OTHER FARMER REQUESTS/RELATING TO MNP AND PARTNERS
1. Provide/help with cattle feed
2. Help with preventing livestock loss from theft
3. Help with veterinary services/medication
4. Help with planting crops, especially maize
5. Help with water for human consumption
6. Inform people in advance to have more sellers on auction day/involve farmers on deciding auction dates

DISCUSSION



During the survey, it was clear that the farmers had a lot to share about the innovation. They made it clear that they are happy with the innovation's presence within their reach but not satisfied with the pricing of cattle/meat per kilogram. For some, frustration was caused by a lack of knowledge. For others, it was the fact that they know they can sell their cattle elsewhere for a better price. Still, others felt someone's cattle are bought for a higher price than theirs, but based on physical appearance and age, they felt theirs can sell at a better price. The lack of knowledge in determining the value of their cattle was another challenge that farmers had, which led them to believe their system of pricing was outdone by the innovation scale system that "robs" them of the predetermined potential selling price of their cattle.

Accepting the grazing systems from MNP and its partners was easy for the individuals that live with people who are close to personnel of either MNP or its partners (such as ecorangers), but it was difficult for farmers who are not. Generally, farmers argued that rotational grazing would work with camps or having demarcated plots that are protected by neutral individuals. Some farmers felt ecorangers made it difficult for their cattle to recover in the summer and autumn because of limited grazing space. They also avoided forcing them to move their cattle to deep areas in the mountains close to the border of Lesotho because their cattle are exposed to theft in those areas.

The commission fee was another issue farmers noted as in need of change. Most of the farmers referred to the commission fee as a tax. Association members are priced a commission fee of three percent, and non-members are charged six percent because of non-compliance. Some association members felt that the commission fee is not fair because they comply with the grazing systems or rotational grazing, so a commission fee shouldn't be charged to their cattle's price after the final bidding price. In some instances, farmers shared they will continue using the innovation but will consider selling their cattle elsewhere because the commission reduces their income. A few farmers also shared they were never told of the commission fee until they received less money in the bank. This is a result of not paying close attention to the receipt they receive that details the sale.

Another issue of interest was confusion on how the innovation can be improved and work better for the communities. When asked this question, farmers would ask what they can do or state that they needed a price increase. Farmers felt that the role of MNP is to buy their cattle and there's nothing binding the innovation to contribute to their community in any way. The dissociation of MNP from its partners was clear among farmers. Although some farmers are clear on the MNP vision and approach, the confusion could still be due to a lack of communication from MNP and its partners about the importance of the linkage of all organizations. According to MNP, farmers' meeting attendance is poor, which could be one factor contributing to the lack of effective communication



Usage/Availability

MNP's establishment as a profit organization was successful from the farmers' perception. The farmers felt the innovation is fair by giving them the freedom to accept pricing of choice. From the surveyed group of 65, only three farmers were dissatisfied and felt they would not continue with the innovation. The reason behind their decision to quit is because of poor pricing. Of the three dissatisfied farmers, two were female and one was male. Only one of the females was categorized below the poverty line or extreme poverty, and the other two were categorized under the low income bracket. In addition, two of the farmers are based in Colana where the main support structure is MNP and there have not been intensive conservation interventions from IAs. Although TKT is involved, it has not yet impacted change that farmers expect or other sites under different IAs are experiencing.

Farmers also were happy with the ease of uptake and stated that the innovation informed farmers of possible auctions and requested farmers, specifically non-association members, to register. The innovation's availability and accessibility were not limited to certain community members, and all farmers had access if their location is in the agreement with the innovation formally or informally. Farmers also were happy with the acceptance of all cattle regardless of age and physical appearance. There was one instance where one farmer felt that she was discriminated upon by being expelled from selling with MNP by the local association for reasons she doesn't know. When the interviewer pressed for answers, there seemed to be a miscommunication about compliance with the association rules and lack of willingness by the farmer to participate in meetings.

Livestock yield/survival

MNP helped farmers through its partners to realize the existing potential of sustainable grazing for the health and physical condition of their cattle. Farmers made it clear their livestock is struggling in winter and during long dry seasons. However, the little effort and minimal changes were significantly acknowledged, with over 50 percent of farmers acknowledging the benefit of grass cover in their locations. Farmers accepted that this contributed to the better conditions of their livestock. A farmer also added there has not been a loss of cattle in the last five years because of drought and attributed this to the grazing program.

Some farmers (four) were happy with the help of medication or veterinary services. A few went on to justify the impact of such services with the decline in mortality and general difficulties they experienced with their livestock in the winter. However, some farmers felt there isn't a clear impact from the innovation on their livestock's health and physical appearance because there has been a clear variation in the past and variability in the climate currently. Farmers felt there are clear changes and transitions in a year with favorable weather, while in poor weather conditions, they struggle as in the past or must buy feed to sustain their livestock whereas MNP and its partners are present.



Changes in income

MNP has contributed significantly to improving the farmers income. Farmers acknowledged the increase in income from selling their cattle to MNP. Their reasons varied from better price and low commission fee to guaranteed cash purchase. Unlike selling their cattle through credit to people who are desperate and needy, farmers feel they make sensible business decisions over sentimental ones. Another interesting factor they shared was the presence of the auction in their communities. Farmers value the freedom of having to refuse bidding prices and still have no extra costs to incur because the auction is local and their decision making is not affected by the fear of losing money from labor costs for unguaranteed sales.

About one-third of farmers felt the money they get from MNP was somewhat important to their income and cited price per kilogram as the reason that shadows the value of the money. Also, the only farmer who did not see any difference in their income was a result of low price per kilogram. This farmer's reason for selling was that the cow was troublesome in the community. The lack of involvement by the farmer on her cattle might have contributed to the cattle's low mass.

With regard to change on inputs cost, farmers shared there is not much difference in the money they put on farming investments. Most do not spend money on farming inputs because there is no money and when they get money from sales it is for pre-determined purposes. Additionally, the money they earn or sourced from their savings is mostly for paying the herdsman. However, they did acknowledge that in a good year or with good sales they do buy medicine and feed. Feed was generally bought for winter or during the dry season, and the quantity was affected by the farmer's financials and, to a lesser extent, by the longevity of the dry season. A total of 40 farmers spend an annual total of USD 3,610.87 from mostly their savings and, to a lesser extent, from the innovation sales profits. Among the 40 farmers, 63 percent (25 of 40) depended solely on their own savings. However, the 38 percent (15 of 40) of farmers that allocate money for feed and medication from their cattle sales income spend USD 3,426,32. Most farmers did not know the medication they bought, although a few farmers mentioned using Epsom salt to treat external abscesses, drugs such as acaricide for treatment against ticks on the skin of cattle, and ivermectin for small stock.

Impact on poverty

Poverty reduction was another factor the innovator accommodated significantly. Of the respondents, 71 percent (46 of 65) are extreme poor individuals, and most are pensioners or depend on a pensioner and government grants. The money from the innovation was mostly used for basic needs, such as contributing to the home, sending or keeping children to or in school, and social functions. Among money spent on social functions, most was to celebrate the return of young males from the traditional circumcision practice. The money further allowed the 15 poor/low-income farmers to invest in their farming inputs, specifically for feed and medication.

Benefits of innovation on community

MNP and its partners are well appreciated in the communities in which they work. The work they put into helping with livestock is valued significantly. The jobs they create for ecorangers and people who remove alien plants are all appreciated and contribute significantly to the livelihoods of community members. During the interviews, contracts from MNP and its partners were on hold or lapsed due to speculated reasons for off-season and financials. Some interviewees asked about the potential return or continuation of contracts with MNP and its partners for the community members who participated. In addition, some farmers shared that the farmers are happy with the proposals of the organizations to involve the local youth because they have a negative perception of agriculture.

Other benefits

Communal farming allows for access to land and water sources by farmers and the public without limitations. This benefited farmers with free access to water and eliminated the costs of fencing and watering equipment. As much as the innovation found the practice in place, its value was deteriorating. Its involvement revives it, and farmers are valuing it. However, it should be stated that farmers are fencing their plots or portions of land owned for maize farming.

Comparison between latest Innovator M&E and latest SWFF M&E

The existing variation between latest innovator M&E and latest SWFF M&E is the average income per farmer from year 1 to the recent year's report. According to the results of the latest innovator M&E and latest SWFF M&E, there is a significant difference at USD 881,285 and USD 658.08, respectively. This can be justified because farmers gave approximate figures for the current study and the comparisons are limited to cumulative income.



CONCLUSION



Over the years, the practice of communal farming has made it possible for farmers to participate in numbers and with freedom in livestock farming for food security reasons. With climatic variability, this practice has been questioned and eliminated in developed countries, such as England and Germany. Although the practice is threatened in South Africa, MNP and its partners have made it relevant and valuable in the Umzimvubu area of the Eastern Cape. Farmers increasingly are participating in MNP auctions. The majority of the participants are pensioners who are breadwinners. Just over 70 percent are male; however, the accommodation of females is promoted by male participants, and their intake is positively increasing. Most of the female customers are widows and wives whose husbands are away for work.

Since most of the overall customers are pensioners and extreme poor or living on a low income, the money they earn from the innovation is significant. The money sourced from the innovation mostly is used for family needs, thereby reducing poverty and making the innovation a very essential contributor to the farmers' livelihoods. Because of the innovation, farmers are able to receive money on time and in a lump sum, thereby making a huge difference in their livelihood. Interestingly, farmers noted the increase in income from selling their cattle through MNP, but farmers still believe their cattle are worth more than what MNP offers, with the most common suggestion being an increase in price per kilogram.

Due to the scattered and isolated layout of rural areas where livestock farming is practiced in communal land, market access is difficult for farmers. MNP hosts auctions in farmers' locations, making it easier and affordable for farmers to participate, especially female farmers. The involvement of MNP and its partners in the different participating communities makes it practical to engage farmers on matters relating to sustainable grazing. Empowerment of communities also is made possible through job creation and education.

Communal farming does not require a lot of farming inputs in contrast to commercial farming. This is evident by the elimination of the costs of fencing and watering and few to no complaints from farmers over such important inputs in farming. One of the few requests related to fencing was cattle loss, which is one of the challenges that was noted and is very concerning, since farmers associated it with distant grazing areas. This forces farmers to overgraze the safe grazing spaces as a way of protecting their cattle.

MNP has achieved a lot as an enterprise in reaching its goals and targets of improving farmers' livelihood. Also, MNP and its partners are raising awareness and causing local farmers to reconsider their perceptions. Management practices to ensure long term sustainable grazing and access to water throughout the year is a daunting task that requires sophisticated and dynamic practical models that center farmers/livestock and the community as the main role players. Nevertheless, the integration of MNP and its partners had a positive impact, but more groundwork is needed to help farmers better understand long-term sustainable grazing and basic livestock value in a practical sense. Also, work is needed to align the way of life in the villages with the vision of MNP and its partners for farmers to embrace their practices.

ANNEX I



FARMER INFORMATION

NAME _____

AGE _____

DATE _____ TIME _____

GROUP INTERVIEW? Yes No

GROUP INTERVIEW NOTES

HOW MANY FAMILY MEMBERS LIVE WITH YOU? _____

GENDER Male Female

WHAT IS YOUR PRIMARY OCCUPATION?

Farming

Wage Labor

Seasonal Migrant Labor

Small Enterprise

Other: _____

DO YOU HAVE ANOTHER OCCUPATION?

Farming

Wage Labor

Seasonal Migrant Labor

Small Enterprise

Other: _____

SIZE OF FARM (ACRES) _____

NAME OF VILLAGE _____

HOW MUCH LAND DO YOU OWN? _____

HOW LARGE IS YOUR FARM/PLOT?

Large

Medium

Small

Very Small

HOW MUCH IS LAND RENT? _____

OTHER LAND NOTES

HOW LONG HAVE YOU BEEN USING MEAT NATURALLY? _____

DID YOU PARTICIPATE IN AGRICULTURAL ACTIVITIES THIS YEAR? Yes No

HOW HAVE YOU PARTICIPATED IN MNP? (TICK ALL THAT APPLY)

- I HAVE SOLD CATTLE AT A MNP AUCTION
- I HAVE IMPROVED GRASS COVER AND INCREASED WATER RETENTION

HOW MANY CATTLE DO YOU OWN? _____

WHAT IS THE WATER SOURCE FOR YOUR LIVESTOCK? _____

WHAT IS YOUR METHOD OF IRRIGATION FOR FEED? _____

DOES YOUR COMMUNITY FACE WATER SCARCITY? Yes No

DO YOU GROW MAIZE OR VEGETABLES? _____

FARM INFORMATION

HOW MUCH HAS YOUR WATER USAGE CHANGED SINCE USING MEAT NATURALLY, IF AT ALL?

USING MEAT NATURALLY HAS YOUR ACCESS TO WATER:

- Had no change
- Improved
- Fundamentally improved (Improved a lot)
- Other: _____

USING MEAT NATURALLY HAVE YOU:

- Had no change in water access for your cattle
- Improved water access for your cattle

HOW MUCH OF EACH OF THE FOLLOWING INPUTS DID YOU USE BEFORE MEAT NATURALLY?

FEED _____ (KG)
WATER _____ (L)
FENCING, FUEL _____ (L)
LABOR _____ (DAYS)
OTHER _____

HOW MUCH DID YOU SPEND ON EACH OF THE FOLLOWING INPUTS BEFORE MEAT NATURALLY?

FEED _____ (KG)
WATER _____ (L)
FENCING, FUEL _____ (L)
LABOR _____ (DAYS)
OTHER _____

HOW MUCH OF EACH OF THE FOLLOWING INPUTS DO YOU USE AFTER MEAT NATURALLY?

FEED _____ (KG)
WATER _____ (L)
FENCING, FUEL _____ (L)
LABOR _____ (DAYS)
OTHER _____

HOW MUCH DID YOU SPEND ON THE FOLLOWING INPUTS AFTER MEAT NATURALLY?

FEED _____ (KG)
WATER _____ (L)
FENCING, FUEL _____ (L)
LABOR _____ (DAYS)
OTHER _____

HOW MUCH DID YOU SPEND ON EQUIPMENT BEFORE AND AFTER MEAT NATURALLY? _____

HOW MUCH DID YOU SPEND ON TRANSPORT AND STORAGE BEFORE AND AFTER MEAT NATURALLY? _____

OTHER FARM NOTES (OPTIONAL).

INCOME AND EXPENDITURES

WHAT IS YOUR ANNUAL HOUSEHOLD INCOME? _____

HOW MUCH INCOME DID YOU MAKE BEFORE MEAT NATURALLY? _____

AFTER MEAT NATURALLY? _____

HAS MEAT NATURALLY IMPROVED YOUR FAMILY INCOME? _____

WHAT PERCENTAGE OF YOUR INCOME DO YOU GET FROM NON-FARM SOURCES? _____

HOW MUCH PRODUCE DID YOU SELL FOR EACH OF YOUR CROPS IN THE LAST SEASON AND THE LAST YEAR? _____

WHAT IS THE PRICE PER KILO YOU RECEIVED FOR EACH OF YOUR CROPS FOR THE LAST SEASON?

USING MEAT NATURALLY HAS YOUR ACCESS TO CREDIT:

- Not improved
- Improved
- Improved and have been able to repay over a short period

HOW DO YOU CURRENTLY FINANCE AGRICULTURAL ACTIVITIES?

- Own savings
- Credit and savings scheme
- Other credit

HOW MUCH DO YOU PAY FOR MEAT NATURALLY? _____

HOW MUCH ARE YOU WILLING TO PAY FOR MEAT NATURALLY?

- Nothing
- MEAT NATURALLY is free
- The same as what I pay now
- 50% less
- 50% more
- Other: _____

HOW HAVE YOU SPENT YOUR NEW INCOME?

- N/A (if no new income)
- Send children to school or keep children in school
- Social functions (like weddings)
- Investment in farming
- Improving house
- Other: _____

OTHER INCOME NOTES (OPTIONAL)

PERCEPTIONS OF MEAT NATURALLY

WILL YOU USE MEAT NATURALLY IN THE FUTURE (5 TO 10 YEARS)? Yes No

WHY? _____

HOW, IF AT ALL, HAVE YOU CHANGED YOUR FARMING PRACTICES DUE TO MEAT NATURALLY?

- No change
- Introduced new crops
- Changed irrigation system
- Reduced water usage
- It helps me decide when to plant
- It helps me decide which crops to plant

HAVE YOU FACED ANY DIFFICULTIES OR PROBLEMS USING MEAT NATURALLY? Yes No

HOW CAN MEAT NATURALLY BE IMPROVED? _____

HOW DID YOU HEAR ABOUT MEAT NATURALLY?

- Wealthy farmer
- Neighbor
- Innovation personnel
- Extension worker
- Other: _____

WHAT FACTORS INFLUENCED YOU TO TRY MEAT NATURALLY?

- Demonstration from neighbor's farm
- Innovation is free from extension services
- No alternative water source
- Other: _____

DO YOU SHARE YOUR KNOWLEDGE SKILLS FROM MEAT NATURALLY WITH OTHERS? Yes No
IF SO, HOW? _____

WHAT DO YOU FEEL ARE THE BENEFITS OF MEAT NATURALLY? _____

HAVE YOU BENEFITED FROM HERDING AND/OR AUCTION? Yes No

IF YES, ARE YOUR CATTLE HEALTHIER AND/OR STRONGER? _____

IF YES, HAVE YOU RECEIVED A GOOD PRICE FOR YOUR CATTLE? _____

IF YES, HAVE YOU INCREASED YOUR HERD OF CATTLE? _____

HAVE YOU HEARD ABOUT CLIMATIC VARIATION? HAVE CHANGES IN RAINFALL OR TEMPERATURE AFFECTED YOUR FARMING PRACTICES OR CROP YIELDS COMPARED TO YOUR HISTORICAL RAINY/DRY SEASON PERIODS? Yes No

PLEASE SPECIFY HOW. _____

HOW HAS MEAT NATURALLY HELPED YOU? PLEASE RANK THE TOP 3 AND EXPLAIN POSITIVES/ NEGATIVES.

- Makes water reusable _____
- Helps women farmers as well as men _____
- They made a special effort to include women farmers _____
- Helps in producing more of our most important crop _____
- Increases my yield through timely forecasts _____
- Helps by lowering cost of inputs _____
- Improves health and strength of livestock _____
- Helps reduce labor _____
- Reduces crop wastage _____
- Helps me decide when to plant _____
- Helps me decide which crops to plant _____
- Other: _____

WOULD YOU RECOMMEND MEAT NATURALLY?

- No
- Yes
- Yes, would strongly recommend

ARE THERE NEGATIVE IMPACTS FROM MEAT NATURALLY IN THE COMMUNITY? Yes No

PLEASE EXPLAIN IF YES. _____

IF THERE HAVE BEEN ANY NEGATIVE IMPACTS, HAVE EFFORTS BEEN MADE TO RESOLVE THEM?

- Yes No

EXPLAIN. _____

OTHER

INCOME/POVERTY NOTES

GENDER OBSERVATIONS

QUESTIONS/REQUESTS

OTHER NOTES

SECURING
WATER
FOR FOOD:
A GRAND CHALLENGE
FOR DEVELOPMENT

Securing Water for Food has sourced and invested in a portfolio of innovative solutions that aim to help farmers use water more efficiently and effectively, improve water storage for lean times, and remove salt from water to make more food. Our cohort of innovators are helping people in 35 low-resource countries with tools they need to produce more food with less water.

To learn more about Securing Water for Food,
visit www.securingswaterforfood.org.