

# Maziwa Project Internal Evaluation Report

## August 2021



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## EXECUTIVE SUMMARY

Maziwa Project was 42 months project (from 1st April 2018 to 30th September 2021) project funded by the Italian Development Cooperation and Development (AICS) to empower Dairy Cooperatives in Meru County. The project was implemented by AVSI as the lead in partnership with Meru County Government, IPSIA, Don Bosco Association-Mutuati, EDUs, and Municipality of Padua.

The project was able to build resilient communities in Meru County and this is evident through the economic stability created among the farmers. The achievements were captured through a project end line assessment of the five cooperatives supported by the projects plus a survey that targeted 285 randomly selected farmers from the cooperatives; both quantitative and qualitative data were collected using closed and open questions to assess the impact of the Maziwa project.

Some of the key achievements realized include (for details and further info, see the full report):

- i. **COOPERATIVE GROWTH AND DEVELOPMENT:** Cooperatives witnessed significant change, for instance, **active members had quadrupled** (467% increase from 209 to 1,185 members); the number of litres of **milk handled in a day had also quadrupled** (from 260 litres per day to 1174.4 litres per day) and **milk wastage reduced by 61%**. The installation of milk handling, storage, and processing equipment helped to prolong the milk life and facilitated milk value addition that contributed greatly to creating an environment for the results mentioned above.
- ii. **ECONOMIC RESULTS FOR FARMERS:** **98% increased income** (from Ksh.17,427 to Ksh. 34,505 per month) among dairy farmers was mainly attributed to the improved capacity of farmers to better manage their cattle which also resulted in a **46% increment in milk produced**. It is also good to note that farmers did not only engage in the sale of milk alone but were also involved in the sale of dairy-related products like dairy animals, manure and animal feed. In addition to this, enhanced cooperative structural and strategic management resulted in 21% improvement in milk prices given to farmers; with the high returns in the dairy business, **45% of the farmers started to invest more in their business**. Greater accessibility to credit reported by 41% of the farmers played a crucial role in creating an enabling environment for the farmers to expand their businesses. The overall effect was **financial stability registered for 54%** of the farmers.





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- iii. **SOCIAL RESULTS FOR FARMERS:** The livelihood improvements had a direct positive effect on the families of these farmers too. For instance, 51% of farmers reported having improved access to education. More in detail, **55% of farmers reported taking children to better schools** since farmers can now afford it, thus enhancing access to quality education; there was a 29% of children that were newly enrolled in school; and 14% of youth that we're able to transition to vocational training schools, colleges or university thus giving a global contribution to SDG8 that looks into decent work and economic growth by reducing the proportion of youth not in training. Additionally, **98% of the farmers were reported to be food secure**. The assessment showed that 74% of the farmers were able to access at least 3 meals in a day, in addition to this, farmers reported being able to afford better food as compared to before while other farmers added that they could now afford even more expensive food and even had extra food that they could share with their families and neighbors. Health situation among farmers was also enhanced with **58% reporting to have improved health status**. This could be attributed to several things like improved food security, and a 25% improvement in milk consumption among beneficiaries. Additionally, with the stable financial environment created, **54% of the farmers had a medical cover i.e., national health insurance fund (NHIF)** to caution them when the farmer or any member of the family got sick. Last but not least, 56% of respondents from Arithi cooperative reported having gained **more confidence in themselves** – 81% attributed the improved control of their life to the project.
- iv. **COMMUNITY IMPACT:** The Maziwa Project left a remarkable mark to the communities in the 5 regions of Meru County where it had its operations that was affirmed by 81% of respondents. For instance, there was a **47% increase of farmers buying more farm inputs like fodders from community retailers** thus impacting positively the economy of that region while 40% of the respondents said that the **community are learning** from the trend and example the they are setting after being part of the Maziwa project; just to add to this, 75% of respondents from Ngusishi, Mikinduri and Meru North cooperative mentioned that they had **acquired knowledge transferable to other people, thus build sustainability** in the dairy in the region (**over 50%** of farmers were already training other farmers on acquired skills).
- A strong footprint on **influencing climate change was also realised with the installation of 11 biogas systems in all the 5 cooperatives and two photovoltaic systems** in Ariithi and Ngusishi cooperative. With regard to AVSI reputation in the community, the level of satisfaction of beneficiaries was remarkable 34% being totally satisfied and 40% being very satisfied.



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## 1. INTRODUCTION

### Project Background

The dairy value chain is a major area in development with a huge potential that significantly contribute towards the economic growth of Kenya. In 2017, AVSI was awarded funds from the Italian Agency for Development Cooperation (AICs) to implement a three-year dairy project titled 'Maziwa Project'.

The project had 6 implementing partners namely:

- a) AVSI Foundation- Lead implementing organization
- b) IPSIA (Institute for Peace Development and Innovation)
- c) Meru County Government
- d) Don Bosco Association-Mutuati
- e) EDUS (Italy)
- f) Municipality of Padua (Italy)

The Objectives of the project were:

- To increase milk production and improve the quality
- To improve the storage capacity and transformation of milk and its derivatives.
- To improve management, saving, marketing and trade skills of cooperatives
- To strengthen the coordination and networking system of producers and cooperatives
- To increase use and awareness on the use of renewable energy production systems

Target Beneficiaries included 5 dairy cooperatives, 1,800 small scale dairy farmers, 423 board members of other dairy cooperatives in Meru County, 165 staff Meru County Gov. and veterinary. The project to date has reached cumulatively at least 7,000 farmers, 493 board members from over 74 dairy cooperatives in Meru County, 284 Meru County Staff, over 6,730 children in 10 schools and structural improvement to 5 cooperatives through procurement of land, construction and equipping of these cooperatives with milk handling, storage and processing equipment, furniture and ICT tools.

## 2. METHODOLOGY

In addition to, and in order to integrate an external evaluation, AVSI conducted a final internal evaluation to the Maziwa Project with the objective of describing and measuring the impact the project had to its beneficiary and the community in the targeted areas of Meru County, including both expected and unexpected results. The evaluation activity followed the following steps;

1. Formulation of the evaluation tool.
2. A two-day training conducted to enumerators on 17<sup>th</sup> & 18<sup>th</sup> August 2021. The first day focused on the data collection questionnaire and the use of kobo. The training involved discussions on ways to approach questions borrowing lessons from experience garnered during the baseline and mid-term assessment while day two was a field exercise to farmers.
3. Data collection exercise took a total of 10 days. The enumerators adopted interview and observation method to acquire information needed from farmers. The data was collected using Kobo Collect.
4. Analysis was done using Ms Excel and tag crowd and findings presented in Ms Word.

A total of 285 farmers were randomly selected for the evaluation exercise. The farmers interviewed were selected using a random number generator (simple random selection). Farmers represented per cooperative is as shown below. Results achieved by farmers will be displayed as per cooperative to give a picture of how the project was received by different regions in Meru County.

| Cooperative        | Female     | Male      | Grand Total |
|--------------------|------------|-----------|-------------|
| Arithi             | 49         | 7         | 56          |
| Meru North         | 38         | 21        | 59          |
| Mikinduri          | 33         | 19        | 52          |
| Ngusishi           | 40         | 15        | 55          |
| Nyaki Kiburine     | 40         | 23        | 63          |
| <b>Grand Total</b> | <b>200</b> | <b>85</b> | <b>285</b>  |

Figure 1: Number of farmers assessed per cooperative

58% of the farmers were 46+ years followed by a 31% who were 35-45 years. It is also good to note the 11% that were youths meaning the project was able to tap into this group and have meaningful impact in their lives as it will be elaborated later in this report.





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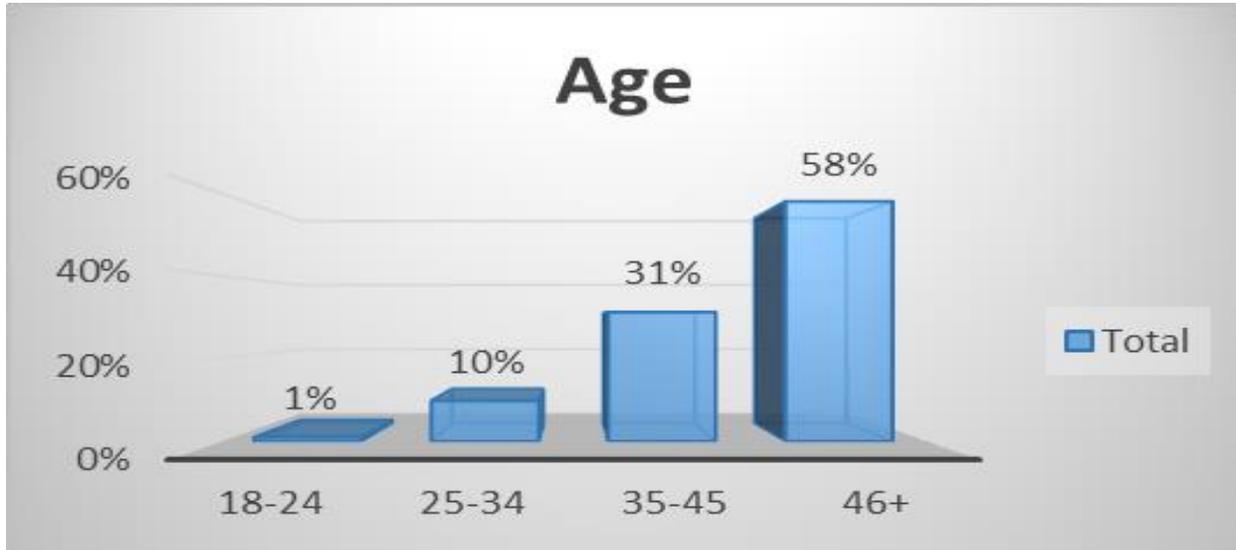


Figure 2:Age classification

The evaluation did not stop at the farmer's level alone but was also extended to all the five cooperatives that were direct recipients of the project. The cooperative evaluation exercise took a total of two days. In Meru North, Ngusishi and Ariithi cooperatives, the Secretary was interviewed while Mikinduri and Nyaki Kiburiine cooperatives had the Chairperson being interviewed.

### 3. RESULTS ACCOMPLISHED BY FARMERS

#### Project Activities

The project had tailor made activities for farmers that responded to gaps in dairy value chain. Trainings provided included: pasture management and establishment; improving of genetic lines and A.I (breeding); hygiene and animal health; financial literacy and business skills; savings and loaning groups; fodder preservation - silage and hay making; participation in agricultural show; and renewable energy campaigns. Out of the activities offered, the hygiene and animal health training were reported to be adopted by most respondents at 74% while fodder preservation and pasture management tied at 64%. The adoption of renewable energy was least up taken by the respondents with only 10% adopting the use of renewable energy.

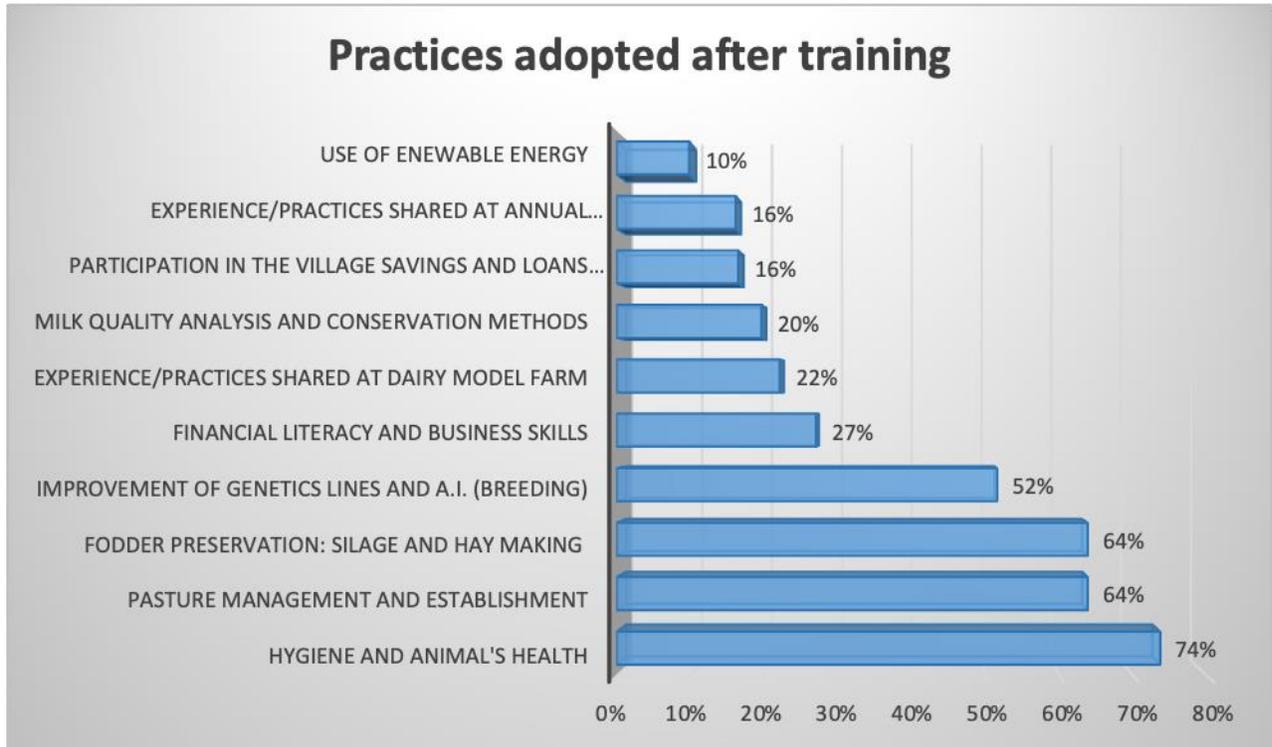


Figure 3: Practices adopted after training

Improvement of genetic lines and A.I (breeding) and hygiene and animal health training proved to be most impactful at 25% while fodder preservation; silage and hay making training followed at 14%.





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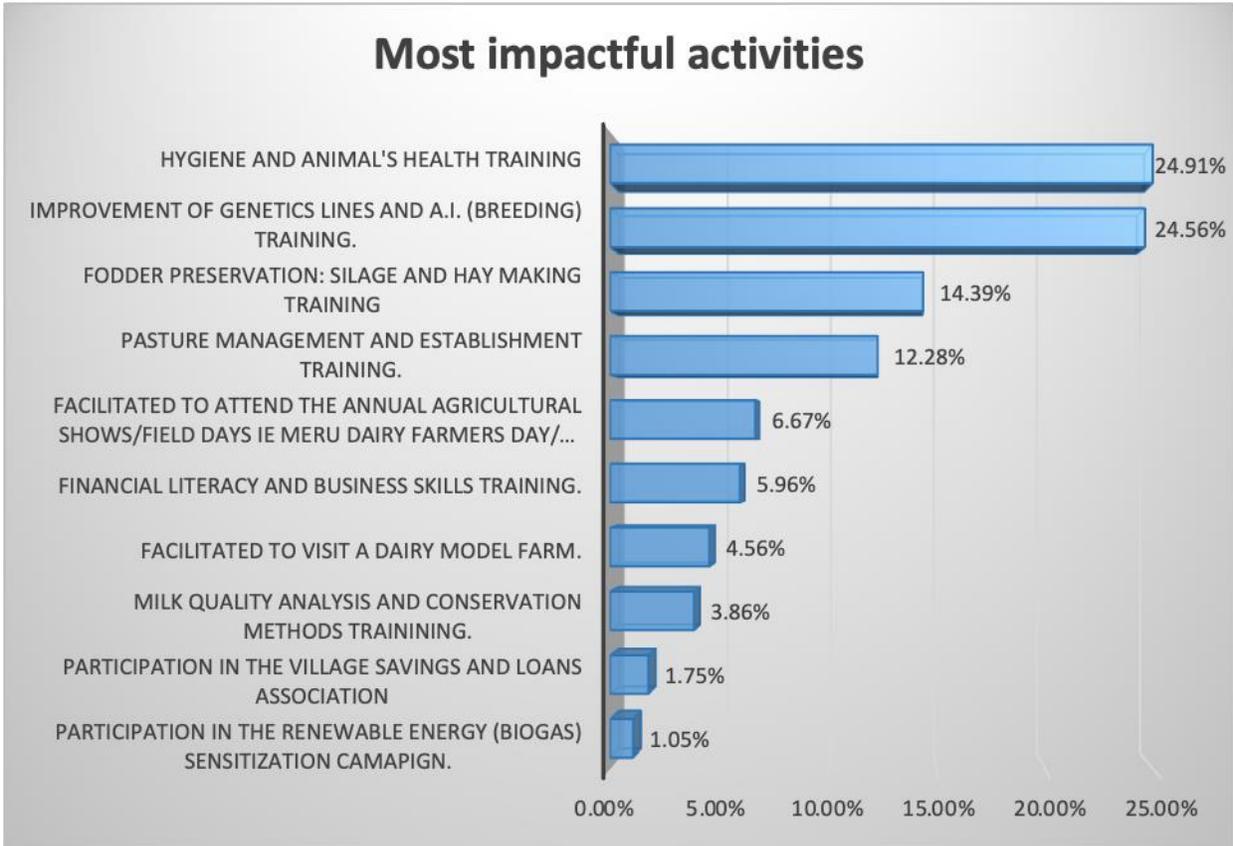


Figure 4: Activities that were most impactful

When asked the question “Why those particular activities were the most impactful”, the respondent referred to the increase in milk production which in their experience resulted from the improvement in breeds and the acquired knowledge on different types of feeds and animal hygiene.



Figure 5: Words that describe why these activities were impactful



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### Animal breed

There was a 47% increment in animals owned among respondents assessed. Ngusishi cooperative had respondents with the most drastic change at 135% and respondents from Mikinduri cooperative experiencing the smallest change of 1%. Majority of the respondents appeared to have a liking for the Friesian which had increased by 9% while Guernsey and jersey had a slight change of 1% and 2% respectively. These breeds are readily available in the market and also thrive in in this part of the country. This change had a direct influence in milk production with Ngusishi taking the lead as it will be illustrated later on in this report.

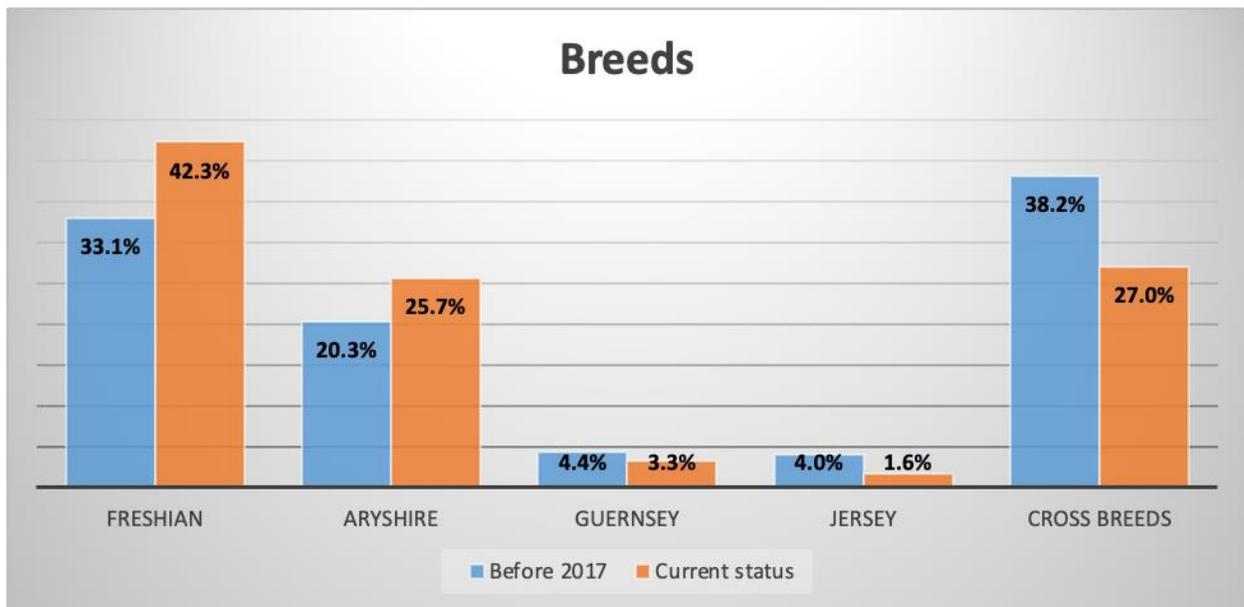


Figure 6: Animal Breeds

| Value                                    | Arithi | Meru North | Mikinduri | Ngusishi | Nyaki Kiburine | Grand Total |
|------------------------------------------|--------|------------|-----------|----------|----------------|-------------|
| % Change in number of cows per household | 8%     | 40%        | 1%        | 135%     | 67%            | 47%         |

Figure 7: Change in dairy animal ownership among farmers

### Farm inputs

Overall, 23% of the respondent report having better access to farm inputs as compared to when the project started. This change has been influenced greatly by their affiliation to the cooperatives that makes it easy to get farm inputs, financial improvement among respondents who now have money to buy farm inputs while a few farmers said that they have more knowledge on farm inputs meaning they are in a position to make informed decisions when procuring or processing farm inputs. Meru north farmers appeared to be benefiting the most due to their affiliation to the cooperative while Nyaki Kiburine had most of their farmers capable of purchasing farm inputs.



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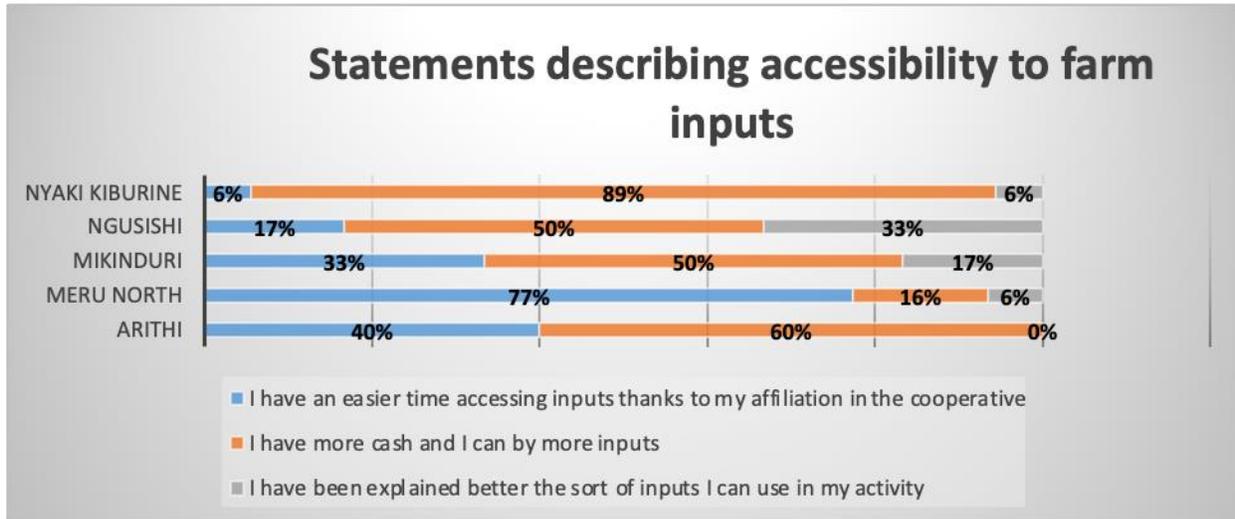


Figure 8: Statement that describe better accessibility to farm inputs

95% of beneficiaries that had better access to inputs ascribed this milestone to the project. The project was able to do this through trainings; one is training to cooperative management that ignited the need to offer farm inputs as an additional service to cooperative members; the different trainings to cooperatives farmers which equipped them with skills for preparing farm inputs and at the same time offering guidance on where to get inputs that they did not have.

## Milk Production

A 46% improvement in milk production was reported by respondents, additionally, there was a 25% increase of milk consumed by the households. These data signify improvement in income received from dairy and nutritional status of household members. Farmers from Ngusishi Cooperative recorded the highest level in milk production followed by Nyaki Kiburiine each producing 10.4 liters and 9.4 liters produced per cow in a day respectively out of which they consumed at least 2litres in a day. Farmers from Ngusishi had doubled their consumption rate when compared to the other cooperatives.

Milk spoilage had also significantly reduced amongst respondents by 62%. Respondents from mikinduri cooperative recorded a 100% reduction in milk spoilage followed by Ariithi. This was majorly attributed by the training on animal health and hygiene that had been adopted by most farmers to reduce contamination of milk as shown in figure 3.



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| Values                                                                        | Arithi | Meru North | Mikinduri | Ngusishi | Nyaki Kiburine | Grand Total |
|-------------------------------------------------------------------------------|--------|------------|-----------|----------|----------------|-------------|
| Average milk production per cow per day (Liters) - Before Maziwa (2017)       | 5.6    | 5.8        | 6.2       | 4.2      | 6.7            | 5.7         |
| Average milk production per cow per day (Liters) - Current status             | 5.8    | 8.5        | 7.5       | 10.4     | 9.4            | 8.3         |
| Average milk consumed in the household per day (Liters) -Before Maziwa (2017) | 2.2    | 1.9        | 1.7       | 1.0      | 2.1            | 1.8         |
| Average milk consumed in the household per day (Liters)-Current status        | 2.0    | 2.3        | 2.0       | 2.1      | 2.6            | 2.2         |
| % Increase in milk production per day                                         | 5%     | 45%        | 21%       | 146%     | 42%            | 46%         |
| % Increase in milk consumed in the household per day                          | -8%    | 18%        | 16%       | 108%     | 22%            | 25%         |
| % Reduction in milk wastage                                                   | 75%    | 71%        | 100%      | 71%      | 23%            | 62%         |

Figure 9: Data on milk production

## Livelihood

Income received from milk sold to cooperative doubled while income from milk sold locally reduced by 20%. This change could be attributed to the improvement in milk prices offered by cooperatives that had increased by 21% and the improved capacity of cooperative to store large quantity of milk for a longer period; that had resulted to improved confidence among farmers to sell more milk to the cooperative. In addition, it is notable that respondents recorded 49% increase in income from other dairy income generating activities. Overall, the respondents recorded 89% increase in income from dairy farming. In particular, 79% of the farmers did not only practice dairy farming as their only source of income but complemented it with other activities like commercial farming e.g., sell of miraa which is a very lucrative business in the region, others were in employment while some were poultry farmers. They had managed to double their income as compared to when the project started. Looking at the total income from dairy farming and other sources not related to dairy, the respondents reported a 98% increase in income.

Despite the very huge positive change, its notable that Arithi and Mikinduri cooperative respondents hadn't moved with the same pace as the other cooperatives. This could be attributed to the delay in the operation of the cooperative after being equipped with machinery to support in increasing the longevity of milk.

| Values                                                                                                | Arithi | Meru North | Mikinduri | Ngusishi | Nyaki Kiburine | Grand Total |
|-------------------------------------------------------------------------------------------------------|--------|------------|-----------|----------|----------------|-------------|
| Average monthly income from Cooperative milk sales-Before Maziwa (2017)                               | 0      | 3674       | 0         | 3294     | 0              | 3684        |
| Average monthly income from Cooperative milk sales-Current status                                     | 5820   | 8374       | 7318      | 16265    | 6885           | 8873        |
| Average monthly income from Local milk sales-Before Maziwa (2017)                                     | 3092   | 164        | 1347      | 0        | 385            | 914         |
| Average monthly income from Local milk sales-Current status                                           | 2228   | 128        | 1327      | 0        | 113            | 731         |
| Average of Other incomes generated from dairy related activities (Kshs)(monthly)-Before Maziwa (2017) | 0      | 1800       | 7157      | 36       | 3011           | 2328        |
| Average of Other incomes generated from dairy related activities (Kshs)(monthly)-Current status       | 357    | 3366       | 5344      | 1764     | 6233           | 3460        |
| Average of Income generated from other sources not related to dairy (Monthly)-Before Maziwa (2017)    | 13696  | 3689       | 13775     | 12309    | 10097          | 10501       |
| Average of Income generated from other sources not related to dairy (Monthly)-Current status          | 13902  | 6868       | 12650     | 53582    | 20984          | 21440       |
| Dairy income before                                                                                   | 9,801  | 5,638      | 11,567    | 3,331    | 5,656          | 6,926       |
| Dairy income after                                                                                    | 8,405  | 11,868     | 13,989    | 18,029   | 13,231         | 13,065      |
| Total income before                                                                                   | 23,497 | 9,327      | 25,341    | 15,640   | 15,752         | 17,427      |
| Total income after                                                                                    | 22,306 | 18,736     | 26,639    | 71,611   | 34,215         | 34,505      |
| % Increase in income                                                                                  | 33%    | 101%       | 20%       | 358%     | 154%           | 98%         |

Figure 10: Farmer's income

From the table above, data confirms that the respondents are well off financially. This is seen through the positive trend in income and affirmation from 54% of the respondents who are now more financially stable as compared to when they joined the project.

Majority of the respondents accredited their stability in income from the work that they did apart from Ngusishi who had 65% of their respondents accredited the change to the saving culture created and adapted that gave them financial stability. There were also respondents who accredited the change to support given by other cooperative members and Arithi cooperative had 12% of their respondents affirming this.

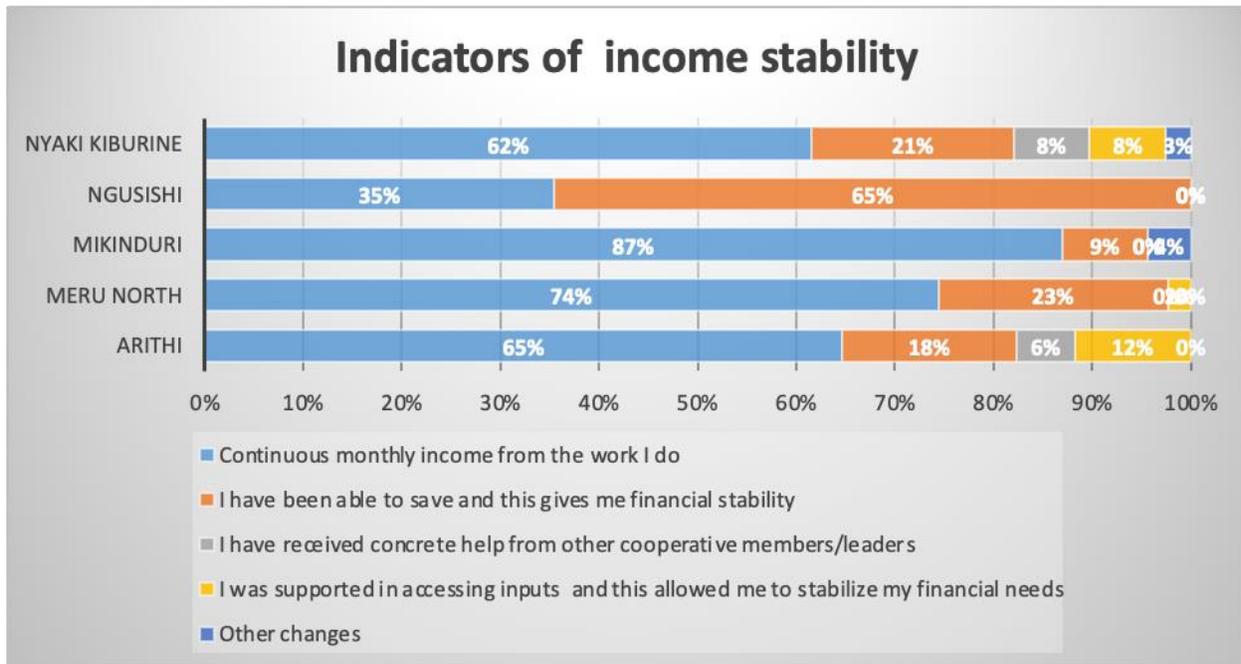


Figure 11: Indicators of income stability

Out of those that had a stable income, 99% attributed this to the Maziwa project and gave reasons like the stable functioning of the cooperative that guaranteed them monthly income whenever they supplied milk to these cooperatives, trainings on dairy that gave a boost to milk produced and also introduction to saving that has enabled the farmers to upscale or venture into more businesses.

45% of the respondent also invested more intensely in their income generating activity, this is seen through various startups of new business that was mainly done by Ngusishi and Arithi Cooperative respondents, expanding the scale of production by purchasing more farm inputs that was mainly done by Meru North cooperative respondents.

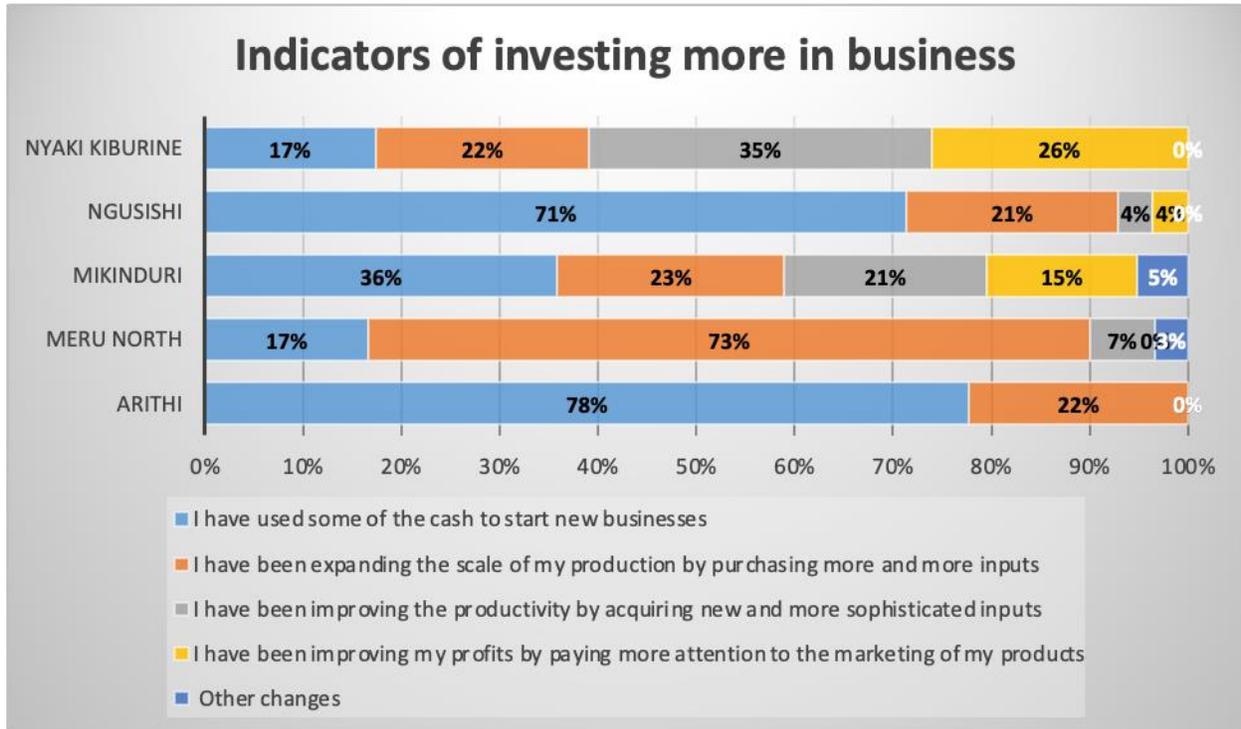


Figure 12: Statements that describe paths towards investing more in business

68% of those respondents that invested more on their business accredited this to the Maziwa project. Some of the things the project did to contribute to this change included knowledge given through the different trainings that helped to improve production, that positively affected income – additionally, saving culture led to improvement in savings that acted as collateral whenever the farmer was in need of money.



Figure 13: Key words describing contribution of projects to investments

70% of the respondents have great plans for their IGA – Change in mindset is difficult to estimate. Most farmers have plans of improving the breed of cows they own, construction of modern animal shed, starting new businesses which, they hope will eventually lead to more milk production for their dairy farming business.

One of the project deliverables was training on saving with the intentions of creating a good credit ground that the farmers could borrow and invest. 41% of the respondents had better access to credit as compared to when they were first involved in the project out of which 99% attributed this change to the project. Meru North and Ngusishi cooperative had over 50% of their respondents accessing credit due to their affiliation to the cooperative while Arithi and Kiburine Cooperative respondents had a reasonable group that had started saving with the bank thus increasing their access to credit

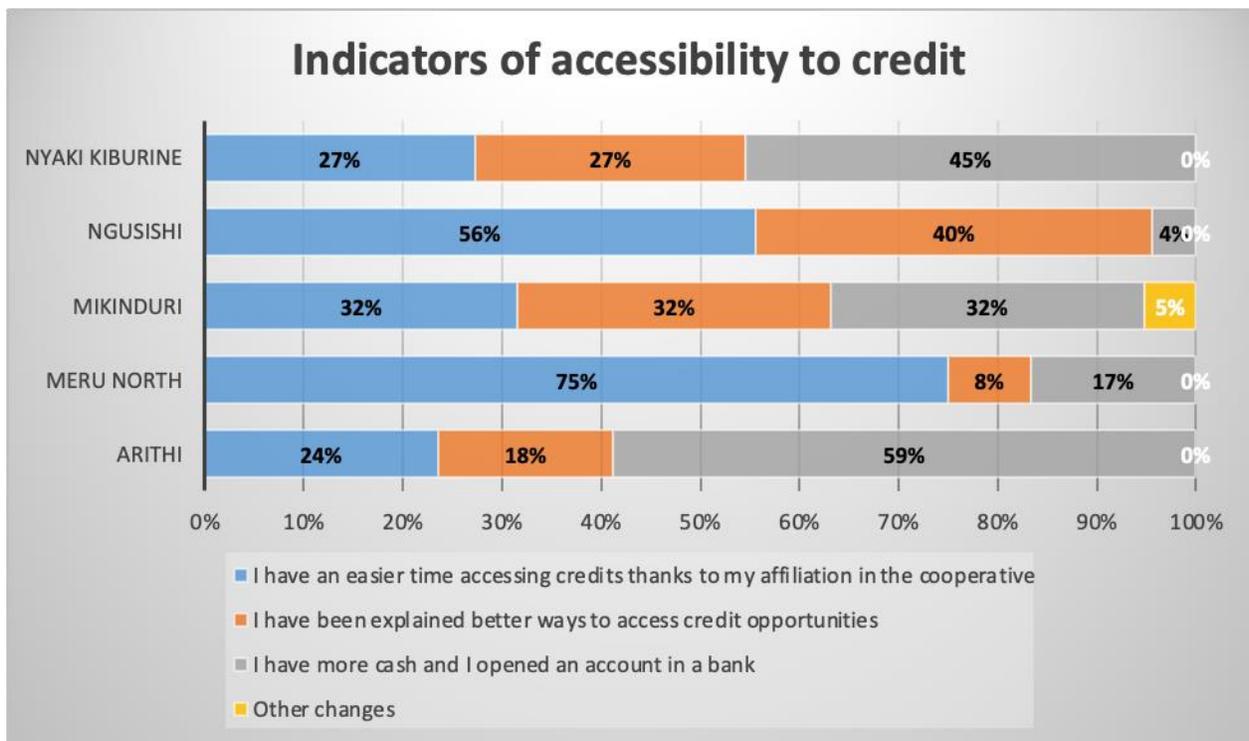


Figure 14: Statements that explain paths towards better access to credit

## Food Security

Food security is the accessibility of nutritious food in a sustainable manner. 55% of respondents mentioned that they had better access to food as compared to the time they were first involved in the project. A notable observation is that only 8% of the respondent had one or two meals in a day since the rest got three or more meals in a day. Over 90% of the respondents are food secure with Ariithi cooperative having over 98% of respondents who can afford at least 3 meals in a day.

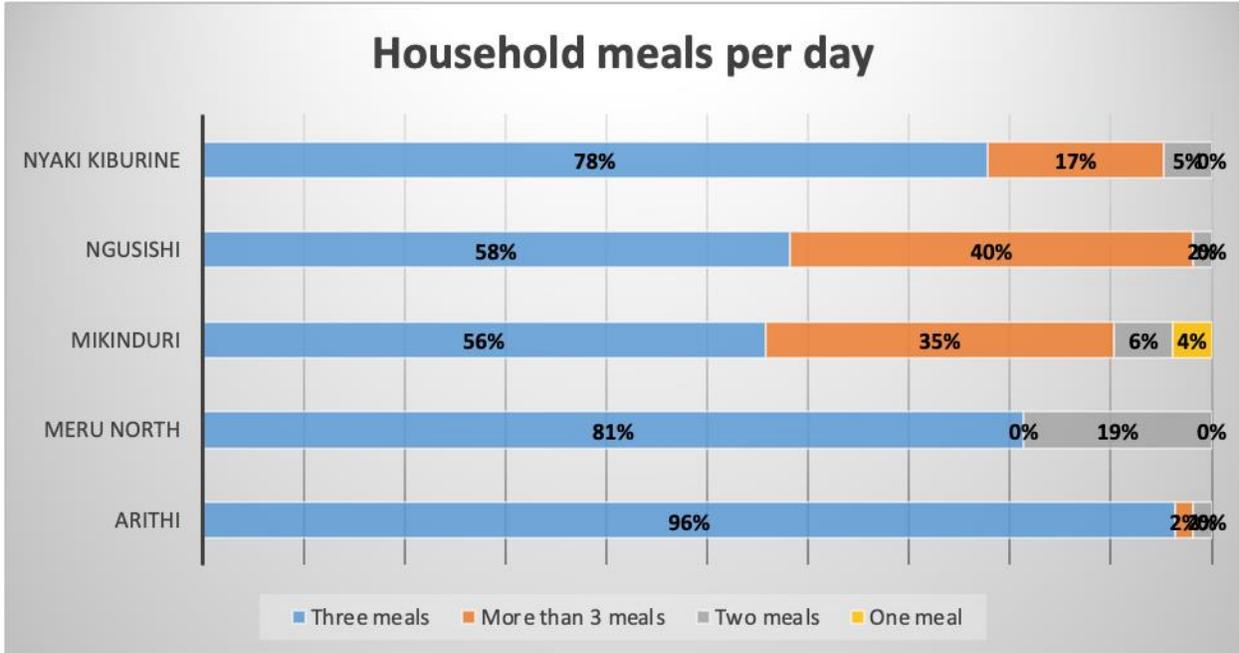


Figure 15: Household meal consumption in a day

In addition to the frequency of meals given in a day, the respondents went further to explain that they are able to eat more nutritious, tastier and even expensive food while others said that although their diet hasn't changed, they now have surplus that they share with their relatives.





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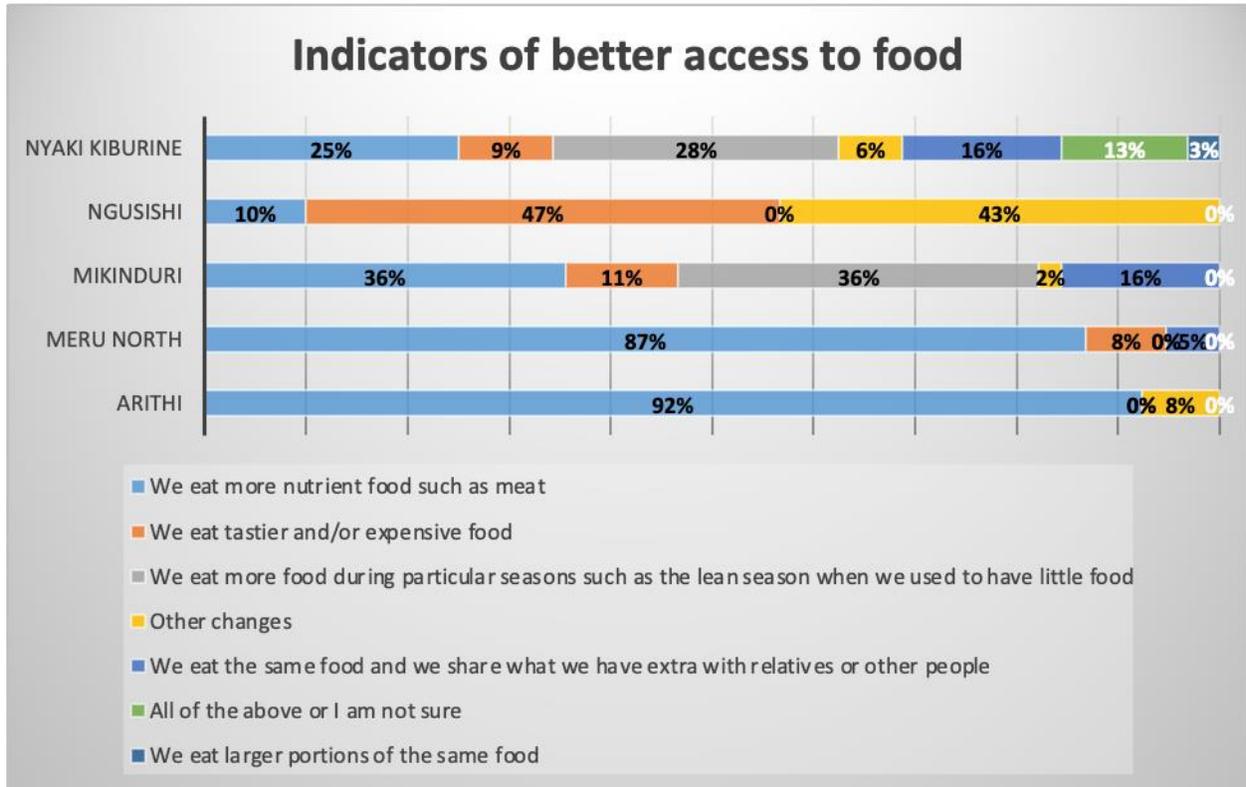


Figure 16: Statement describing paths towards better food security

## Health

On health situation of the respondents, 58% of the respondents had improved health condition as compared to when the project started and 54% of these respondents have acquired a national health insurance cover (NHIF) to caution them when they become ill. 41% of the respondents with better health condition were grateful to the project as it had enabled them achieve this milestone and gave praise to efforts made in achieving financial security and knowledge that brought the possibility of enhancing access to health.

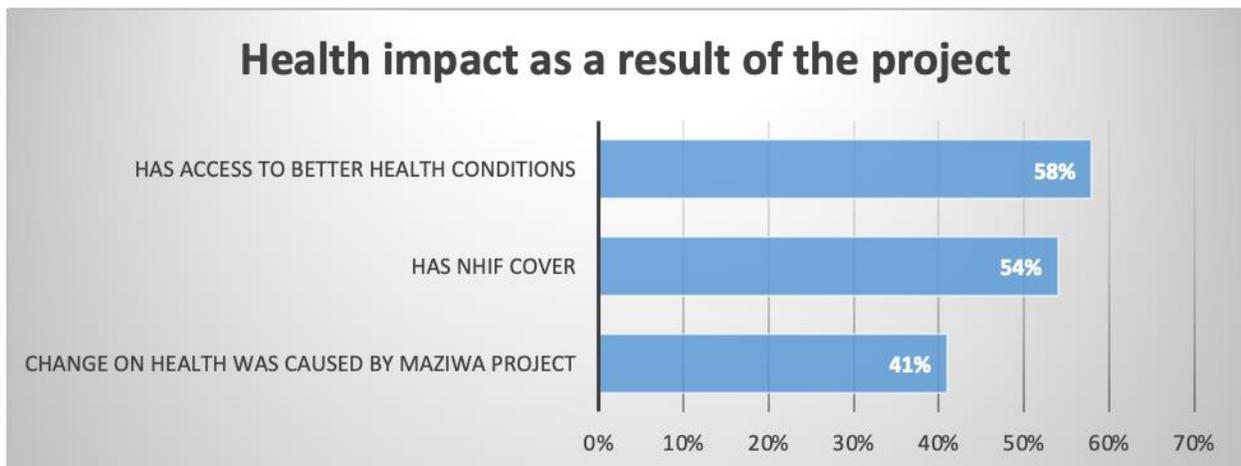


Figure 17: Health impact caused by Maziwa Project

## Education

Education was also impacted positively by the project with 51% of the respondents having better access to education as compared to when the project was starting. 43% of the respondents with better access to education accredited the change to the project and said they are now able to take their children for skills training after secondary education, their children are attending better schools and that they have enrolled more children in school. From Figure 20, it's also good to note that in Mikinduri, 49% of respondents have more of the children enrolled in schools which reflects the overall impact the project had in contributing to achieving sustainable goals.

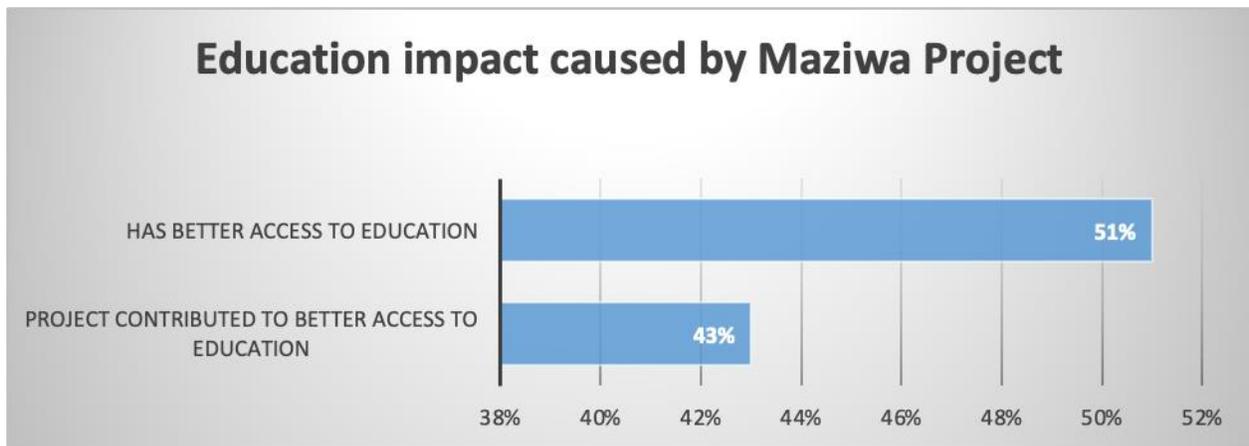


Figure 18: Education impact caused by Maziwa Project

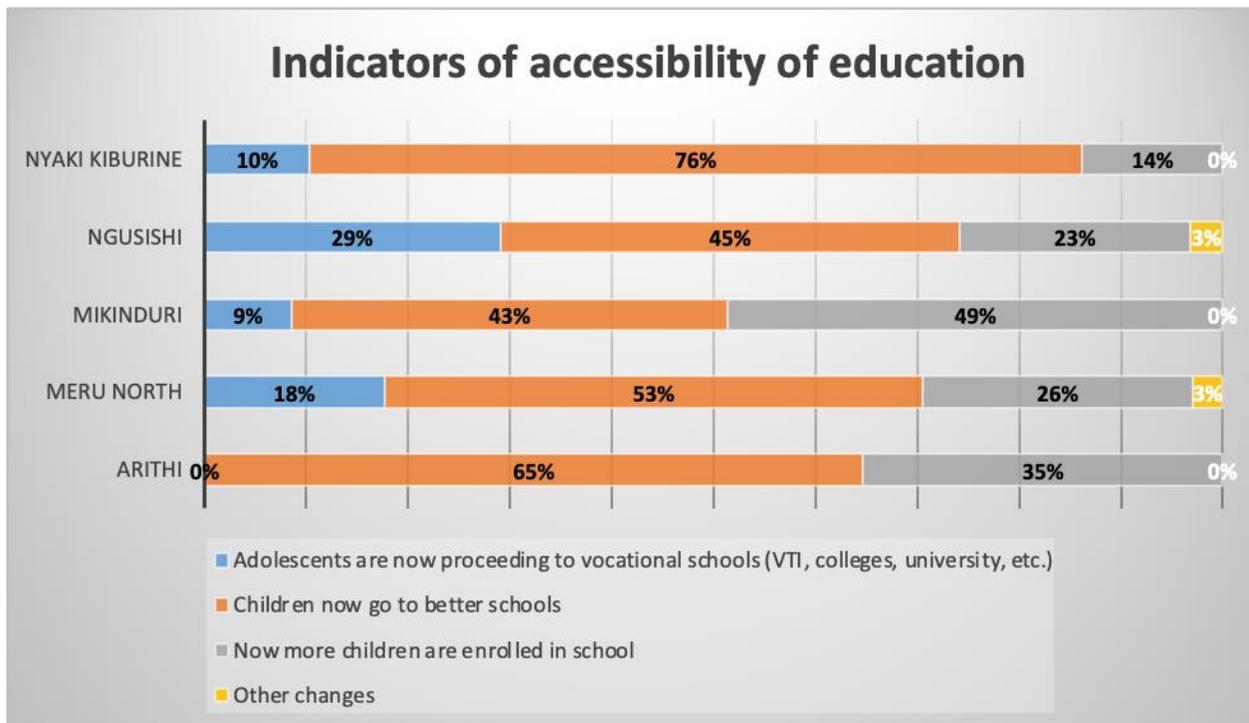


Figure 19: Statements that show better access to education

### Renewed self-esteem and capacity to solve problems

Apart from the economic impact the project had to the community, there were also observable psycho-social impacts. For instance, over 75% of respondents from Ngusishi, Mikinduri and Meru North cooperative had acquired knowledge transferable to other people thus contributed to boosting their self-esteem while 56% of respondents from Arithi cooperative had gained more confidence in themselves.

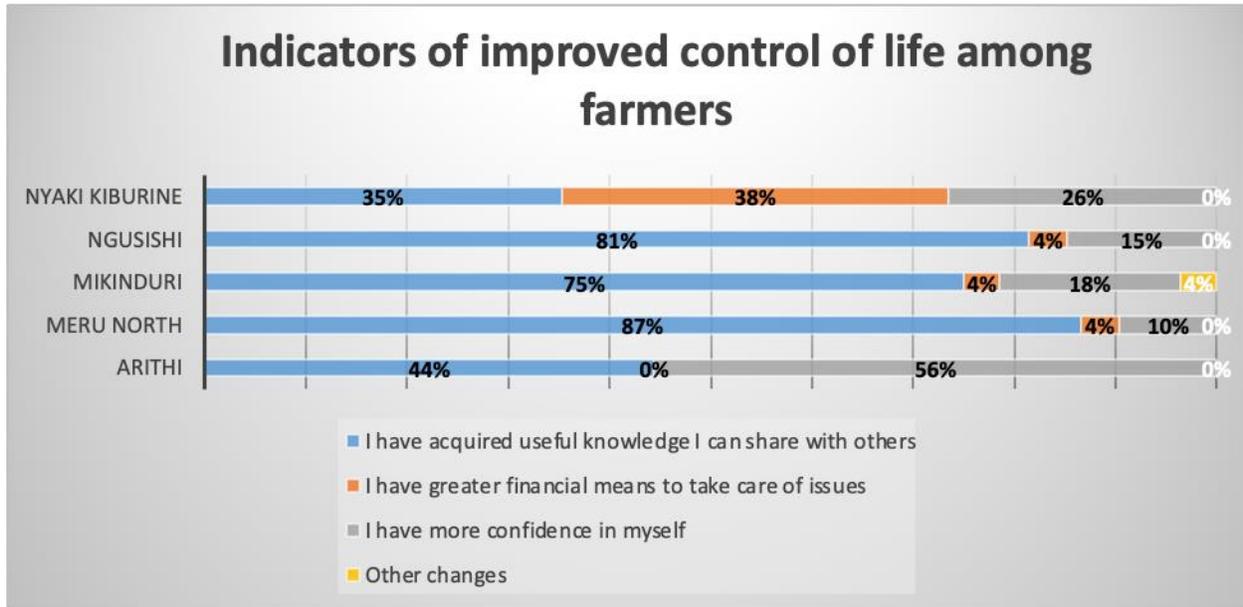


Figure 20: Indicators of improved control of life among farmers

81% attributed the improved control of their life to the project. Some of the benefits that the respondents have had as a result of control they have gained is that their confidence have gone up, they are making better plans for their lives, their income has improved due to discipline on how the manage resources and they are now living more peacefully with their family.



Figure 21: Words showing benefits achieved as a result of control over their life

## Greater economic opportunities for the community at large

A trickledown impact to the larger community was felt with 81% of the respondents reporting that the community benefited from the project. There was a 47% increase of farmers buying more farm inputs like fodders thus impacting positively the economy of the community while 40% of the respondents said that the community are also learning from the trend and example they are setting after being part of the Maziwa project.

A similar effect was felt in the dairy sector with 77% of the respondents reporting that they thought the Maziwa project had benefited the dairy industry. These benefits were seen in form of more farmers with greater experience on dairy farming, improved capacity of existing cooperatives and increased trained farmers who are now providing advice to other farmers that was mentioned by most respondents from all the five cooperatives.

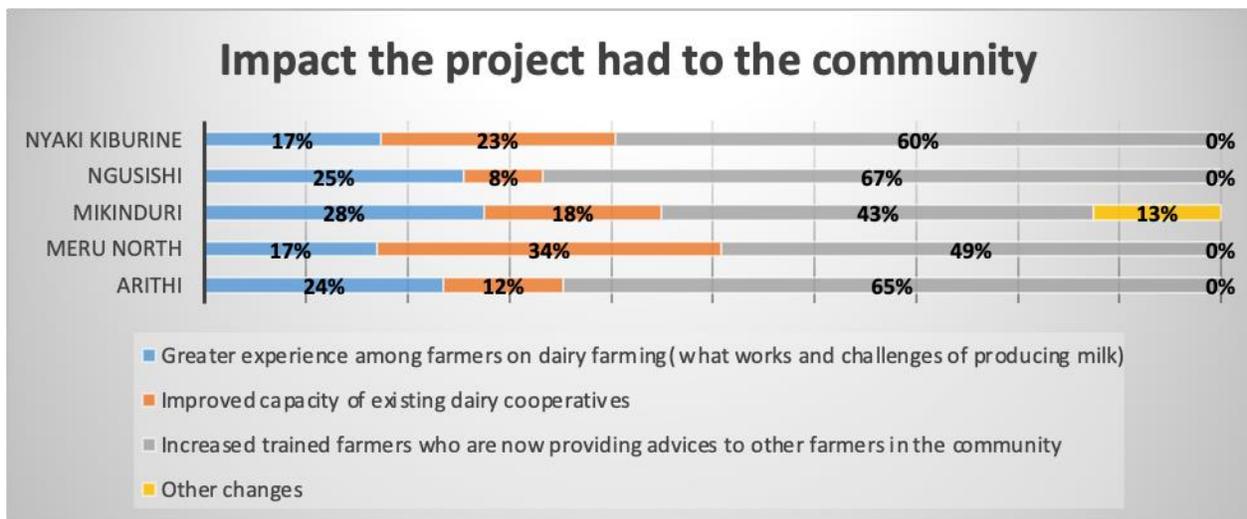


Figure 22: Statements that show the impact the project had to the community

## Project Feedback and Accountability to Affected Population

On the level of satisfaction, beneficiaries were very satisfied with how the project was done with 34% and 40% of the respondents being totally satisfied and very satisfied respectively. This satisfaction came from the knowledge that they had received, more money that they got as a result of being part of the initiative while others were satisfied with the project because of the milk can they received or the business opportunity that had been brought to their attention. The data below shows a summary of some of the things that the beneficiaries received that contributed to their satisfaction.

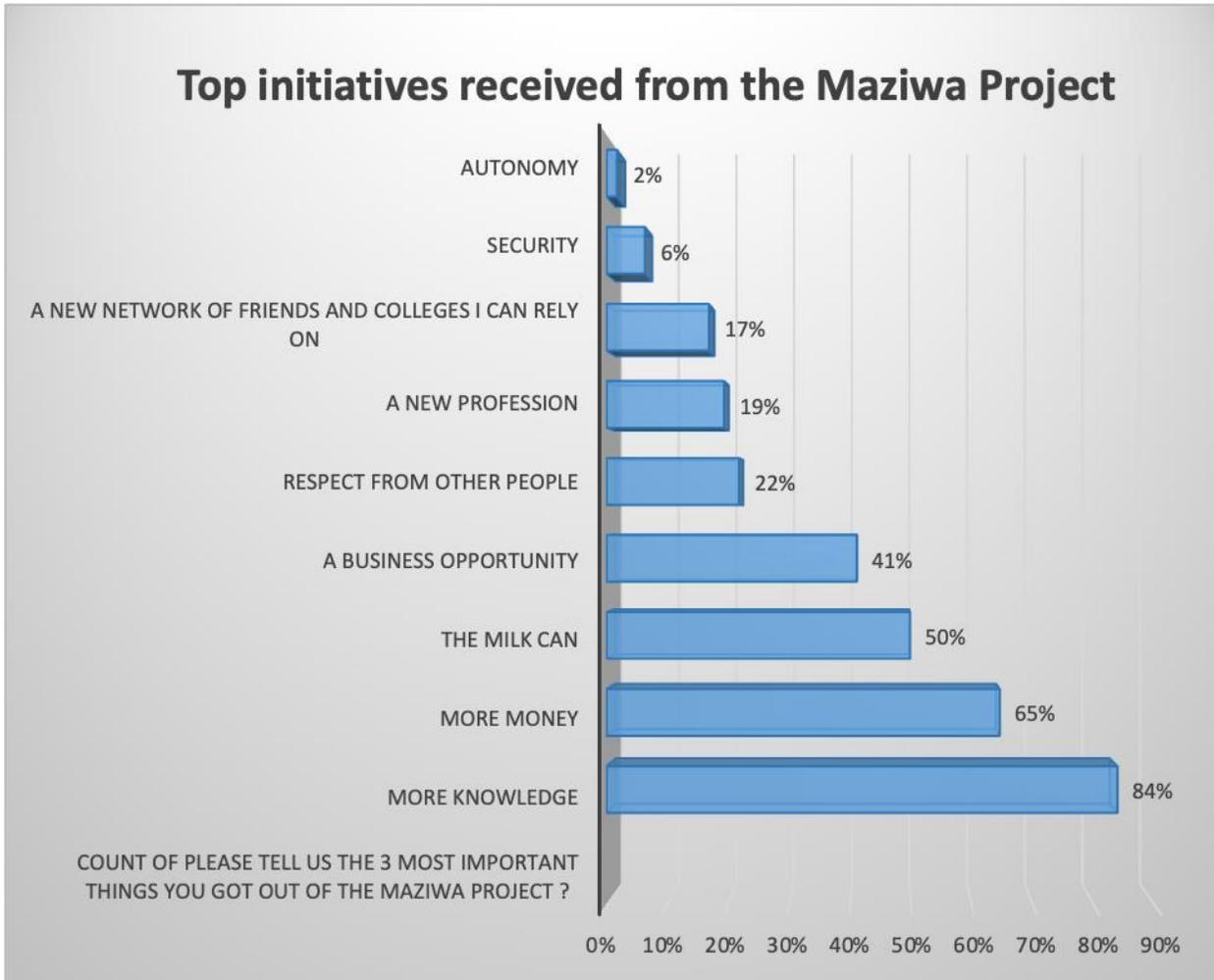


Figure 23: Top initiatives received from the Maziwa Project

## 4. COOPERATIVE RESULTS

At the project inception period, 5 cooperatives had been selected for the project. The cooperatives were evenly distributed to different sub counties of Meru based on need and practice of dairy farming in the region thus striking a balance in overall contribution to building resilience to Meru County. Additionally, these cooperatives were at different levels in terms of operative effectiveness. For instance, Ariithi, Mikinduri and Nyaki Kiburiine cooperatives had farmers ready to form a cooperative and actively supply milk but lack the resources i.e., from office to equipment required to run a cooperative and the non-existence of the management structure. Cooperatives that were fairly functional were Meru North and Ngusishi cooperatives but the challenges of management, milk processing that resulted to wastage and low trust among members to cooperative.

This part of the evaluation is going to show the contribution the project had in building the cooperative effectiveness to respond to the needs of its members.

## Cooperative membership Registration

The cooperatives recorded a significant improvement in membership, cooperatives that had members already registered doubled their membership while those cooperatives that had not yet registered any members recorded very positive reception of members. Data below gives an illustration of cooperative membership.

| Members registered in cooperative | Ariithi | Meru North | Mikinduri | Ngusishi | Nyaki Kiburiine | Total |
|-----------------------------------|---------|------------|-----------|----------|-----------------|-------|
| Before Maziwa project (2017)      | -       | 59         | -         | 283      | -               | 342   |
| Current status                    | 1,120   | 400        | 400       | 500      | 600             | 3,020 |

Figure 24: Cooperative members

Looking closer into how active the registered members were (in this case active being defined as members that supply milk to cooperative on a regular basis), the observation was that Meru North and Ngusishi cooperative had at least 75% of their members supply milk to their respective cooperative. Comparing the number of active members before the project and the current status, number had significantly increased with Meru North cooperative recording a quadruple change.

On the other hand, cooperatives that were not functional at the time of project inception recorded a low rate of members supplying milk to cooperative excluding Mikinduri that had 66% active members. The low reception rate could be attribution to period taken before these cooperatives acquired the capacity to receive and process milk.

| Active members                                       | Ariithi | Meru North | Mikinduri | Ngusishi | Nyaki Kiburiine | Total |
|------------------------------------------------------|---------|------------|-----------|----------|-----------------|-------|
| Before Maziwa project (2017)                         | -       | 59         | -         | 150      | -               | 209   |
| Current status                                       | 120     | 309        | 265       | 375      | 116             | 1,185 |
| % increase of active members out of total registered | 11%     | 77%        | 66%       | 75%      | 19%             | 39%   |
| % increase of active members                         | -       | 424%       | -         | 150%     | -               | 467%  |

Figure 25: Cooperative active members

## Cooperative Management structure

In an endeavor to have fully functional cooperative, certain variable had to be in place one of them being cooperative leaders that should be elected by the members. The leaders were democratically elected by members of the cooperatives and their role clearly spelt out to improve efficiency within the cooperative. In addition, member needs were factored in the selection process, for instance, leaders elected had to be practicing dairy farming and be an

active supplier to the cooperative. The project trained the elected leaders on Governance, Marketing and Management.

In addition to choosing the cooperative leaders, the cooperatives were also supported in their **registration** to be a cooperative where the project supported the Ariithi, Mikinduri and Nyaki Kiburiine to be registered as the other 2 cooperatives were already registered. In addition, the cooperatives were also supported to acquire health certificates and other licenses as required like the Kenya dairy board license that are fundamental in running the dairy cooperatives.

Additionally, the project created a networking platform between the 5 cooperatives and other key players in the cooperative sector like the Kenya Dairy Board, government officers, input suppliers and service providers, Meru Dairy Union and other processors, developing farmers, other cooperatives that all significantly positively influence the running of a cooperative. This networks also shared new or existing opportunities available to promote operations of the cooperatives,

### Project activities

Looking at project activities; apart from asset transfers done, the cooperatives were also offered soft skills that include;

1. Development of business plans and administration of social enterprise
2. Use of information communication technology (ICT)
3. Management and marketing skills training, linkages and contact made with other sector players like linkage to structured market, input supplier for member education

The cooperative recorded 100% participation in the soft skills training and some of the results realized were:

- a. 100% adoption and use of ICT in all the five cooperatives.
- b. 100% development of business plan by all the 5 cooperatives

While interrogating the impact the activities had in influencing operations of the cooperative, an even effect was observed with activity impact not being felt through one activity. This just goes ahead to display diversity of the cooperatives in terms of gaps at the time of project inception as illustrated below;

| Which of the following interventions was the most impactful            | Ariithi | Meru North | Mikinduri | Ngusishi | Nyaki Kiburiine | Grand Total |
|------------------------------------------------------------------------|---------|------------|-----------|----------|-----------------|-------------|
| Use of ICT.                                                            | 1       |            |           |          | 1               | 2           |
| Development of business plans and administration of social enterprise. |         |            | 1         | 1        |                 | 2           |
| Management and marketing                                               |         | 1          |           |          |                 | 1           |

Figure 26: Activities most impactful



**50**  
years

People for development

Ariithi and Nyaki Kiburiine cooperative found ICT to be very helpful because through e-record keeping, overall management of cooperative was improved through the ability of the management team to remain transparent and accountable. On the other hand, Mikinduri and Ngusishi found development of business plan and administration of social enterprise because it gave the cooperatives a foot print of where they wanted to be in the near future and the steps required to bring that vision into reality.

### Milk Production, Yoghurt Production and Milk Spoilage

With proper management and a fully functional cooperative center, product of trade i.e., milk is assumed to increase because cooperative members are more confident in working with the cooperative. The situation for the 5 cooperatives was not any different with the cooperatives recording a significant increase in milk supplied to them by farmers. For cooperatives that were already receiving milk from farmer, they doubled on milk supplied to them per day as highlighted below;

| Milk supplied to cooperatives per day (liters) | Ariithi | Meru North | Mikinduri | Ngusishi | Nyaki Kiburiine | Total  |
|------------------------------------------------|---------|------------|-----------|----------|-----------------|--------|
| Before Maziwa (2017)                           | -       | 100        | -         | 1200     | -               | 260    |
| In the past one year                           | 300     | 987        | 1050      | 3000     | 535             | 1174.4 |

Figure 27: Milk supply to cooperative

Milk spoilage also significantly reduced by 61%. This change was mainly attributed to the existence of milk processing equipment that made it possible for the cooperatives to increase milk life. Additionally, the cooperatives also mentioned that the shift from using plastic cans to aluminum milk cans by its member farmers also contributed to increasing milk life due to the efficiency in maintaining the hygiene of aluminum cans.

When looking at the project additional added value to cooperatives in better serving farmers and bring more value to the milk they supplied was the launch of yoghurt making where at the time the evaluation was being conducted, Meru North and Ngusishi cooperatives had started making yoghurt. The two cooperatives had made over 2,400 liters of yoghurt.

### Cooperative income

From the data above, it's quite evident that milk handled by cooperative had increased which directly influenced cooperative increase in income. Ngusishi cooperative recorded the highest increase in income followed by Meru North cooperative. It is also important to recognize that Mikinduri cooperative was making quite an impressive trajectory bearing in mind that it was not receiving milk by the time the project started. Data on monthly income is as represented in the table below;



**50**  
years

People for development

| Cooperative monthly income | Ariithi | Meru North | Mikinduri | Ngusis hi | Nyaki Kiburiine | Grand Total |
|----------------------------|---------|------------|-----------|-----------|-----------------|-------------|
| Before Maziwa (2017)       | -       | 150,000    | -         | 1,260,000 | -               | 282,000     |
| In the past one year       | 450,000 | 1,500,000  | 1,293,870 | 4,150,000 | 615,825         | 1,601,939   |

Figure 28: Cooperative income

It is also good to note that the monthly income displayed above wasn't entirely dependent on milk but also represented additional services that these cooperatives offered their members like Artificial Insemination services, loans, financial literacy and educational loans.

