

LOCAL RESOURCES FOR:
AGROECOLOGY – HEALTH – EDUCATION

ENAVA

LOCAL RESOURCES FOR BETTER LIVING



Activity Report
2018

CONTENTS

FOREWORD	3
SITUATIONAL FACTS AND KEY FIGURES	4
ESSENTIAL FACTS 2018	6
TEAM AND ORGANIGRAM	7
HOW WE WORK	8
– COMMUNITY EDUCATION	9
– ISEGERETOTO ORGANIC FOOD SELF- SUFFICIENCY PROJECT	11
– TREE NURSERY	12
– TRIALS & IMPROVEMENTS	13
– GENERAL TOPICS	15
FINANCIAL REPORT	16
OUR NETWORK	17

FOREWORD

The year 2018 has seen the improvement of multiple facets of our organisation, especially in terms of our operations. On one hand, the visit of Gil Carron, a Swiss agricultural engineer, has enabled us to greatly improve our vision of organic agriculture and the R&D related to it; on the other hand, the pursuance of activities that were initiated in 2017, led to tremendous improvements in the way we deliver our impact.

In Switzerland, the general assembly of our sister-organisation "the Isegeretoto association" voted unanimously to rename itself as "EMAUA Switzerland". This decision was taken in order to better reflect its mission of supporting EMAUA's activities in general, and not only those carried at Isegeretoto School. Moreover, a team of motivated volunteers have worked throughout the year, to enable EMAUA to enhance its presence in Switzerland.

We're mostly excited about the increasing number of students that our education program has reached in Teso North, totalling 26,000 in 2017-18. The development of our "trials and improvements" department is also thrilling, as it gave birth to the improved stoves building program after two years of trials, a new promising program. The trials conducted on Cajanus cajan provided us with a better understanding of its potential as a perennial subsistence crop. Finally, the permaculture "Hügelkultur" technique substantially improved the soil fertility of our targetted plots.

Ultimaltely, I'd sincerely wish to give my dearest thanks to our donors, who have showed us the most valuable support. Alongside the widening of our base of donors, we also experienced an increase in the monthly donations that we receive, which in turn granted us much security in the execution of our activities month after month. The emails and comments we receive on social media cheer us a lot. Thank you!



Julien Kauer

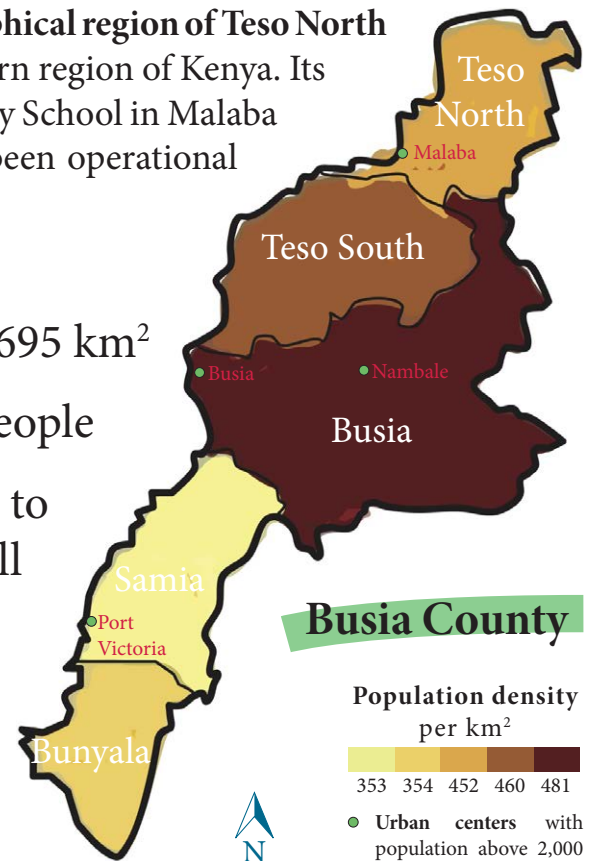
Chairman and founder

Local Resources Integration
Open Source Traditions
Science Agroecology
Biodiversity
Peer Teaching
Sustainability
Education Research for Development
Education
Open Source Agroecology
Food Local
Empowerment
Collaborative
Sustainability
Design Local
Resources
Health Open Source
Carbon Farming
Local Resources
Better Living
Integration
Sustainable Development Goals
(SDGs) Biodiversity
Transdisciplinary

SITUATIONAL FACTS & KEY FIGURES

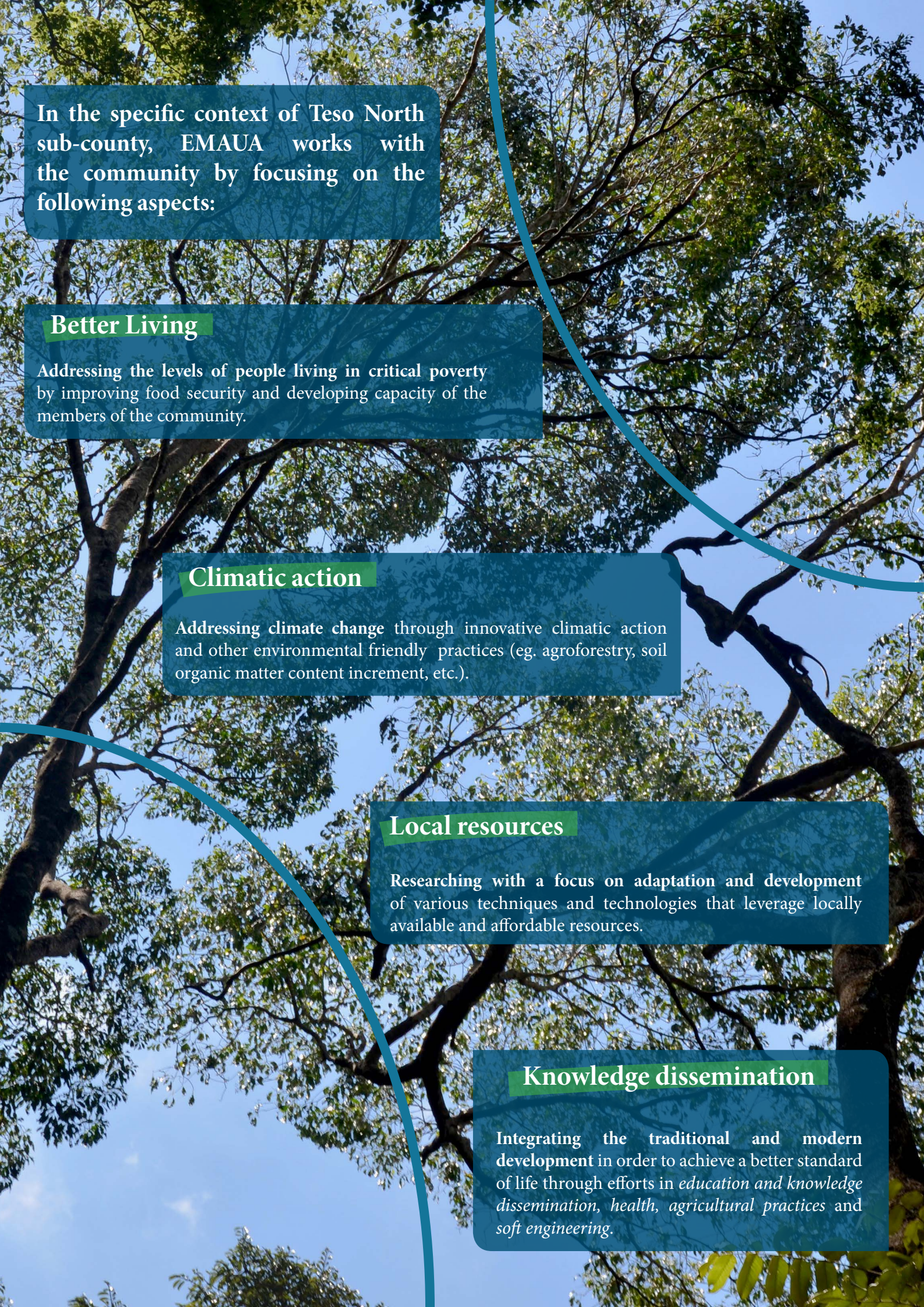
EMAUA C.B.O operates in the geographical region of Teso North sub-county, Busia county, in the western region of Kenya. Its headquarters are at Isegeretoto Primary School in Malaba Kenya, where the organization has been operational since 2015.

Total area: 1,695 km²
Population: 736,300 people
Tropical Climate: 1,200 mm to 1,800 mm average rainfall
Unemployment rate: 72%
Average monthly income (rural areas): 1,239 KSH (12 \$)



Teso North sub-county region experiences a tropical climate marked by two rainy seasons, long rains (March to May) and short rains (September to November). This weather patterns support agriculture as the main socio-economic activity. However due to **climate change**, there have been harsher dry seasons resulting in food insecurity and water scarcity.

The economic demographic is characterized by a large part of the population living with **low incomes** (12\$ per month according to County Government Reports). The main activity practiced is **small holder subsistence agriculture** with an average of 0.6 ha landholding per household. Other income generating activities include daily wage casual labour, motorcycle transportation and small-scale enterprises selling general commodities.



In the specific context of Teso North sub-county, EMAUA works with the community by focusing on the following aspects:

Better Living

Addressing the levels of people living in critical poverty by improving food security and developing capacity of the members of the community.

Climatic action

Addressing climate change through innovative climatic action and other environmental friendly practices (eg. agroforestry, soil organic matter content increment, etc.).

Local resources

Researching with a focus on adaptation and development of various techniques and technologies that leverage locally available and affordable resources.

Knowledge dissemination

Integrating the traditional and modern development in order to achieve a better standard of life through efforts in *education and knowledge dissemination, health, agricultural practices and soft engineering.*

ESSENTIAL FACTS

In 2018, our main aim has been to improve the quality of our services by consolidating the knowledge and activities from the previous years. We visited almost all primary schools in Teso North that had not been visited in 2017 yet, with a number of 9,000 sensitized students. Our tree nursery produced 15,000 indigenous trees. We also managed to launch a pilot project of installing improved cooking stoves for 17 families.

Key:

Switzerland : CH

Kenya : KE

JANUARY

Launch of the Community Education Program

FEBRUARY

Gil Carron (Ing. agro.) visits us and initiates the trial on Cajanus

MARCH

Start of 4th year for **Isegeretoto project**

APRIL

Start of tree **seedling distribution** for first season with an aim of distributing 15,000 seedlings

AUGUST

Start of 2nd season for Isegeretoto Project

JULY

+9K people reached in **Community Education Program**

1st season harvest for Isegeretoto project

JUNE

Isegeretoto Association renames itself to **EMAUA Switzerland**

MAY

Creation of an **improved cooking stove** pilot projet

Conference at EPFL for IDM, Lausanne (CH)

SEPTEMBER

EMAUA hosts **The Meal 2018** (6th edition) in Fribourg (CH)

OCTOBER

NOVEMBER

15,000 tree seedlings production achieved

DECEMBER

Hosting of 2 volunteers (FR & CH)

TEAM AND ORGANIGRAM

The most important aspect allowing EMAUA to execute its mission is its people, who mostly originate from our areas of activities. Our team in 2018 was composed of 7 employed staff who are supplemented by casual laborers, occasional volunteers, and interns. We have a strong belief in investing in our staff by developing their capacity to handle project duties and administrative tasks.

GENERAL ASSEMBLY

ADMINISTRATION

- Management/Finance
- Communication/Fundraising

PROJECTS & PROGRAMS

- Isegeretoto Organic Food Self-sufficiency Project
- Community Education
- Tree Nursery
- Trials & Improvement Projects

WELFARE

- Housekeeping
- Volunteers

EMAUA'S TEAM

Julien Kauer *Chairman and founder* | **Adams Maase** *Operations Secretary*
Maureen Etee *Accountant* | **Michael Odieka** *Field Manager* | **Violet Amoït** *Welfare*
Evans Chemiat *Vegetables Production* | **Leonard Aserwa** *Tree Nursery*
Joy Atogot *Intern*

LOCAL RESOURCES FOR BETTER LIVING

Our work is inspired by the recurring need to address challenges affecting communities, key of these being: low food production and food security, inadequate health care and degradation of the natural environment. EMAUA is focused on collecting and developing solutions that are based on the use of local resources in a region with a prevalence of low income earners.

In 2018, our key activities were: **Community Education Program, Isegeretoto School Organic Food Self-sufficiency Project, Indigenous Tree Nursery, Trials & Improvements.**

HOW WE WORK



#5

Implementation
in schools and
community
projects

#4

Dissemination
of gained
knowledge

#2

**Development
and adaptation**
of indigenous
and scientific
knowledge

#3

**Trials and
validation of
techniques**

Deep integration
within the
community

EMAUA is in essence a knowledge based change agent in our communities. We aspire to develop and adapt suitable practical solutions to key challenges through the innovative use of local resources. Our methodology of work follows a 5 step framework.

#1 We deeply integrate ourselves within the community in order to understand the context in which we will be engaging. Insight gained from assimilation and listening to the various community members informs, **#2 gathering knowledge** and developing suitable solutions. **#3 trials and validation** of potential solutions. It includes: pilot projects, experiments and on-farm trials.

#4 dissemination of knowledge through our Community Education Program. **#5 collaborations**

to set up projects in the community (especially in schools) to consolidate the knowledge and make it easily available to the entire community.



COMMUNITY EDUCATION

EMAUA's Community Education Program is the platform that enables us to **interact and share the knowledge, skills and techniques** with members of the community. The interactive forums have provided us with vital inputs on the issues that our organization has the potential to address.

The program 2018 was a continuation of the outreach to students in primary and secondary schools within Teso North region. This marked the end of the first phase of a two-year project, whereby **we managed to reach a further 9,000 people** in addition to the 17,000 reached in 2017.

LOCAL SOLUTIONS FOR GLOBAL PROBLEMS

The guiding theme for the 2018 Community Education Program was Local Resources for Better Food Production. We taught viable techniques for small-scale farming that utilized local resources. Our approach involved formulating an audience-friendly information which could be delivered in short interactive sessions.

The main subjects focused on:

1. **Soil health:** the use of *Tithonia diversifolia* as a viable source of soil nutrient when used as a green manure
2. **Biological pest control:** a technique based on the use of plant extracts to control harmful insects. The technique taught involved the use of an aqueous extract of *Capsicum annum* and *Tithonia diversifolia* to control aphids and other insect pests.

Our outreach in 2018 marked a major milestone in our Community Education Program with a the total number of people reaching 28,000 since the program's inception in 2016. We believe that the interactions we had with students enabled them to appreciate the value of local resources and the advantages present for food production and environmental-friendly practices. We also gained valuable experience in coordinating, delivering, and building capacity for this project which will be beneficial in our activities in the future.



COMMUNITY EDUCATION

M. Odieka and J. Kauer at a community education forum, in front of pupils from Amagoro Primary School. The lesson included teachings on the production of free manure and natural insecticide, based on the use of local plants.

ISEGERETOTO ORGANIC FOOD SELF-SUFFICIENCY PROJECT

The year 2018 marked the fourth year for the Isegeretoto School Organic Food Self-Sufficiency Project. The project's activities were carried out on tracts of land belonging to the school that came to a total of 7 acres.

The primary objective of this project is to model a self-sufficient organic food farm whereby the pupils and staff are able to receive healthy organic food while significantly reducing the school's budget. The activities also provided an avenue to demonstrate the agroecological techniques utilised as well as to conduct on-farm research and trials.

LOCAL RESOURCES FOR BETTER FOOD PRODUCTION

	Needs	Supply	S _s Rate
Maize	5.98	1.3	22%
Beans	1.6		0%
Finger Millet	0.37	0.15	41%
Sorghum	0.37	0.39	100%
Cassava	0.15	0.44	100%
Wheat Flour ¹	2.13		0%
Rice ¹	4.42		0%
Meat ¹	1.84		0%
Milk			0%
Tomatoes ¹			0%
Onions ¹			0%
Cabbages	0.77	0.13	17%
Kales	0.53	0.68	100%
Cowpeas	0.49	0.63	100%
Tea Leaves ¹	0.03		0%
Cooking Oil ¹	4.49		0 %
Salt (kg) ¹	0.22		0%
Total Rate			28%
Production Rate			40%

Key:

S_s rate: self-sufficiency rate

Our approach in the project involves the use of local resources to improve soil fertility, control pests in the farm and preserve the crops after harvest.

The main crops being cultivated are cereals and vegetables using the mexican sunflower (*Tithonia diversifolia*) as a key plant resource for green manure and as a main ingredient in our biological pest control solution.

The year saw a production increase of 49% compared to the performance in 2017. This improvement in the overall self-sufficiency rates is attributed to an improved vegetable production and a bumper harvest in the cassava crop planted in the previous year. Despite the heavy flooding that led to some maize crop loss in the first season, our improved results led us to appreciate the advantages of having crop diversity. The self-sufficiency rates for crops that are producible within the project stood at 40% for an average of 300 pupils and staff in 2018. These rates were calculated by comparing EMAUA's production and the school's estimated needs.

This project has been a source of valuable insights on the practice of agroecological techniques as well as sharing our knowledge and experience with the local community.

Table 1: Isegeretoto's Food self-sufficiency rate 2018

The table compares the school's needs with EMAUA's food production in order to achieve a self-sufficiency rate (S_s rate). The total rate (28%) is the self-sufficiency rate achieved when considering all school's needs, and the production rate (40%) is the self-sufficiency rate achieved when considering the items that can be produced locally.

¹ Food items marked are not produced by the project.



TREE NURSERY

Trees remain one of the best known solution for addressing climate change, and indigenous trees provide communities with priceless ecosystemic services like the increase of soil organic matter, soil's retention of moisture and biodiversity; and the production of firewood.

Our indigenous tree nursery produced 15,000 seedlings in 2018, that were planted in our agroforestry fields. Many requests were related to the need for sustainable firewood production, that gave us the opportunity to teach the beneficiaries about environmental-friendly tree management techniques.

INDIGENOUS TREES FOR BETTER REFORESTATION

After examining the recurrent needs of the communities of Teso North through our Community Education Program, we identified the following points as „needs for change“: soil erosion and poor soil retention of moisture, low rainfalls and lack of firewood. With regards to that, agroforestry came out as a versatile solution, with other benefits such as atmospheric carbon storage, temperature cooling, amongst others.

Our tree nursery produced 15,000 seedlings for two consecutive years, with a main aim at mastering the production of medium-scale tree planting. Our strategy for this project has been so far to:

1. **Produce viable seedlings**, with indigenous species forming a majority of our nursery stock.
2. **Incorporate agroforestry** as part of our Community Education Program.

To improve the quality of our activities, we aim to enhance the following areas:

1. Upgrade of our equipments in order to reach a peak of production of viable seedlings at the most favorable time during the two rainy seasons.
2. Make tree management and tree planting the core of our new Community Education Program, so as to create awareness among the youth on the significance of the ecosystemic services provided by trees.
3. Better assess the seedlings survival potential for each applicant. This could be addressed through the hiring of a responsible for the seedlings delivery, who would be committed to assess the conditions for each applicant.



TRIALS AND IMPROVEMENTS

Our aim of carrying out trials and development activities is to identify and adapt solutions harnessing local resources, in order to improve peoples' lives. We strongly believe that such solutions exist but are persistently faced with the challenge of dissemination to the communities that really need them. Our methodology involves identifying issues, exploring existing solutions and adapting technologies, with a focus on local resources. In the year 2017, our research portfolio featured: improved cooking stoves and agroecological on-farm trials of perennial crops and sustainable farming techniques.

CAJANUS CAJAN

We believe that food security can be improved by increasing the diversity of crops grown by farmers. Perennial crops have demonstrated to increase the resilience of farm systems as they show generally better drought resistance and are easily integrated within the local farming systems.

With the help of Gil Carron, a Swiss agricultural engineer, we began an on-farm trial to experiment on *Cajanus cajan* (pigeon peas) as a viable perennial crop to integrate in the local farming systems. The

crop offers an alternative source of legume protein. Our experiments involved intercropping the plant with various crops such as cassava, sweet potatoes and various indigenous and exotic vegetables. We observed a healthy crop and the yield was quite promising with approximately 40kg of *C. cajan* harvested from about an eighth of an acre cultivated within its first year of cultivation. The trials are expected to continue as we observe the continuous yield of this perennial crop.

COOKING STOVES

As part of our efforts to address the issues of energy conservation and creating a friendly cooking environment in homes, we engaged into spreading a model improved stove made of locally available materials. It utilizes fired clay bricks, sawdust and clay as the primary materials. Easy to produce and to replicate, we intend to encourage its adoption compared to the traditional three-stone stove commonly used in this region. A pilot project was carried out with 23 cooking stove units being built for seventeen families within the community. The feedback and reception for the stoves were very positive and encouraged us.

PERMACULTURE HUGEL MOUNDS

We experimented h ugel mounds to evaluate the technique's sustainability as a method of improving soil fertility and allowing for an intensive growing of vegetables. We constructed these mounds from the local farm waste in our fields and grew vegetables for the Isegeretoto Food Self-sufficiency Project. We observed healthier crops and a higher yield from the kale crop grown on the mounds compared to those grown conventionally. Further trials on this methods will be carried out to find out its feasibility as a solution towards food security, including trials to assess its performance during the dry months.

FINANCIAL REPORT

The financial year 2018 was remarkable in terms of contribution, coming to a total of \$ 53'097. An amount of \$ 26,497 was used for operational expenses while a grant of \$ 16,500 was in reserve to enable the organization purchase a parcel of land in 2019.

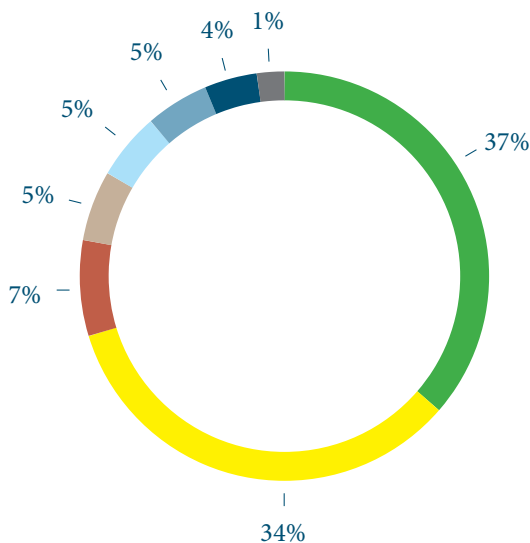


Table: distribution of expenses 2018

Projects	\$ 9'678
Personnel Emolument	\$ 9'010
Meals	\$ 1'963
Welfare	\$ 1'442
Administration	\$ 1'396
Repair, Maintenance & Improvements	\$ 1'319
Transport	\$ 1'121
Capacity Building	\$ 299

The direct project costs accounted for 34 % of the total expenses. These funds were used to pay for farm inputs, tools and equipment and the casual wage labor used during the projects and the programs. Isegeretoto School Organic Food Self-sufficiency Project accounted to the highest amount followed by the tree nursery.

The salaries and allowances accounted for 34% of the expenses. This was for the remuneration of the 7 permanent staff working at EMAUA.

The transport cost of hiring and fueling vehicles contributed to 4% of the expenses while the general administrative cost of running the organization was 3%.

EMAUA had also an opportunity to support other organizations working towards similar missions through a **Social responsibility fund (CSR) that was 2% of our expenses**. We assisted Kakamega Community Based organization (KCBO), that works towards the conservation of Kakamega Forest Reserve by running an indigenous tree nursery.

A 7% was used for providing meals to our workers, which raises the morale of the casual laborers particularly who are employed from the local community. We spent 1.8% to cater for the general welfare of the staff and volunteers and a further 3.6% was offered as short term loans to our staff to be repaid at friendly rates and terms.

OUR NETWORK

EMAUA is grateful to the individuals and institutions who collaborated on and contributed to various projects and programs in this period. This support came in the form of fundraising assistance, collection on inputs (such as seeds, Information technology equipment) and, the sharing of relevant knowledge and skills. The alliances enabled us to stretch our work as well as evaluate the effectiveness of our mission.

EMAUA Switzerland (CH) is our main partner in Switzerland, that organised the fundraising and activities related to the sensitization of swiss people about EMAUA's work.

Isegeretoto School (KE) hosted us on its land since EMAUA's inception, for our several projects.

Anglican Church of Kenya (ACK) and in particular Bishop John Okude of Katakwa diocese.

Some Community leaders (KE) in Teso North supported us since our beginnings: Oku E. Kanyonyo, Elizabeth Laini, Chief Masai, Chief Musa, etc.

The FiBL team in Kenya, under the Direction of Dr. Noah Adamtey, located at ICIPE Campus in Nairobi, who hosted us for a 5-day capacity building trip.

The Commune of Presinge (CH) that supported us since 2016, and invited us to give a presentation to their executive committee this year.

Euforia NGO (CH), that invited us to give 3 presentations in front of youth of Geneva county, at their event „Youth Take Over Le Palais des Nations“ at the UN Headquarters in Geneva.

Abraham Imbai (KE) guided us severally within Kakamega Rainforest and assisted us on several occasions with his immense knowledge about plants and animals of the region.

Mr. and Ms. Juma (UG) shared with us their deep knowledge about medicinal plants.

The Association „Un Repas Pour Notre Avenir“, with whom we'll organize the event The Meal in Fribourg each year from 2017.

The Good Festival, which invited us for free to a 4-day start-up incubation program at The Olympic Museum in Lausanne (CH) .

All people from Switzerland and worldwide who make our work possible through their support and encouragements.