

LOCAL RESOURCES FOR:
AGROECOLOGY – HEALTH – EDUCATION

ENAVA

LOCAL RESOURCES FOR BETTER LIVING



Activity Report
2017

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FOREWORD

EMAUA organization was started in 2015, in response to the apparent poverty levels of the local communities of Teso North sub-county, with a focus on the use of local resources in agroecology. The power of collaborative management as a means of boosting staff self-reliance and motivation has been a key factor in the creation of our organization. The progress achieved since then demonstrated rationality in the vision we had and therefore motivated us to persist in the same direction.

The year 2017 was one of a kind for EMAUA in many ways. We were granted our first – unrestricted – large donation, which could make us afford our first vehicle, as well as let us glimpse the possibility of purchasing a piece of land for EMAUA's future center. While a new vehicle allowed us to reach a larger youth audience about organic farming (17'000 youth), the prospect of owning land greatly strengthened our vision.

Other improvements included the setting up of an indigenous tree nursery, with an aim at sensitizing local communities about the importance of trees as part of the ecosystem. It should as well provide groups the opportunity to plant hundreds of trees in their farms in agroforestry systems. Besides that, we employed new staff members who enabled us to appreciably improve our administrative capacity in terms of accounts keeping and analysis, strategic planning, community teaching capacity and team management.

Finally, we are extremely grateful and we owe a big part of the success of our achievements to a number of mostly small private donors, who supported us with an interest of seeing our activities flourish, and therefore granted us lots of freedom in „how“ to achieve them. Furthermore, nothing would have been possible without the dedication, selflessness and strength of our team in Kenya, who gave much of themselves to translate our short-term vision into a reality.



Julien Kauer

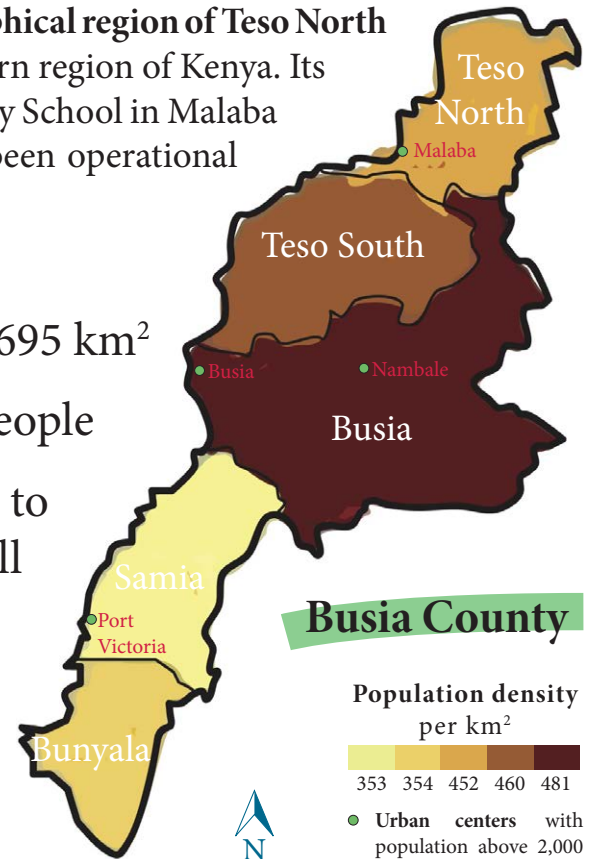
Chairman and founder

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 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.

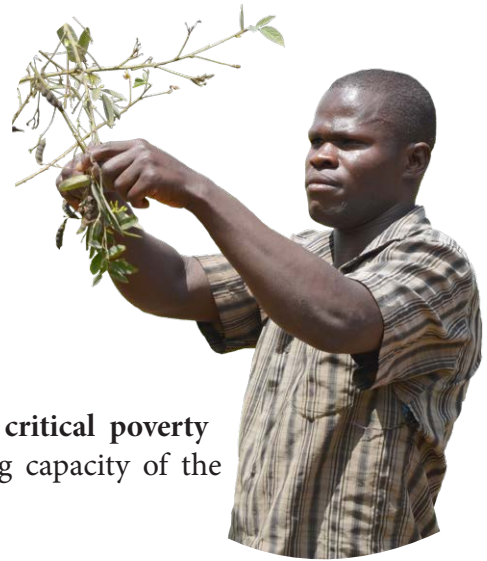
Total area: 1,695 km²
Population: 736,300 people
Tropical Climate: 1,200 mm to 1,800 mm average rainfall
Unemployment rate: 72%
Average monthly income (rural areas): 1,239 KSH (12 \$)



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 context of the situational facts of Teso North sub-county, EMAUA focuses 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

The year 2017 was marked by changes in our staff as well as the commencement of some new projects. Our community education program managed to reach 17,000 people which was made possible using our first motorbike. We also started an indigenous tree nursery, completed the construction of our „Grand Hut“ and made major improvements in our facilities including the installation of a water and solar system.

Key:

Switzerland : CH

Kenya : KE

JANUARY

Community Education program starts with 15,000 students target

FEBRUARY

Adams joins EMAUA
Purchase of first motorbike

MARCH

Start of 3rd year for **Isegeretoto project**
Finishing of Grand Hut structure

APRIL

Launch of **tree nursery** project with target production of 25,000 tree seedlings

AUGUST

Start of 2nd season for Isegeretoto Project

JULY

Délémont Conference (JU, CH)
1st season harvest for Isegeretoto project

JUNE

+8K people reached in **Community Education Program**

MAY

Hosting of two swiss volunteers for a month

SEPTEMBER

EMAUA hosts **The Meal 2017** (5th edition) in Fribourg (CH) for the first time

OCTOBER

Community Education reaches 17,000 people
Participation to Good Festival, Olympic Museum, Lausanne (CH)

NOVEMBER

25,000 tree seedlings production achieved
Participation „**Youth Take Over Le Palais des Nations**“, UN, Geneva (CH)

DECEMBER

Visit of FiBL's organic farming long term research in Nairobi
EMAUA's yearly conference in Fribourg (CH)

TEAM AND ORGANIGRAM

EMAUA's activities are executed by a combination of 7 employed staff, casual workers and occasional volunteers. Our intent is to engage the locals and develop them to be able to handle administrative and project responsibilities.

We strongly believe in leveraging our peoples existing strengths and capabilities while inspiring them to perform to their full potential.

GENERAL ASSEMBLY

ADMINISTRATION

- Management/Finance
- Communication/Fundraising

PROJECTS & PROGRAMS

- Isegeretoto Organic Food Self-sufficiency Project
- Community Education
- Tree Nursery
- Research & Developement Projects

WELFARE

- Housekeeping
- Volunteers

EMAUA'S TEAM

Julien Kauer *Chairman and founder*

Adams Maase *Operations secretary*

Michael Odieka *Field manager*

Christine Tata *Welfare*

Evans Chemiat *Vegetables production*

Leonard Aserwa *Tree Nursery*

Maureen Etee *Accountant*

John Omonia *Collaborator*

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 since our target regions have a prevalence of low income earners.

In 2017, our key activities were: **Community Education Program, Isegeretoto School Organic Food Self-sufficiency Project, Indigenous Tree Nursery, Research and Development.**

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

Our community education program provides us a platform to interact and share the knowledge, skills and techniques we have learnt with the community. These forums have provided us with insight on the issues that our organization has the potential to solve.

The positive reception we received from our visits in the initial stages encouraged us to seek a broader audience for the next phase of the program. We put more focus on education **in 2017 and managed to reach 17,000 people** compared to 2000 people reached in 2016.

LOCAL SOLUTIONS FOR GLOBAL PROBLEMS

The guiding theme for the 2017 community education program was „Local Resources for Better Food Production“. Our approach involved formulating an audience-friendly method of disseminating information in short sessions, where we taught viable techniques for small-scale organic farming through the use of available local resources.

Our main subjects in the short forums 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 strategy focused on reaching the majority of our audience to fit the relevant audience. We conducted one-hour interactive sessions with some adult groups in the community as well as committed team as well as been key factors in the

aching **the youth in secondary and primary schools** who audience. This involved formulating the information and visiting schools from within the region for a session. We also had a number of engagements with churches and self-help groups. Having a committed team as well as the acquisition of a new motorcycle have been key achievements of this program.





COMMUNITY EDUCATION

J. Kauer engaging students at Kakolong primary school. In 2017, we managed to engage 17,000 people in forums organized in churches, self-help and other community based groups. Our main focus was on pupils from primary schools.

ISEGERETOTO ORGANIC FOOD SELF-SUFFICIENCY PROJECT

Isegeretoto Organic Food Self Sufficiency Project went through its third year of operation in 2017. The project was conceived as a mutual benefit partnership between Isegeretoto school and EMAUA and it involves the use of the school's land to produce food as well as host EMAUA's place of work. We conducted farming activities on 8 acres with our main intent being to model a school farm utilizing local resources to produce healthy organic food for its pupils and staff. Other objectives included reducing the cost of food incurred and conducting on farm research and trials of various agroecology techniques.

LOCAL RESOURCES FOR BETTER FOOD PRODUCTION

	Need	Supply	S _p rate
Maize	5.6	1.07	23%
Beans	1.5	0	11%
Finger Millet	0.35	0.09	48%
Sorghum	0.35	0.04	35%
Cassava	0.14	0.03	36%
Wheat Flour ¹	1.99	0	0%
Rice ¹	4.14	0	0%
Meat ¹	1.72	0	0%
Milk			0%
Tomatoes ¹			0%
Onions ¹			0%
Cabbages	0.72	0	0%
Kales	0.5	0.36	58%
Cowpeas	0.46	0.44	76%
Tea Leaves ¹		0	0%
Cooking Oil ¹	4.20	0	0%
Salt (kg) ¹		0	0%
Total Rate			19%
Production Rate			27%

Our agroecological approach involves the use of local resources for soil fertility, pest control and post-harvest preservation of farm produce. We integrate modern and indigenous techniques to produce cereals and vegetables in our rain fed system. The mexican sunflower (*Tithonia diversifolia*) – a wild shrub that is found in abundance in the region – has been valuable for use as a green manure and as an ingredient in our biological pest control solutions.

In terms of general production, the project experienced a 36% decrease compared to 2016 in the crops that are producible. This reduction could be attributed to a harsh second season in terms of weather (heavy flooding in our fields resulting in the loss of 2 acres of beans and green grams). The self-sufficiency rates are calculated by comparing EMAUA's production with the school's need of feeding 280 pupils and staff in 2017.

The project has however continued to be of great value in sustaining our partnership with Isegeretoto School. It acted as a teaching and sharing tool with the local community as well as allowing for our research and development trials. We are looking forward to an increased yield as we continuously make improvements in our methods.

Table 1: Isegeretoto's Food self-sufficiency rate 2017

The table compares the school's needs (N) with EMAUA's food production (P) in order to achieve a self-sufficiency rate (S_p). The total rate (19%) is the self-sufficiency rate achieved when considering all school's needs, and the production rate (27%) 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.

Key:

N: school's needs in 2017

P: production by EMAUA

S_p: production rate compared to the needs

I_{p 16/17}: percentage increase between 2016 and 2017

TREE NURSERY

Part of our mission is to encourage agroforestry and environmental rehabilitation through tree planting. Our approach involved the establishment of a tree nursery to provide for much needed saplings. We opted to focus on indigenous species of trees and plants to complement the exotic species that are found in plenty in most of the tree nurseries in the region.

The year 2017 was the introductory year for the project, with an ideal target of achieving 25,000 seedlings for transplanting annually. We managed to produce 15,000 viable seedlings that were donated to farmers and schools.

INDIGENOUS TREES FOR BETTER REFORESTATION

Our team's visit to the World Agroforestry Center in Nairobi and Kakamega forest in 2015 challenged us to pick up a more practical approach to conservation. This project started with a small bed of about 1,000 seedlings in 2015 with the aim of improving our agroforestry systems in the Isegeretoto Project. However we experienced demand from the local community, especially in a variety of indigenous species we had. This region has suffered a large reduction in tree cover with factors such as, the increasing needs for energy and farm land related to population growth.

Our strategy for this project has so far been to:

1. Produce viable tree seedlings, with an intent to have indigenous species as a majority of our nursery stock.
2. Incorporate agroforestry as part of our Community Education Program.

The integration of indigenous species in agroforestry systems presents benefits such as resilience of farm systems, protection of water catchments, a source of alternative medicine and supporting biodiversity. They are however overlooked because of the various commercial benefits presented by a few exotic species. We are continuously aiming to have our project contribute to an increase of these species as part of our ecosystems in the years to come.





RESEARCH & DEVELOPMENT

We are driven by the conviction that there are existing solutions to the challenges faced by communities. However, these have been inaccessible to the people who most needed them. Reduction of complexity and increasing accessibility of relevant technologies are at the center of EMAUA's mission.

Our methodology involves identifying issues, exploring existing solutions and adapting technologies, with a focus on local resources. The open source movement and the internet have been valuable resources towards realising this. In 2017, we focused on improved cooking stoves and on agroecological on-farm trials.

IMPROVED COOKING STOVES

The predominant means of cooking within the local community in our vicinity involves the use of firewood as fuel. Despite advancements in appropriate cooking technologies, there is still a prevalence of the three-stone cooking stove amongst low-earning families. This system has disadvantages such as inefficient use of firewood, excess smoke that presents health risks and the fire hazard present in grass thatched roofs. Our continuous efforts in spreading information and techniques that improve tree cover lead us towards researching on suitable solutions.

We collaborated with Mr. Kauer (Ing. Mec.), a visiting swiss volunteer, to explore various solutions that would work within the community. The aim was to formulate a solution that would be constructed using local materials and to reduce cost of construction, smoke emissions and fuel consumption. A few prototypes made of various materials were built and were to undergo twelve months of testing. We hope to start rolling out our improved stoves in the near future. This project also aims to train willing community members to master this method.

ORGANIC NO-TILL

Organic no-till is a innovative method, that removes tillage, reduces weeding, increases soil organic matter and fertility. Our aim is also a general reduction of labor per unit of production. We conducted an on-farm experiment on millet, sorghum and amaranth. The treatment involved growing the crops in a field that had mature *Desmodium intortum* as a cover crop. Our observations showed that the crops growth and yields were diminished compared to those without the treatment. We attributed this result to the competition for nutrients and light caused by the mature cover crop.

MAIZE TRIALS

Results from scientific studies on the use of *Tithonia diversifolia* as a green manure applied to maize crops have demonstrated the plant as a viable fertilizer. This however has shown to be unreachable for small-scale farmers due to the huge quantities of biomass involved (5 T dried matter/ha). We carried out an on-farm trial to observe the growth and yields using lesser amounts (XXT dried matter/ha). The observed yield were about xx% higher than the fields without T. *diversifolia* application. Thorough research to find the optimum amounts of T. *diversifolia* need to be carried out.



IMPROVED STOVES

E. Chemiat building an improved stove prototype as (standing from left) Oku Kaunya (Patron of Isegeretoto School), M. Obwa, J. Wesa (Headteacher of Isegeretoto School), J. Kauer and O. Kauer (visiting volunteer). Mr. Kauer (Ing. Mec) ingeniously developed two prototypes of rocket stoves during his visit at EMAUA.

GENERAL TOPICS

Critical improvements were made possible in our activities thanks to some capacity and facility improvements done this year. While visiting two major organic farming research institutes, we gained insights on practical ways of conducting participatory on-farm research. In addition, minor facility improvements enabled us to greatly improve areas of our activities.

CAPACITY BUILDING

In December 2017, a team of four of our staff visited the Research Institute of Organic Agriculture (FiBL) and the International Centre of Insect Physiology and Ecology (ICIPE) project in Nairobi, Thika and Meru. The project, „Farming Systems Comparison in the Tropics“ (SysCom), aims to establish a scientific basis for discussions on the performance and potential of conventional and organic agricultural production. The project involves participatory on-farm research in tandem with the scientific research.

During the visit, the team got an opportunity to visit the research sites as well as interact with farmers collaborating on the project. They received further learning on various organic agriculture techniques such as: effective composting and use of green manures, vermiculture, integrated farming systems and methodology of conducting effective on-farm trials and experiments. This trip presented an opportunity to forge a partnership with organizations working towards similar goals as EMAUA.

TRANSPORT

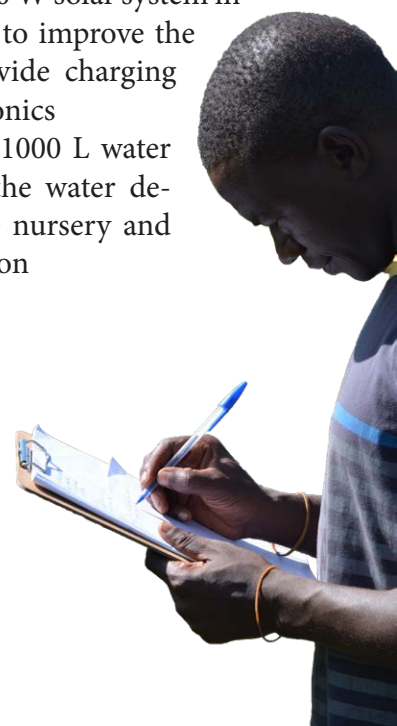
We acquired a 200 CC motorcycle in February in order to improve our transportation capacity. This acquisition was a major factor in our achievement of reaching 17,000 people through the community education program in 2017.

FACILITY IMPROVEMENTS

We completed the construction of 800 sq. ft, grass thatched house which we named „Grand Hut“. This building will serve as a guest house for volunteers and visitors. The project started in 2016 and was focused on indigenous architecture and sustainable building techniques.

Other minor projects that we undertook include:

- Installation of an 80 W solar system in our place of work to improve the lighting and provide charging facilities for electronics
- Installation of a 1000 L water tank to assist in the water demand for our tree nursery and vegetable production



FINANCIAL REPORT

The financial year 2017 was marked by a total contribution received of \$ 20,376, which was an 18% increase compared to \$ 17,219 received in 2016. There was a marked increase in the costs geared to improve the operational capacity of the organization, compared to previous years. The expenses incurred came to a total of \$ 20,212, leaving a positive balance of \$ 164 at the end of the year.

This report contains a summary of the expenses incurred by EMAUA CBO over the year.

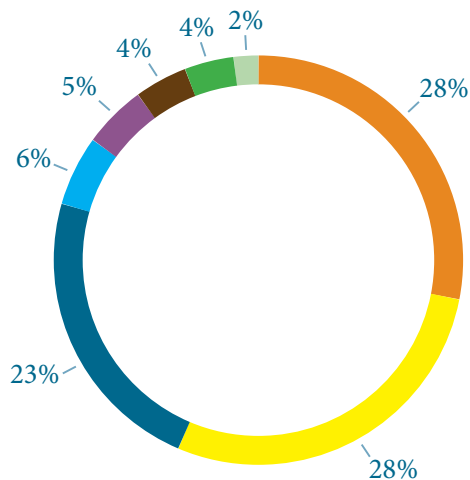


Table: distribution of expenses 2017

Salaries & Allowances	\$ 5,736
Projects	\$ 5,698
Repair, Maintenance & Improvements	\$ 4,645
Transport	\$ 1,139
Administration	\$ 991
Capacity Building	\$ 814
Meals	\$ 767
Welfare	\$ 422

The direct project costs accounted for 28% of the total expenses. This amounts were used to pay for inputs, equipment and tools, and the casual labor used in carrying out the main projects and programs. Isegeretoto School Organic Food Self-Sufficiency Project accounted for a bulk of this expense followed by the Tree Nursery project.

The salaries and allowances incurred by EMAUA for its permanent staff contributed to 28% of the expenses this year. This was the largest cost element incurred and is one of the major contributors to the organization's fulfillment of its objectives.

The activities aimed at **improving our operational capacity** contributed to 23%. These costs included the following projects: the purchase of a 200 cc motorcycle, the completion of the „Grand Hut“, the installations of a water system and an 80 Watt solar system. These projects contributed to creating a better work environment as well as increasing our efficiency of work.

Some 4% of our total expenses went towards a **capacity building** of our staff. This included a 5-day trip to Nairobi, Thika and Meru for four of our staff. This activity improves the organization's staff ability to effectively perform their work.

The total expense towards providing **meals for our staff** and casual laborers accounted for 4% of the total expenses. A further 2% was spent towards the **general welfare** of the team and volunteers we received during the year. The **transportation costs** accounted for 6% of the total expenses which included fuel and the hire of vehicles. Furthermore, the **administrative cost** of running the activities in Kenya came to 5% of the expenses.

We are grateful to our donors for their contributions and their support towards achieving our mission.



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.

Isegeretoto Association (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. Kanyia, 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 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 around the world who make our work possible through their support and encouragements.

EMAUA is a community based organisation based in Teso North, Kenya, that has an aim at increasing the self-reliance of the low-earning communities of its region. With regards to that, it adapts and develops techniques based on the use of free, local resources and spreads them among the community.



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EMAUA

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