

MAASAI ECOAGRICULTURE PROGRAM



Serengeti Preservation Foundation
Serengeti Watch



“Ecoagriculture is an approach to managing landscapes specifically to meet three goals simultaneously and sustainably: conserve biodiversity and ecosystem services, provide agricultural products, and support viable livelihoods for local people.”

– Ecoagriculture.org



Ithaca, NY USA
info@serengetiwatch.org
607-351-1120



Arusha, Tanzania
meshilieck@gmail.com

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Wildebeest migration.. Photo: Natgeo.

Home to the largest terrestrial migration on earth, Serengeti means “endless plains” in the Maasai language. But that is far from the case now. The Serengeti is an island in a sea of people. Both the ecosystem and local communities are facing growing impacts.

A large team of scientists from seven countries studied data from 40 years and found,

“the activities of people have caused extreme changes to the habitat. It has significantly reduced the amount of grass and, because of farms, settlements and fences, the landscape has become fragmented – this means animals can’t move freely to find resources or mate.” -Joseph Ogutu



Here, Serengeti denotes the Serengeti National Park and protected areas around it, such as Ngorongoro. The Maasai Mara Reserve in Kenya is part of the larger ecosystem but is not covered in the program.

Growing Pressure on the Ecosystem



Cattle in Kenya's Maasi Mara Reserve.

The Serengeti ecosystem is under threat, primarily due to pressures from people and climate:

- Wildlife is being squeezed into the core of the Serengeti, increasing vulnerability to droughts and decreasing soil carbon storage and nitrogen fixation rates.
- Livestock movement outside the Serengeti and incursions into the park bring disease transmission and increase land degradation.
- Water catchments outside protected areas and are being damaged by deforestation and sedimentation.
- Climate change is already causing more frequent and devastating droughts alternating with severe flooding.

Maasai Mara - a case study and warning

Kenya's Maasai Mara Reserve, the northern segment of the Serengeti ecosystem has lost nearly 70% of its wildlife.

A study in 2016 concluded that this was the result of human and livestock growth, including fencing.

This has essentially collapsed the seasonal migration of wildebeest in the Loita Plains in Kenya, and has reduced the incoming migration to the Mara from Tanzania by 73%.

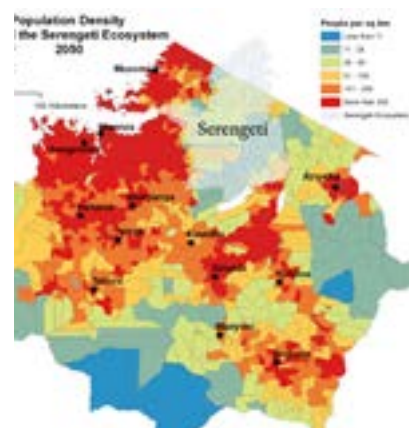
GROWING PRESSURE ON PEOPLE



Those living around the Serengeti face increasing threats and hardships due to many of the same factors, exacerbated by the needs of more and more people occupying limited space.

Population growth in Tanzania is one of the highest in the world, and growth rates around the Serengeti are among the highest in Tanzania.

An estimated 3 in 10 women in Tanzania get married as children, making it home to the 11th largest number of child brides worldwide.



Projected population around the Serengeti in 2050.

According to the latest census, In one decade, from 2012-2022, Tanzania's population grew by 37%

Maasai at a Crossroads



Growth of people and livestock

Limited land

Food insecurity and poverty

Land degradation

Climate change & Drought

Conflict over land use

“Reducing herds is a reality pastoralists have to grapple with. Because of the bulging population space is shrinking, and so adaptive strategies have to be sought and herds have to be reduced to manageable sizes.”

- Michael Santeto,
Pastoral Development Network
(Maasai, Kenya)

Livelihoods and Culture at Risk

WEATHER NEWS Drought Kills More than 62,000 Animals in Tanzania's Simanjiro District

By IANS - 15 January, 2022 - TWC India



Tanzania: Drought Kills Over 98,000 Livestock in Tanzania



AFRICA Over 300,000 animals killed by drought in Tanzania in five months

DAR ES SALAAM, Feb. 4 (Xinhua) -- At least 306,358 animals, including cattle, sheep and donkeys have been killed by drought in Tanzania in the past five months, cabinet minister said on Friday.

Periodic droughts have always been part of life in East Africa, but they are now more frequent and intense.

Science is sounding the alarm. Failed rainy seasons, previously occurring every five or six years, are coming every two to three.

Water is becoming harder to find, and herders must go farther to find it, often encroaching on agricultural land and protected areas.



Maasai cultural identity and traditional life is being eroded due to changes in land use, climate, and restrictions on grazing. For many, it's a radical change from pastoralism to agriculture.

Land Conflict



The government says Maasai threaten protected areas due to an increase in people and livestock, that tourism is vital for the country's development.

Maasai say they have always lived in harmony with wildlife and are good stewards of the land.

There is insecurity among Maasai, with continued threats of evictions, particularly from the Ngorongoro Conservation Area.

“The situation is at a tipping point, stakeholders needed to stretch their minds to the limit to come up with solutions..”

– Ngorongoro District Commissioner

Above: Maasai confront government officers over land eviction, resulting in violence. This resulted in an international outcry against “fortress conservation.” Conservation is increasingly being seen as treading on people’s rights and livelihoods.

Livestock around and in protected areas are regularly confiscated and sold by the government. Local people should instead be given instruction in how to reduce and manage herds to give them more nutrition and income.

Our Program



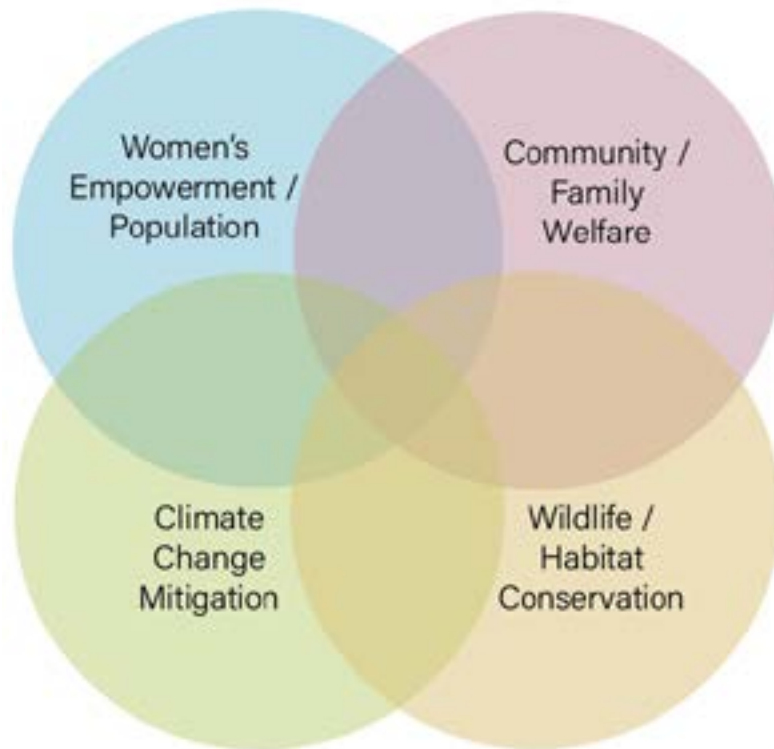
A program by and for Maasai to address food security, land use, conservation, and cultural identity.

This program originates within the Maasai community. Meyasi Meshilieck is a Maasai with a Science Education degree and years of experience as a teacher and department head. He owns his own dairy farm. And he is the Director of the Serengeti Preservation Foundation, a Tanzanian NGO he founded in 2013.

The program involves Maasai women as both as trainees. They will in turn become involved in training other women. Training is be done in the Maa language



Overall Goals & Strategy



A holistic ecoagricultural program to promote human welfare and biodiversity through improved dairy cows, land management, and women's empowerment.



The program builds on ongoing community conservation programs we've been conducting for the past 10 years.

Objectives & Impacts

Reduce Herd Size



Increase Milk Production



Empower Women



Enroll More Girls in School



Reduce Land Degradation



Mitigate Climate Change



Conserve Biodiversity



Preserve Cultural Integrity



Phase I: Trial / Completed



Phase I, a proof of concept, has been completed and shows that this concept is sound.

Over the past five years, Serengeti Preservation Foundation Director, Meyasi Meshilieck, independently developed a pilot project on his own farm outside of Arusha.

He sold his herd of traditional cattle and replaced them with higher milk producing breeds. Issues with forage and water sourcing were worked out, and he built a thriving small-scale milk production facility.



Meyasi grew up herding his family's cattle, then earned a degree in science education and served as the head of a science department.

Phase II: Training/Evaluation



The goal of this phase is to identify strengths, weaknesses, opportunities, and threats and provide data for scaling up to a larger and more inclusive program.

It will first bring Maasai women to the training center for a two-week course in how to take care of improved breeds, grow drought resistant forage, and other topics.

Afterwards, we will give them cows with which to implement what they've learned. This will provide feedback on training, and it will immediately begin giving benefits to the women's group as they adopt new practices.

Community radio broadcasts will promote the program and encourage discussion.



Serengeti Preservation Foundation has been working with the Olmaa Women's Group in Loliondo, providing bee hives for honey production.

Ten women from the group will travel from Loliondo to Saravu Farm near Arusha. When they return home, this group will provide a way to demonstrate their knowledge and a means of disseminating information to the wider community through demonstrations and radio broadcasts.

Phase II: Training Goals & Activities

Women as Change Agents

A recent study of Tanzania's dairy sector concludes that women should become involved, trained and empowered as entrepreneurs. Women in East Africa do much of the dairying. They look after the cows and calves, keep them well fed and watered, and milk the animals. Among Maasai, men own the cows, women own the milk. They often sell milk to friends and neighbors, or to small-scale traders who come to the door. Enhancing this role of women is important.

Training Facility

The facility will be at Saravu Farm, in Kisongo near Arusha. It is a working farm in a local Maasai community. Traditional Maasai houses will be constructed to accommodate the visiting women, so they will be in familiar surroundings. Transportation and all expenses will be included. The facility will cook Maasai food with the help of Mr. Meshilieck's mother and neighbor women. Neighbors of the farm, trained by Mr. Meshilieck, will be present and will help build confidence in the trainees. It will be an ideal setting in which to learn and share ideas.

Hands-on Training

Participants will learn the care and feeding of both existing and new cattle breeds. They will milk cows in the farm to compare the amount of milk from their cows to improved breeds. The curriculum covers: (1) How to add more value to cows they already have (2) How to work with improved breeds. (3) Forage production. (4) Water supply.

Training into Practice

There are three areas where women will put their new knowledge into practice:

- Upgrade their current milk production.
- Apply techniques to improved breeds.
- Teach women in other communities through meetings and radio broadcasts.

Cows for the Women's Group

Following the training, SPF will purchase and transport two high quality cows, (one Ayrshire and one Friesian) to the Olmaa Women's Group, who will feed and care for them, applying what they've learned.

Math and Accounting Training

A basic skills course will give training in basic math and record keeping related dairy farming to members of the women's group.

Monitoring & Evaluation

The main goal of Phase II is to evaluate the training, the ability of the women to put their new knowledge into practice, and social and cultural issues that may arise. Progress will be monitored over several months.

Community Radio Outreach

Radio is an integral part of the project. We have been using FM Loliondo Radio, a Maasai language station, for other programs. It will allow us to introduce the concept of improved cattle breeds and get feedback from the community. Women will be participating in live talk shows, especially in the Radio Program known as Community & Conservation where they will speak about the role of women and what they've learned.

Media

The Director and Chief Editor of Mwananchi Communications, Tanzania's leading media group and publisher of the country's foremost newspaper, The Citizen, expressed keen interest in the program and pledged media coverage.

SPF and Serengeti Watch have conducted journalism seminars in Tanzania, will help underwrite Mwananchi's reportage.

Appendix



More on Overall Strategy and Goals

Improve family nutrition, health, and income

Drought and climate change combined with large herd size is a threat to the long-term welfare of pastoralists. This program allows families to increase production while keeping fewer live-stock, resulting in a net increase in food supply and a lower risk from drought and human-wild-life conflict. Dairy production from improved breeds will exceed native breeds and directly affects family nutrition. Sales from excess production will provide income to purchase other food supplies and send children to school.

Empower Maasai women to influence family size and education

A key goal is to increase the power of women to make family decisions. A U.N. report concludes that women have a vital role to play in climate action and conservation. And significantly, a recent study of Tanzania's dairy sector concludes that women should become involved, trained, and empowered as entrepreneurs.

Especially important is the impact on family size and thus overall population growth. According to a survey conducted by Serengeti Watch, SPF and Pathfinder.org in Loliondo, there is evidence that women want to have fewer, better educated children. And girls who attend school are less likely to get married early and become pregnant.

Mitigate climate impacts on water, land, and food security

The program will allow families to reduce herd size and pressure on the ecosystem. Land degradation is a growing issue, especially with more

extreme weather. Fewer cattle will reduce this impact and help replenish organic content and carbon capture of soils. Whether it is zero grazing or a hybrid system with some herding, the amount of land, time, and water needed can be reduced.

Protect the Serengeti ecosystem

All of the above factors will also reduce pressure on the Serengeti ecosystem and protected areas surrounding it. Reducing the density of livestock, reversing land degradation, and moderating the growth of human population are key to sustainable conservation. And conservation is the key to generating income from tourism, which provides income and jobs for the country. Local communities need to, and hopefully can, benefit from this as well.

Create a model that can be replicated and scaled up

Phase III, the ultimate aim of this program is to use experience from Phase I and Phase II to expand the program rapidly into as many communities and areas as possible. This will involve the purchase and donation of new breeds of cattle and expanded training. The full rollout will involve ongoing training, monitoring, and evaluation, veterinary services, and marketing.

This program can also serve as model for other protected areas in Tanzania where similar threats are happening around the margins from growing numbers of people and livestock.

The government is confiscating livestock from these areas then selling them. It could instead introduce new practices and animals.

EVALUATION

There are many questions to investigate, and these fall into two categories: socio-cultural and technical.

The former includes the willingness to embrace change. The latter addresses the challenges of raising healthy and productive livestock.

1. Social and Cultural Questions

We will conduct in depth interviews with women in the group:

- How has this helped them?
- What problems have they had? What are their biggest challenges?
- Have they been able to get income from sale of the milk?
- How has this changed family life? Has their been resistance?
- Does this give them more decision-making authority in their household? In the community? What resistance have they felt?
- Do they want to continue and increase their herd size?
- What else is needed?

Survey of men and elders:

- What impact has this had on the family, economically and otherwise?
- Do they approve of having the women in charge?
- If there is any income, how will it be used, and who can spend it?
- If they continue with this, will they reduce the size of the overall herd?
- What advantages do they see in this system?
- How will this affect Maasai life and culture?
- What problems to they see?

2. Technical and Economic Questions

As one Kenyan Maasai related about his effort, "Though the hybrid animals have countless benefits they also come with an equal measure of challenges. For one, they require lots of care, plenty of clean water, lots of green fodder, silage and concentrates," Ngengi said. "They are selective on what they take, which makes running of the farm a bit expensive."

- Will one training program be enough?
- What kind of teaching materials are needed?
- What kind of follow-up needs to be done after the training?
- Can enough forage and water be provided for zero grazing?
- How will drought effect new breeds of cattle? Are endemic breeds better?
- Will there be problems with disease?
- Are there enough veterinary services?
- What is the net gain in milk production?
- What problems in providing foage, water?
- Are enough veterinary services available? What are costs for vaccinations and veterinary care?
- Can they maintain hygienic conditions?
- How will other families afford to purchase and care for cows?
- How can they sell more milk safely?
- How can they keep the milk fresh and free from spoilage?
- What is the market for milk sale?
- What additional services and facilities are needed to supply this market?
- Is enough water available? What about during droughts?
- What is the feasibility of breeding and selling cows.
- What security do they have from larger herds native cattle vs. improved dairy cows?



For more information, contact:

**David Blanton
Serengeti Watch,
607-351-1120
info@serengetiwatch.org**