

The Applied Nutrition Project of Eastern Kenya – An Initiative for Reducing Hunger and Malnutrition

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*»Give a man a fish and he will eat for a day.
Teach a man how to fish and he will eat his whole life«
Chinese Proverb*

ABSTRACT

Sustainable development is the only kind of development possible for help in the third world. Due to various historical, political, geographic and climatic conditions the divergence between those countries providing and those receiving help is so vast that donations of labor and/or money is simply not enough. Rather, communities have to be taught to support and develop themselves during the receipt of aid and especially after the help pulls out. It is our goal in this article to summarize one such »sustainable development« project. As volunteers for AMREF (African Medical and Research Foundation), we worked with the remarkable Makueni Applied Nutrition Project in eastern Kenya in the summer of 2001. Our job was to visit the various locations in this semi-arid and arid environment and to write a report on the situation of the diverse parts of the project. The Applied Nutrition Project (ANP) started in 1984 and serves as an excellent example of the significant help that can be provided to needy areas of the world with a multifaceted approach.

Introduction

AMREF

Before outlining the Applied Nutrition Project (ANP) we want to briefly introduce AMREF. *The African Medical and Research Foundation (AMREF)* started as *The Flying Doctors*, a fully staffed air-

borne rescue service in 1957. Sir Michael Wood (England), Sir Archibald McIndoe (New Zealand) and Dr. Thomas D. Rees (USA) founded it in order to provide to help for the miserable conditions encountered in Africa. AMREF now coexists with *The Flying Doctors* and is a NGO functioning on donations from bilateral

and multilateral institutions, private corporations, international organizations and individuals from Africa, Asia, Europe and North America. Although its headquarter is in Nairobi, *AMREF* has international offices all over Europe as well as in the United States¹.

AMREF's bold mission is to improve the health of the most disadvantaged people in Africa. Its program countries are the Sudan, Ethiopia, Somalia, Kenya, Tanzania, Malawi, Mozambique and South Africa, but the organization also actively helps people in other troubled regions such as Nigeria, Ghana, Sierra Leone, Namibia, Botswana, Zimbabwe and Zambia. *AMREF* enjoys a high organizational level and is thus very effective in easing the suffering of countless people. Indeed, it was internationally recognized for its achievements by receiving the prestigious *Conrad N. Hilton Humanitarian Award* in 1999. Out of 225 nominations of organizations from 53 countries, *AMREF* was recognized as the winner of this prize of 1 million, which in prestige and monetary value is only equaled by the *Nobel Peace Prize*².

- In order to reach its mission, *AMREF* focuses on five different program areas. All five are often implemented simultaneously because it is understood that a troubled area can not be helped with a simple one-sided remedy but only with caring coming from several different angles.
- The first area of focus is *Sexual and Reproductive Health*. Considering that the African continent was hit especially hard by the HIV/AIDS and tuberculosis epidemics, *AMREF* helps by targeting policy makers, service providers, community members and high-risk behavior groups.
- Secondly, *AMREF* focuses on *Child and Adolescent Health*, the key activity areas being child survival, nutrition,

school health, teenage pregnancies, childhood and adolescent illnesses.

- Thirdly, attention is given to *Environmental Health* especially to accessibility of safe water and sanitation. The treatment of malaria and cases of hydatid, a cyst of watery fluid formed by and containing a tapeworm larva is especially important in many regions of Africa. For this program area, the target groups are rural and urban communities, service providers as well as policy makers.
- *Health Policies and Systems Reform* is another important area of focus for *AMREF* since more often than not the roots of problems in the third world are a lack of organization and a high level of governmental corruption, especially in the educational and health sectors. *AMREF* addresses specifically governments and local health boards but also service providers as well as NGOs.
- Finally, *AMREF* is involved with *Direct Medical Help*. *The Flying Doctors Emergency Services* serves as a high quality air ambulance and rescue service throughout Africa. *AMREF* also provides rural laboratories, doctors and nurses for troubled regions¹.

Background of the Applied Nutrition Project

Project location

The ANP was developed as a component of the Kibwezi rural health scheme (KRHS) in the divisions of Mtito Andei and Makindu within the Makueni district, eastern province, Kenya. To be exact, the project is located 200 km south of Nairobi along the Nairobi-Mombassa highway in the arid and semi-arid lands of Kenya. The area is collectively known for its largest town Kibwezi. Rainfall in this region is highly erratic in terms of onset, distribution and intensity with the poor annual average of 500 mm, making

the area permanently food-insecure. Indeed, the historical records indicate that a good harvest can only be expected once every three years.

Population

The peoples of this region belong mostly to the Akamba ethnic group. Makindu and Mtito Andei divisions have a total population of 106,200, almost 40% of which are women of child-bearing age and children under five years of age. These two groups are most vulnerable to malnutrition and for this simple reason they have been the project's main target groups from the start. The average household size is 7 with a male/female ratio of 11:10³.

Health

There are major health problems in Kibwezi. The most severe ones include malaria, acute respiratory tract infection, schistosomiasis, sexually transmitted disease (STD), skin disease, diarrhea and of course malnutrition³.

Nutrition

Due to a complex web of factors, Kibwezi experiences chronic malnutrition. There – as well as in any other area of malnutrition – it is difficult to say what exactly are the causes of malnutrition but it is surely associated with a collection of natural as well as man-made factors. Climate conditions like unreliable rainfall, poor soils and frequent droughts are Nature's negative dispositions for the area. Among the man-made factors, low level of infrastructure, inadequate health services as well as socioeconomic, agro-ecological, demographic and educational characteristics further increase the likelihood of malnutrition, especially for children under five years and women of child bearing ages. A recent study of the area thus showed that 39 % of the children between 2 and 36 months were stunted and 4% were wasted⁴.

The project

As a result of the above causes the poverty level within families in Kibwezi is high, observable indicators being hunger, malnutrition, frequent diseases, poor accessibility to safe drinking water, poor housing, low educational level and high percentage of female households. The ANP addresses both the immediate and underlying causes of malnutrition in Kibwezi; again its main objective is the improvement of the nutritional status of children under five years of age and women of childbearing ages. In 1984, AMREF started a nine-month emergency supplementary feeding program against food stress for children under five years of age, benefiting a total of 10,000 children. Soon after, in 1986 the ANP was created due to an urgent need for a long-term and integrated approach.

The objectives of the ANP are:

- Improving household food security
- Increasing income at household levels
- Improving feeding practices for children under five years of age
- Increasing accessibility to water at the household level

In order to achieve these objectives, the ANP applies a participatory approach. In the beginning, already existing groups of the community identified their specific needs and problems. They were then provided with education, information, advice on the implementation of project activities as well as monetary loans. From the start, the community *itself* functioned as the main decision-making body⁴.

Objectives and Strategies

Improved household food security at the household level

1. Small livestock production

Poultry and goats are more drought resistant than crops, more accessible to

the household for food and income and are the main coping mechanism during times of food stress. Therefore, improved (stronger and healthier) cockerels and bucks have been made available by *AMREF* to individual women of the communities for cash or credit. Besides making improved animals available, *AMREF* trained government officials, who in turn trained community members on selective breeding, management and disease prevention of the animals². Examples of the successful introduction of stronger, more resistant goats can be seen in the Kai community and the Kanini Kaseo women group, both in the Makindu division. An improved buck can breed with up to thirty females, making the population bigger and stronger after only one generation. Not only are the produced animals capable of providing more milk and meat; they also sell for more money at the market place. Thus, one of the farmers stated that the selling prizes for the animals have doubled within one generation from 1,000 to 2,000 KSH (Kenyan Schilling). Regarding poultry improvement, changes can easily be observed with the indicators of size and quantity of the eggs.

2. Promotion of drought resistant crops

Before the ANP was started, farmers were growing mostly maize and beans. The harvest of these crops are not bad, has cash potential and is tasty. However, these crops are much less hardy during times of rainfall. With this in mind, the ANP has created awareness on the importance of growing sorghum, millet, cow peas, green grains and cassava instead, all of which are more tolerant to poor soils and little rainfall. Individuals and women groups were trained on storage, preservation, crop and seed husbandry and community bulking. Furthermore, women have been supported in the establishment of »seed banks«³.

As part of our research we visited the Kanini Kaseo women's group, who had

approached *AMREF* for the implementation and completion of a »seed bank«. An initial 60 kg of green grains and 60 kg of cow peas were loaned to the group, the seeds were then divided among the members and planted. A fraction of the return seeds were collected in a »seed bank«, which acts as a security system in times of drought. Again, *AMREF* provided training for optimal selecting principles as well as the prevention of storage pests. A member stated that the group was easily able to cope with droughts of up to three years. Also, as attested by another, seeds could be sold to other non-members in the community in times of harvest failure. It was reassuring to see this »simple« idea of a »seed bank« to work so well.

3. Food storage

The Kathekani food store is located in the extremely arid area of Mtito Andei division and represents another measure for improving food security. Due to the type of soil in this area, the sporadic rain that does fall cannot be absorbed and causes soil erosion. Started by 45 people, this community-based project was paid for by extensive fund raising as well as a loan from *AMREF*.

The food storage has helped the community because less time has to be spent by people searching for seeds. It is also a way of assuring the stability of prices in times of drought, since they are bought at a cheap price and stored until severe weather conditions. Most importantly, of course, the storage provides added security in terms of adequate seeds for the area³.

According to members of this project, there has not been a satisfactory harvest in three years and the prices of grains on the market have risen dramatically. During the drought of 2000, a significant amount of livestock was lost since rivers and water sources dried up and the price of 1kg of maize increased from 8.10 KSH

to 20 KSH. Considering that only one in every thirty people has a steady income, it is not surprising that Kathekani community was especially affected by the drought. As a consequence, many children have dropped out of school since their priorities became the acquisition of food and the raising of money.

For the implementation of the Kathekani food store, the 45 members had to pay an initial membership of 100 KSH. Added to that cumulative money was a monthly membership fee of 20 KSH, a fund of 23,000 KSH raised by the members and a generous loan from *AMREF* of 200,000 KSH. The latter loan allowed the purchase of 246 bags of maize. The group built the structure of the building with their own bricks as well as materials provided by *AMREF*. Once the food store was completed, the situation within the community changed noticeably. The people are now able to sell their harvest's surplus as well as buy seeds at a reasonable price in times of poor harvest.

4. Food for work

Before 1999, the Kenyan government's strategy of coping with malnutrition and starvation was the direct supply of food to needed areas. Led by *AMREF* in February 2000, this approach now focuses on the *most* needed areas. And such target areas- the poorest and driest- are no longer supplied with direct nourishment but rather introduced with a new program called »Food for Work«.

In April 2000, the program started by sensitizing the most needy communities to design useful and viable projects for the respective areas. The 43 projects include tree planting, rehabilitation of cattle dips and water sources, the construction of school classrooms and irrigation channels as well as grain stores. The different kinds of work, all of which benefit the community are rewarded with food⁴.

The program as it stands now, covers a total of six divisions, within which 43 different community projects are functioning. ‚Food for Work‘ not only alleviates the immediate problem of hunger in times of food stress, but also speeds up and encourages the socio-economic development and infrastructure of the respective communities. The full implementation of the project is estimated to benefit respectable 10,864 households (65,000 people) between the months of July and December 2001.

Increased income at household level

Another part of ANT is based on the support of *income generating activities* (IGAs) within women groups, aiming to increasing women's income and subsequent purchasing power. The IGAs supply another source of income, allowing members of different groups to hang on to their food and livestock in times of severe droughts.

First, awareness is raised on the importance of income generation for already formed groups. After this initial step, the groups are trained on leadership, team building and decision making. Loans are given by *AMREF* to a group, which provide collateral for members. These loans are then used by individuals as start-up capital for small businesses such as selling paraffin, cereals, vegetables and livestock. One woman even stated that she used the money for purchasing a plough that she rents to other community members. Another woman of the Kanini Kaseo group said, »my harvest has increased four times with a second ox that I was able to buy. Some money also went into my husband's business.« With such businesses, the majority of the group was able to easily cope with the drought of 2000. In case of emergencies, the group has put aside a fund of 5,000 KSH³.

Furthermore, the IGAs have improved the educational level of the community,

as was attested by one group member, who, with the sale of paraffin was able to send her children to primary school and pay off most of her loans.

With the success of some of the pioneering groups, others have been encouraged to follow the example; this is the case with one group called Kanini Kaseo B. It is given direct and practical advice by already existing groups.

Improved feeding practices of children under five years of age

In 1986, the Kibwezi nutrition survey revealed very poor feeding and weaning practices in the Kibwezi area. Most of the mothers breast-fed for over two years and 38.5 per cent of them supplemented breast feeding either too early or too late. In addition, the weaning foods were often low in energy and nutrient density and the feeding of children was infrequent. Food was often prepared in unsanitary conditions, exposing the children to diarrhea, and it was common for mothers to withdraw foods such as milk during episodes of measles and diarrhea.

With an awareness of such problems, information on proper breast feeding and weaning practices was given to mothers and women groups by traditional birth attendants (TBAs) at health facilities during child welfare workshops⁴.

Increased accessibility to water at household level

Drinking water – one of the most basic human necessities – has been another priority for the ANP. Sources in Kibwezi are few and often very distant from the majority of households, forcing women to spend a long time searching for water. This endeavor keeps them away from home, decreasing the quality of care and feeding for the growing child. In addition, there is a general problem of unsafe drinking water, leading to diseases such as diarrhea or schistosomiasis, which in turn

reduce food uptake and contribute to malnutrition.

The *Kai water project* is a very positive step forward and away from malnutrition. On October 22nd 1999, this project was set into motion when the digging of a five-kilometer trench for water pipes was started. The digging was finished before Christmas 1999 and clean water flowed at Kai on January 25th 2000. By March 1st 2000, water was distributed to the people. The water originates from Makindu town, 15 km away and is now distributed at three kiosks, each outfitted with a 25-m³ water-tank. The kiosks are staffed with one attendant for each and water is available for the price of 2 KSH for 6 liters. Besides the attendants, three artisans are employed for the maintenance of the trenches and pipes.

Over 40.300 KSH is collected from the three kiosks every month, making the Kai water project admirable for proving both income and employment. But most importantly, the community based water project in cooperation with *AMREF* and the Kenyan Government has supplied the region with life-essential water. Other positive side effects are the easier irrigation of plants, feeding of livestock, as well as improved personal hygiene. In addition, some committee members have been able to start tree nurseries. Not only people from Kai, but also from Syumile, Tunguni, Kilema and beyond, walking up to 18 km come to draw clean water at the kiosks³.

School feeding programs

One of the consequences of drought periods is the decrease in the school attendance due to children's hunger and search for income. In June 2000, a joint program between the Kenyan Government and *World Food Project (WFP)* was coordinated by *AMREF*. It focuses on 19 districts including arid and semi-arid areas and benefits 837 schools. The dura-

tion of the program was set between June 2000 and February 2002 and has as its objective the improvement of the nutritional status of students as well as their school attendance. The food supplied consists of cereals, vegetable oil and pulses⁴.

Conclusions

The *Makueni Applied Nutrition Project* uses a multi-faceted and participatory approach for the improvement of nutrition of under 5 year olds as well as child-bearing women in Makueni District, Kenya. Malnutrition- in any area- is a highly complex issue, dependent on many different factors of the socio-economic, cultural and physical environment. It is thus important to simultaneously address different, immediate and underlying causes. Childbearing women, due to their reproductive roles and children under five years, due to their special nutritional needs for growth and development are considered more vulnerable to malnutrition.

To use a sick person as a metaphor, it is not a satisfactory treatment to only give that person painkiller. Much more effective would be to supply specific remedies for the open sore on the arm, the cough in the lung and the pain in the kid-

neys. The combined effect of these treatments would then help the person to get on his(her) feet again. Thus, each of the ANP's areas of focus has effectively helped to reduce overall vulnerability to malnutrition. We saw the effectiveness of this holistic approach to development in the described thriving community-based projects. Since such undertakings only work with the help of many people and at the same time provide priceless learning experiences, we want to encourage the reader to volunteer and partake in similar projects.

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PRIMIENJENI PROJEKT PREHRANE U ISTOČNOJ KENIJI: INICIJATIVA ZA SMANJENJE GLADI I POTHANJENOSTI

S A Ž E T A K

Održivi razvoj, jedini je tip razvoja koji može pomoći zemljama trećeg svijeta. Zbog različitih povijesnih, političkih, zemljopisnih i klimatskih uvjeta, razlike među državama koje pružaju i onima koje primaju pomoć, toliko su velike da donacije rada i/ili novca jednostavno nisu dovoljne. Države koje primaju pomoć trebalo bi podučiti kako održati vlastiti razvoj i to već tijekom primanja pomoći, a posebice nakon što pomoć prestane pristizati. Kao volonteri za AMREF (Američki medicinski i istraživački fond), tijekom ljeta 2001. godine, radili smo u sklopu značajnog »Makueni projekta primijenjene prehrane« (ANP) u istočnoj Keniji. Naš je posao bio posjetiti različite lokalitete u ovom polu-pustinjskom i pustinjskom okolišu i napisati izvješće o nađenom stanju, a s obzirom na različite aspekte projekta. »Makueni projekt primijenjene prehrane« započeo je 1984. godine i poslužio je kao odličan primjer značajne pomoći koju ovakav višeslojni pristup može pružiti u područjima kojima je ona potrebna.