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A Case Study of the Integration of Environmental, Development, and Reproductive Health Programs: TACARE-Tanzania

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# **A CASE STUDY OF THE INTEGRATION OF ENVIRONMENTAL, DEVELOPMENT, AND REPRODUCTIVE HEALTH PROGRAMS**

## ***TACARE—TANZANIA***

*The Lake Tanganyika Catchment Reforestation and Education Project  
A Project of the Jane Goodall Institute*



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**GLOSSARY**

AIDS: Acquired Immune Deficiency Syndrome

CBD: Community Based Distribution

CBDA: Community Based Distribution Agent

D&C: Dilation and Curettage

DDT: Dichlorodiphenyl-trichloroethane (pesticide)

DMO: District Medical Officer

DRC: Democratic Republic of Congo (the former Zaire)

EU: European Union

FAO: Food and Agriculture Organization

HFF: Hardwood Forestry Foundation

HIV: Human Immune-Deficiency Virus

HRF: Horst Rechelbacher Fund

IRC: International Rescue Committee

IUD: Intra-uterine device

JGI: Jane Goodall Institute

MCH: Mother/Child Health

MSF: Medecins Sans Frontiers (Doctors Without Borders)

MVA: Manual Vacuum Aspiration

NFP: National Family Planning Program, the government-sponsored program for delivering contraceptives and education through improved hospital services and community-based distribution

NGO: Non-Governmental Organization

RMO: Regional Medical Officer

STD: Sexually Transmitted Disease

TACARE: Lake Tanganyika Catchment Reforestation and Education Project

TBA: Traditional Birth Attendant

UNDP: United Nations Development Program

VINA: Village Nursery Attendant

WBF: Wanda Babowski Foundation

## **INTRODUCTION**

Since the early 1990s, the political economy of Tanzania has gone through a process of liberalization. Free education and health care are being phased out and replaced by private providers; although, subsidized health care is still available in many places. Kigoma, the northwestern administrative region in which TACARE is located, is the least developed region in Tanzania, with a per capita income below the national average of USD 210 and the highest population growth rate (World Bank). (See Appendix A for maps of Kigoma) It is the second poorest region in Tanzania with per capita income of 100 USD and twice the rate of deforestation as the national average (FAO 2000). Presently Miombo woodland, the type forest found in the Gombe Reserve north of Kigoma, covers only 46% of the region. According to the 1988 census, the population of Kigoma region is approximately 1,000,000, 85% to 90% of which resides in rural areas. (See Appendix B for a profile of Kigoma population profile.)

Between 1972 and 1974 under President Julius Nyerere (1961-1985), the government implemented a 'villagization' program in order to facilitate delivery of social services. People in sparsely populated areas were relocated to centralized villages, and those in densely populated areas were moved to less dense areas. As a result many households engaged in nomadic slash and burn farm practices, which are unsustainable especially in more densely populated areas. After the program ended, 60% of those relocated returned home.(Strunden 1999).

Kigoma Rural District contains Kigoma Town, the regional capital, which is connected to the rest of the nation by a railroad built by German colonizers in the nineteenth century. The line still functions, running approximately four trains a week and is the only reliable source of transportation into and out of the region other than the private planes run by non-governmental organizations (NGOs) such as the Red Cross. The Democratic Republic of Congo (DRC) and Burundi used to operate cargo and passenger boats that traveled to Lake Tanganyika, servicing several villages and the Gombe reserve, which are unreachable by roads. However these shuttle services were suspended when violence broke out in both countries.

Violence in neighboring countries has sent between 250,000 and 500,000 refugees into the region and resulted in the establishment of refugee camps near Kigoma town. Because of the camps, Kigoma town provides a base for many high profile NGOs, such as Doctors without Borders (MSF) and the International Rescue Committee (IRC), some of which also work with local residents. However, not all refugees reside in the camps, but rather rely on local services.

Contraceptives have been available at no cost (donated by USAID) since the 1970s, and the ministry of health established the National Family Planning Program (NFP) in the Kigoma region in 1995. However, family planning services were provided only in hospitals to women receiving pre and post-natal care. As a result, family planning has been classified under women's health, and only women who had given birth at a hospital were educated about it. In addition, local religious organizations, particularly Muslims and Catholics, have opposed family planning.

Contraceptive supplies have never adequately met demand. Particularly in remote areas where delivery is sporadic, supplies of free condoms are depleted quickly. Inconsistent availability of oral contraceptives has required women to switch brands from month to month or stop taking them. Those who can afford to will often pay for condoms or pills of the brand they desire (see Table 2 for prices). Still, according to government estimates, the current acceptance rate of family planning in Kigoma Rural District is 12% (DMO). See Appendix B for percentages of each contraceptive method used.

Shortages are caused by insufficient donations as well as the diversion of some contraceptives for private sale in Tanzania and possibly the DRC and Burundi where health systems are weak, and contraceptives are generally unavailable in poor, rural areas. No effective monitoring system exists to track the loss of commodities at a particular point in the supply chain.

Surgeries such as sterilization, as well as MVA care are available only in hospitals. There is one regional hospital per region and smaller district hospitals in each district within the region; however, the hospital for Kigoma rural district is located in Maweni rather than Kigoma Town. Moreover, the only board-certified gynecologist in the Kigoma region of 1 million women is the Regional Medical Officer, Dr. Mbaruku. Although, pediatric care

reproductive health services, and delivery care at the hospital are free, in 1991 he estimated maternal mortality at the hospital to be 186 per 100,000, surely an underestimation since it excludes women who do not give birth in the hospital.

At a local level, health centers offer the most sophisticated level of care. They often have several beds and are staffed by either nurses or clinic officers (this title requires two years of training) The services available depend on the level of staff training. A nurse or clinic officer can insert IUDs and provide inpatient care for other illnesses. Dispensaries, which are often the only health facility in remote villages and staffed by untrained people, who treat patients by symptom since tests are unavailable. Occasionally there are professionals with between one and three years of training, who can prescribe antibiotics and give injections, but more complicated procedures are referred to the nearest health center or hospital. Table 1 lists the numbers of health workers in Kigoma Rural District by level of training. As illustrated in Table 2, contraceptives and medical products and services are expensive relative to staple goods. Table 3 illustrates the dearth of trained medical practitioners in Kigoma rural district.

**Table 1 Health facilities in Kigoma rural district with mother/child health and family planning services (2000)**

<i>Type</i>	<i>Hospitals</i>	<i>Health Centers</i>	<i>Dispensaries</i>
Government	1	3	45
NGO	1	1	1

Source: District Medical Officer, Kigoma Rural District

**Table 2 Prices for selected staple goods and medical products and services**

<i>Staple Commodities</i>	<i>Cost</i>	<i>Contraceptives/Medicines</i>	<i>Cost</i>
Staple grain (2kg)	200 Tsh	Condoms sold in pharmacies (3)	200 Tsh
5 Bananas	200 Tsh	Antibiotics	500 Tsh
Maize flour (1kg)	250 Tsh	Laboratory tests	100-2500 Tsh
		Pregnancy test	1000 Tsh
		HIV test	2500 Tsh

One of TACARE's goals is to alleviate frequent shortage of funds for and supplies of contraceptives. Many women need contraceptives they can conceal from their husbands, such as oral pills and injections, because most men in the area still desire large families



women usually have little decision-making power. Thus TACARE seeks not only to expand access to contraceptives but also educate both men and women about family planning as a measure to ensure the health and survival of their children.

**Table 3 Health worker profile of Kigoma rural district 2000**

<i>Health Worker</i>	<i>Number</i>
Doctors	4
Nursing Officers	2
Clinic Officers*	5
Medical Assistant	18
Rural Medical Aid	26
Health Assistant	21
Nurse Midwives	14
Public Health Nurse	7
Mother/Child Health Aids	14
Nurse Attendant	95
Traditional Birth Attendant	36

\*Clinic officers have 2-3 years of formal training. The remaining health workers have between 0 and 2 years of formal training (excluding doctors and nursing officers.)

## **THE ORGANIZATION**

TACARE was founded Oct. 1994, originally to promote sustainable land use practices and community based health projects in the interest of preserving remaining indigenous forests. The project has operated under the leadership of Mr. George Strunden since its beginning. Jane Goodall did her chimpanzee research in Gombe National Park, which is approximately 20km north of Kigoma town and is facing a significant threat of destruction from a combination of population growth and unsustainable agricultural practices. The project was initiated by the Jane Goodall Institute with European Union (EU) funding. Micro-finance and oil palm hybridization and plantation projects were introduced later with funding from the United Nations Development Program. Another major contributor to TACARE projects is the Wanda Babowski Foundation, which supports community development efforts. Both the UNDP and the Wanda Babowski Foundation have contributed to the new TACARE building in Kigoma town, currently under construction by the Jane Goodall Institute. In 1997 with the help of funding from the David and Lucille Packard Foundation, TACARE began work in the field of

reproductive health. Expansion of services into reproductive health was undertaken because of the demand for contraceptive and reproductive health services observed by TACARE staff working with locals on other projects. Prior to the TACARE CBD program, women got information on family planning when they came to the hospital for pre-natal or mother-child health care. There are also government-sponsored radio and TV ads, but many people do not have access to mass media. Sex education has only just begun in the schools, and teen pregnancy is a big problem especially at boarding schools where teachers have impregnate students, who must subsequently leave school.

The second phase of the TACARE project began in 1999, drawing on the lessons of the first phase. In particular, it was recognized that conservation and sustainable land use could only be achieved by addressing the severe poverty of the region. Some specific objectives of the second phase, as stated in the 1999 annual report, are to:

- create environmental protection awareness
- provide models for sustainable socio-economic development
- strengthen the local institutional capacity for sustainable development
- improve access to primary health care
- support women in Kigoma region
- introduce adapted farming and agro-forestry systems
- establish sustainable tree nursery services in the project area

The third phase of the TACARE project has been to reduce pressure on the environment by promoting family planning in the Kigoma region. Thus TACARE has embarked on a reproductive health program in 1999 to conduct family planning classes and distribute contraceptives in local communities. In addition, TACARE has further developed its micro-enterprise credit program to promote community development and alleviate regional poverty especially of women.

Currently, TACARE has five main branches: Community Development, Health, Forestry, Agriculture, and Roots and Shoots. Each branch runs several projects at once and all four of them share office space, transportation, and some staff members. Agriculture, Forestry,

Community Development, and Reproductive Health are managed separately by staff members who are experts in their fields. There are seventy-four villages registered in Kigoma Rural District and TACARE projects from at least one of the four branches operate in thirty of them. (See map, Appendix A.) Target populations for each type of project overlap and the goal is to have eligible residents participate in all of them. See Appendix B for demographic characteristics of the Kigoma Rural District Population.

## **SERVICES DELIVERED**

### **Reproductive Health Programs**

Under the leadership of Dr. Godfrey Mbaruku, Regional Medical Officer, and Emmanuel Mtiti, medical professional from Kigoma, TACARE began its involvement in family planning in 1997 using a grant from the David and Lucille Packard Foundation given to improve access to reproductive health. In cooperation with the government health services, TACARE adopted the National Family Planning Program's plan and began efforts to improve access to family planning and reproductive health in Kigoma Rural District. Government health workers were already in place in most villages and have been involved at every level of TACARE's work in reproductive health.

Although traditionally an agricultural and development organization, TACARE's work in family planning was viewed as an extension of and complementary to its efforts to improve local living standards and protect scarce natural resources. TACARE's existing transportation system (several four-wheel drive vehicles) significantly reduced the costs of initiating and operating the new program, since transport of staff and supplies is a significant obstacle to the delivery of family planning services in the Kigoma region. The estimated cost of maintenance and fuel for transportation is 2000 USD/yr. (TACARE).

### ***Abortion Services***

Abortion is illegal in Tanzania, and death and complications due to illegal abortions are common. In order to receive a legal abortion, a woman must have three doctors certify that it is to save her life. As a result, approximately 75% of abortion patients deliberately

induce an abortion often with the help of a traditional healer by inserting herbs, sticks, chemicals into the vagina, or ingesting high doses of toxic drugs, such as chloriquine. Once bleeding starts the hospital will complete the procedure to protect the patient's life. Women lacking access to a hospital often die from these illegal abortions. An illegal abortion costs between 6000-20,000 Tsh (USD 8.00- 27.00) depending on gestation and the qualifications of the person doing the procedure.

MVA care is currently available only at Maweni Hospital ostensibly free of charge, but patients must buy the chemicals used for sterilizing the kits, which cost 1200Tsh (USD 1.60), and due to a shortage of kits, MVA is often unavailable. In 1999, 62 MVA treatments were performed at the Maweni Regional Hospital. Approximately 25% of women seeking MVA treatment cannot afford to purchase the necessary sterilization chemicals. When they can quality and effectiveness of these chemicals varies due to insufficient supplies. In addition, MVA syringes do not come with enough lubrication for multiple uses, and replacement lubrication is very difficult to buy but essential for a syringe being used hundreds of times. If the patient cannot afford the chemicals, or an MVA kit is unavailable, then a dilation and curettage (D&C) is performed. There are two to three D&C procedures performed a day, compared to less than one MVA. In 1999, 62 MVA treatments were performed at the Maweni Regional Hospital. However, many abortions are not recorded due to their illegal status.

TACARE's reproductive health services began as a program to provide manual vacuum aspiration (MVA) equipment and training in its use for post-abortal care in Kigoma rural district where self-induced abortions are common. Through cooperation between TACARE, the RMO, and the Red Cross, 18 doctors and physicians assistants were trained in MVA use and post-abortal care with emphasis on sterilization of equipment to prevent the spread of HIV. TACARE funded the purchase of 36 MVA kits (two for each team), many of which unfortunately disappeared into the refugee camps. The hospital is also trying to raise funds to buy more kits and train people in villages to perform MVA treatments on women unable to travel to the hospital. Although, even at Maweni hospital few people are trained to use the equipment. In the first six months of 2000 already 80 MVA treatments had been performed. In order to reduce demand for abortions, the TACARE program also provided training on the performance of female sterilizations.

*Community Based Distribution (CBD) Program*

During the first phase of the reproductive health program, a significant demand for the control of family size was recognized, motivating TACARE to initiate a program for education and CBD of contraceptives in 1999 in collaboration with public health officials and village health workers. The objective of the program is to expand awareness of and access to modern family planning methods by involving villagers in education and distribution of contraception in their own communities.

Using pre-existing relationships with villagers developed through the agro-forestry and community development programs, TACARE recruits trusted community members to visit local households to discuss contraception and reproductive health as well as child health with each family. The District Medical Officer then works with TACARE and village leaders to choose a community based distributing agent (CBDA) supervisor, who is usually a health-care worker at the local village dispensary or health center, and that supervisor receives two weeks training from TACARE staff. (See Appendix C for an outline of the training manual.) The supervisor then chooses CBDAs from volunteers in the village. Volunteers must be literate and the mix of CBDAs in a given village must be half men and half women.

After they are chosen, CBDAs undergo three weeks of training in Kigoma Town. In training, they learn about child health, the functioning of the reproductive systems, and the proper use of all available forms of contraception. They also learn about the symptoms and consequences of STDs as well as how to prevent them. Discussion of the importance of confidentiality and the best ways of dealing with conflict and other difficulties are also a significant part of the training.

CBDAs identify target households and traditional birth attendants (TBAs), who as trusted and respected members of the community can arrange for CBDAs to visit new mothers. Each CBDA is in charge of one hundred households but some distributors have almost 200. CBDAs visit each household, including non-acceptors, at least once a month. Although CBDAs are supposed to target everyone of child-bearing age in a household, some will not counsel girls they believe to be too young to be having sex even if they request contraceptive information. As a result of the prevailing attitudes toward

adolescent sexuality, CBDAs most often target men eighteen and older and women twenty and older. CBDAs also visit households with children under five and educate caretakers on vaccination and oral rehydration therapy.

CBDAs teach household members about contraception and STD prevention and explain to them which health services are available to them and how to access them. The program currently distributes contraceptives donated by USAID for free. In addition CBDAs are supplied with an umbrella, a bag, and a notebook.

Presently CBDAs are not paid. Their incentive is that the position offers them prestige and trust within the village. They get to display the widely recognized 'green star' on their homes, receive training and equipment, and are allowed to store the commodities that they dispense. CBDAs who do well get a letter commending their efforts and are invited to attend meetings with TACARE staff and CBDA supervisors. Although formal evaluations have not yet been performed, supervisors interviewed say they have not had performance problems. TACARE hopes to eventually sell the contraceptives at low costs allowing CBDAs to keep the proceeds.

TACARE does not pay the government employees that assist in the program except for training and accommodation in Kigoma Town during the two-week training period. As government workers, they are paid a standard government salary, depending on their level and experience. The lowest level government salary is 42,000Tsh/month. (USD 53.00) compared to a regional average of 79,500Tsh/year (USD 100.00).

As of 2000, the program had trained 80 CBDAs – between 4 and 8 CBDAs in each of the 17 villages participating. TACARE met with regional, district, and then village leaders. In order to gain trust and reduce opposition, TACARE also reached out to religious, and female leaders. After meetings with leaders, village-wide 'sensitization' meetings were held in which villagers are exposed to facts about contraception and fertility. After village meetings, married and unmarried people are counseled separately and offered private counseling from health care workers.

CBDA supervisors report that this program has improved access to contraceptives because clients can get them in their own villages during non-working hours. As a result, the program has increased the number of contraceptive users in the district, although still

now figures were available to document this. As part of the educational efforts, videos were shown in villages with portable equipment. The shows were very popular with more than 1000 people attending the 6 to 10 shows a month (Strunden 1999).

In 2000 TACARE implemented a field monitoring and evaluation system whereby CBDAs are must complete a report form for each village visit to keep record of clients and commodities dispensed. They attend weekly meetings with all six branches of TACARE programs to discuss ongoing activities and make recommendations for future improvements.

The CBD program experienced a lack of supplies such as flashlights or lamps for use during evening visits and boxes for storing drugs. Report forms (and paper in general) for CBDAs' village visits are in short supply, making accurate record-keeping difficult. CBDAs have long distances to walk and no access to bicycles or other forms of transportation. Similarly, CBDA supervisors must often oversee operations in more than one village without adequate access to transportation. Many recognize that without compensation they are limited in what they can do. Sometimes they ask for other support, such as soap, washing powder, household goods, or loans through the micro-credit program. Others, women especially find it difficult to fulfill their duties as a CBDA in addition to their wage, subsistence, or household work. Shortages of condoms are also a problem as is guaranteeing that a client can receive the same kind of pills every month.

Finally, CBDAs often face unfavorable religious beliefs, ignorance, and suspicion. Clients do not trust them because they think they are paid to encourage contraception use, and CBDAs will often do favors for clients using their own money to prove that the CBD program is trustworthy.

### **Environmental Programs**

Most people in the Kigoma Region rely on farming, fishing, or fish processing for their livelihoods. However, due to lack of training and knowledge as well as the government's efforts to settle people in concentrated villages during the 1970s, the natural resource base in the Kigoma region has been severely degraded. In the face of increasingly scarce

forest products and arable land, most of the unprotected forests near villages in the Kigoma region have already been cleared. Even the reserves and remaining forests, which contain significant biodiversity including the endangered chimpanzee, are threatened. Residents also overuse current farmland so that soils cannot regenerate, and resource scarcity is exacerbated.

The forestry and agriculture programs are separate programs but cooperate extensively with each other. The joint goal of the programs is to educate people about how to maximize production of food and cash crops while minimizing deforestation and soil degradation. Specifically, the program teaches locals to use remaining forests in a sustainable way and grow crops suitable to the soil using optimal fallow periods and organic farming methods. In addition, the programs encourage villagers to grow hardwood plantations as a cash crop and plant trees to replenish firewood supplies closer to villages.

### ***Tree Nurseries***

There are three categories of nurseries: village, central, and individual. Village nurseries are established by TACARE and are run by a village nursery attendant (VINA) who is chosen by TACARE through cooperation with village leaders. There are currently twenty-four village nurseries. The purpose of the village nursery is to support the activities of the forestry and agriculture projects by providing seedlings and education to local farmers. The VINA is trained in conservation and reforestation and is expected to educate his fellow villagers. TACARE provides training to VINAs as well as inputs to grow seedlings. After training, the VINAS raise seedlings and sell them to villagers for planting at a subsidized price. The choice of seedlings for a particular nursery depends on which crops are most suitable to that area. (There is significant variation in soil characteristics, as some villages are located on the lakeshore while others are further inland where soil is more arid.) Because none of the villages have a permanent water supply, forestry and agriculture projects must be tailored carefully to the conditions of each area. The degree of subsidy is determined by TACARE and the village government based on village income, so subsidies are targeted to the village level. The fact that



seedlings are sold by community members reduces the problem of people from richer villages traveling to buy seedlings at a higher subsidy, although, as with many targeted subsidies, arbitrage is still a possibility. From May to December, while seedlings are being raised and before they can be sold, the VINA is provided with an allowance for living expenses. Once the flow of income from selling seedlings begins, the allowance is terminated. The eventual goal is to terminate the allowance and provide only inputs.

As part of a social marketing program for condoms, village nursery attendants are supplied with condoms that they can distribute to customers. Like the CBD program, the plan is that eventually they will charge for them and use part of the profits to buy more condoms to sell.

At the beginning of the program, 50% of the VINA income was reinvested in village development. At this phase of the project, the VINA receives all of the income. The goal is for most programs to become self-sustaining as TACARE gradually withdraws assistance. The VINA program is doing very well and has already reached near self-sustainability. It has trained 47 VINAS, 24 of whom operate nurseries, and 17 of whom are already independent. This has led other villagers especially in urban areas to open private commercial nurseries. TACARE provides these individuals with training and some inputs. However, TACARE has limited support so as not to flood the market. By November of 2000, there were 38 village nurseries, 81 primary school nurseries managed by the Roots and Shoots program (described below), and 12 individual nurseries in rural and urban areas (Strunden 2000).

There is one central nursery, run by TACARE staff members at the TACARE building, which will be developed further once it is moved to the JGI Education Centre. The central nurseries serve as training nurseries for the VINAs to grow coffee, a wide variety of fruits, indigenous trees, and medicinal plants. They grow a combination of agricultural and forest trees to fulfill the joint goals of sustainable forest use and reforestation with indigenous growth. They also provide seedlings to be sold by the VINAs to Kigoma Town residents.

Once the tree seedlings have matured, TACARE also distributes trees to be planted on farmland, woodlots, demonstration plots, schools, institutions, homes, and along streets.

As of 2000 TACARE had distributed 749,868 trees and established 66 ha of communal woodlots (Strunden 2000).

### ***Village Forest Reserves***

In cooperation with village governments the TACARE forestry program has also established protected forests on communal village land that still have indigenous forests. TACARE forestry staff members work with the village government to devise a forest management plan and villagers are divided into groups, each of which controls an area of the protected forest. The TACARE program provides education on proper land management and land use planning. The idea is that indigenous vegetation will recover by itself. However many of the protected forests are seriously degraded, and TACARE must provide seedlings raised at TACARE's central nursery for reforestation. Once the forests have been rejuvenated, sustainable extraction of firewood, construction materials, and non-subsistence market products may be allowed, but clear-cutting for farmland will remain prohibited.

One type of indigenous species being reforested is medicinal plants, which if harvested at a sustainable rate can be sold and thus provide a constant flow of income for villagers. Also, encouraging the growth of medicinal plants helps to perpetuate the local knowledge associated with them. While the initial goal is to encourage cash crops to be sold at a local level, the market for traditional medicines is growing worldwide and may offer an export opportunity as production increases.

The program also includes a beekeeping project that established beehives in these protected forests. Because beekeeping is a communal activity from which all villagers can benefit, this project provides the incentive for cooperative enforcement of protected areas whereby participants prevent non-participants from burning forest for farmland. TACARE staff estimate that approximately half the villagers from the selected villages participate in the program at this point, and joint enforcement by participants makes clear-cutting or other abuses difficult for non-participants.

These protected forests also serve as a buffer zone between villages and officially protected areas such as Gombe Stream National Park and Kitwe Forest near Kigoma Town. By August of 2000, there were 38 reserves established in 32 villages, and over one million seedlings had been planted (Strunden 2000).

### ***Roots and Shoots***

Roots and Shoots (R&S) is a worldwide youth environmental education program run by JGI and executed through TACARE in the Kigoma region. The program sends environmental educators to work with school children to establish tree nurseries on school ground and teach the students appropriate farming practices and the importance of conservation. It also facilitates excursions to Gombe Stream National Park to see wildlife and raises awareness about children's health issues such as disease prevention and control and children's rights. By the end of 2000, R&S was working with 45 primary schools and children's centers in Kigoma urban district and 20 villages (Strunden 2000).

### ***Sustainable Agriculture Program***

Heterogeneous land requires that crops and training programs be customized to local conditions. TACARE agricultural specialists provide training on proper spacing, seeds, and improved farming methods for soil and water conservation. From TACARE nurseries, inputs such as seeds and fertilizer are distributed at affordable prices. Due to lack of regulation, pesticides such as DDT, long recognized as harmful to humans and banned in developed countries, are often used because they are a cheap and effective way of controlling the abundant insects that do significant damage to crops. TACARE uses demonstration plots to teach farmers and extension workers about different crops and organic farming methods in order to increase production and limit damage to the environment, particularly water sources. There are currently twenty demonstration plots, which are usually located on communal land and were established through a food for work program supported by the World Food Program.

Farmers are trained in methods to use on both their own land and protected village land, so that eventually they will have income from both their own land and their share of the

communal land. Improved cropping, harvesting, and farming technology can increase crop yields of staple food crops and thus reduce the threat to protected forests from human encroachment even as population increases.

Agricultural specialists work with forestry specialists at TACARE to promote the production of cash crops such as coffee, spices, palm oil, coconut, and mushrooms. Adequate markets for these crops depend on the availability of cash income. TACARE hopes that through promoting income-generating cash crops and other TACARE development projects, markets will evolve such that people can specialize their productive activities rather than rely on subsistence agriculture. By supplying training and subsidized inputs, TACARE also allows farmers to invest in tree crops. Growing tree crops means a much longer wait for returns on investment since trees must grow for several years before producing. An immediate need for food and income often drives farmers to plant only vegetable crops, which can be harvested in just a few months.

### ***Oil Palm Hybridization***

The Tanzanian government, with donor assistance, has been importing hybrid oil palm seeds since the mid-eighties. The Jane Goodall Institute and the Ministry of Agriculture Research Institute initiated this project to make use of the local seed varieties for hybridization rather than rely on imports of material from abroad. TACARE agricultural experts are now working to breed oil palms that yield large amounts of oil and are able to reproduce. Oil palm is the primary cash crop in Kigoma and the breeding of high yield varieties capable of producing their own seeds has potential to generate higher levels of income for both oil palm growers and processors. There are currently three demonstration plots devoted to oil palm and more than two hundred farmers have been trained in improved oil palm farming techniques.

### **Community Development**

TACARE runs diverse programs dedicated to the many development needs of villagers, especially those of women. Programs include the introduction of time saving devices,

micro-credit, sponsorship of girls for educational expenses, and general support and education for women about their rights and how to assert them.

### ***Micro-credit Program***

Credit constraints are one of the most significant forces perpetuating the region's poverty. Without access even to small loans, entrepreneurial villagers, women in particular, cannot amass the capital needed to start small businesses and remain dependent on subsistence activities as a result. Funded by the Rabobank Foundation, UNDP, and Wanda Babowski Foundation, the Savings and Credit program has developed a banking and loan systems to allow villagers to maintain savings accounts and apply for small loans to create or expand their businesses. Loans are made to groups of five people, at least 3 of whom must be female. Each member of the group is held responsible for the others' repayment of loans. This concept of joint liability ensures repayment because all group members are penalized for the default of one member. Female CBDAs are strongly encouraged to participate in the savings and credit projects in their own villages and to discuss it with their clients.

The program focuses on improving the lives of women because they are often left out of the power structure and excluded from decision-making concerning infrastructure projects like safe water projects. Experience and studies show that loans to women have a greater positive effect on households and surrounding communities as well as a higher repayment rate than loans to men (Besley and Coate 1995). Finally many women in the Kigoma region run small fish processing businesses requiring capital investments, such as devices for smoking and drying, kiosks, and bicycles or carts for transporting fish to market and for bringing market products like petrol and kerosene back to town. Such enterprises are suitable for small loans.

The program begins with a village meeting to explain the goals and requirements to local people. Participation is voluntary, and introduction of the program is often met with suspicion. People who have never had a bank account are hesitant to give their money to someone else to be managed and many husbands are convinced at first the program is

simply a scheme to get women to hand over their money. Pre-existing relationships between TACARE staff and villagers help to overcome these problems.

Once villagers have agreed to the program, each village elects a committee from its members to administer the bank. Banks are run entirely by community members and contain only the savings deposited by members. Physically, they are usually just safes provided by TACARE along with careful records of activity. Under the supervision of TACARE staff, program participants and committee members decide on the terms of loans, the requirements that must be met by new members, and administrative rules for the bank. The rules are considered a 'constitution' for that bank and are monitored by project staff to ensure they are reasonable.

After forming groups, and before they can borrow, villagers need to establish savings accounts, which are then used to make loans. The total amount of the loans to a particular group cannot exceed the sum of the group members' savings. Deposits are made in previously agreed upon amounts on a weekly or monthly basis. If project staff members observe a commitment to the project through sustained contributions, the committee and all group members receive two weeks of mandatory training by TACARE staff. Training encompasses business skills for evaluating loan applications and setting banking rules, bookkeeping, and relevant group management skills. Savings must reach a previously agreed upon level before loans can begin. After a few rounds of loans are given, if repayments are on schedule and the bank is considered well managed, TACARE adds funds to the pool in the form of a loan with an interest rate of twelve percent per annum. The size of loans that a villager may receive depends on his or her savings contribution and past performance on loan repayment. Loan applications must be for income-generating activities and contain a business plan, agreed upon by all group members, for review by the administrative committee. There is a penalty for late payment and possible criminal charges for default. Expectation of repayment is an important aspect of the scheme, not only to instill responsibility and ownership in participants, but also to reduce dependency on aid. Without significant penalties for default, villagers may consider the money a grant rather than a loan.

Originally, the program was started in five villages. The cost of establishing the program in a village is approximately 700,000Tsh (USD 880), which pays for training, bookkeeping supplies, a safe, and ongoing monitoring. TACARE staff members work with government employees to monitor the programs, visiting at least twice a month. to evaluate the administration of the banks and employees of the coop office in Kigoma Town and perform periodic audits. TACARE usually advises repayment periods of eighteen months, including a six-month grace period. When repayment has been made in full on the designated schedule, borrowers can often receive larger loans in the next round. The average default rate on loans in all villages has been a low eight percent. There are currently 12 of these micro-credit institutions operating and the program hopes to have 18 by 2002. Monitoring by TACARE staff is very important during the early phases of the program because sometimes members of successful banks believe that access to credit will decrease if more villagers participate. They try to make their bank exclusive by adding provisions to the constitution that make it very difficult for someone to become a new member. TACARE staff must intervene and explain to them why this endangers the sustainability and continued success of the project.

The long-term goals of the project are self-sufficiency and an increase in the number and scale of these micro-credit institutions. By making credit widely available to worthy borrowers, micro-credit minimizes credit constraints and improve women's living standards and standing in the community. Once people are involved in the credit program and are succeeding, they are encouraged to educate and involve other members of the community in the project.

### ***Time-saving Devices***

In order to involve women in credit and other development projects, it was necessary to create free time for them. Between collecting firewood and water, childcare, and subsistence farming, most women do not have the time to participate in other activities. Women currently spend up to a fifth of their total working time collecting wood and are likely to spend even more as firewood becomes scarcer. TACARE introduced the fuel saving stove (FSS) to save women's time and reduce the amount of firewood needed. By

creating a mud cover for cooking fires, women were able to burn and therefore collect 60% less wood at no additional cost. Initially, about 20 women were taught to build the stove so that they could pass the information on to others. As of 2000, 625 people had been trained to use the FSS in 22 villages (Strunden 2000).

TACARE also established a safe water project in order to improve the function of safe water access systems in villages and thereby reduce time needed to collect water. The community development staff has helped to rehabilitate the infrastructure (pipes, valves, etc.) of previously abandoned water projects.

### ***Sponsorship of Girls***

As part of the 'cost-sharing' efforts of transition from a socialist regime, parents are now required to pay fees for each child in school. Primary school, which is open to all children, costs USD 50 per year. After primary school, students are tested by the government, and those that score the best are sponsored by the government in secondary school. However parents must contribute to secondary school tuition approximately USD 100, which is equal to the per capita income in the Kigoma Region.

The Wanda Babowski Foundation provides funding for TACARE to sponsor those girls who qualify for the sponsorship but cannot afford the contribution to tuition. As of August 2000, the project gave scholarships to 37 girls: 2 in primary, 32 in secondary school, and 3 in college. Sponsored students are placed in schools nearby to make monitoring and support easier (Strunden 2000).

### ***Support for Women***

TACARE's community development program also seeks to educate women about their rights. TACARE distributes leaflets and booklets on rights and constitutional law as well as trains and educates women how to exercise these rights. Materials and training sessions cover topics such as claiming inheritance, divorce settlements, seeking custody of children in the case of divorce or death of the husband, and reporting rape and other violence. Distribution of these materials is usually accompanied by education and



counseling since many women cannot read and also need close support to bring a legal case or report violence. The program tries to bring both men and women together to discuss gender issues, such as involving women in decision-making at all levels, from household to village. Women in credit programs are often very responsive to these programs and help TACARE to reach out to others in the villages.

The program also offers legal aid for complaints and appeals as well as expenses for cases that seem worthy. A lawyer is not always necessary to pursue a case in Tanzania, but it is expensive to appeal even without one. The cost of bringing a case averages 200,000 Tsh (USD 270.) If the woman wins her case, she repays the support. If not, it is considered a grant.

The program also takes women on study tours. They bring their commodities, receive training on business management skills, and meet with others in their trade. One recent trip has been to the International Trade Fair in Dar es Salaam.

#### **TIME FRAME FOR DEVELOPMENT**

One of TACARE's priorities is to build capacity at the village and institutional or government level. Thus many of its current projects and efforts seek to train and facilitate villagers to run enterprises such as CBD, VINA, savings and credit societies, and local authorities to implement environment and community development programs by themselves. However many of these projects are still in their start-up phases and depend on TACARE support. For example, TACARE provides free contraceptives to the CBDAs to distribute and supports VINAs during the winter months when they cannot sell seedlings. However, once the demand for contraceptives is established, CBDAs will sell contraceptives at low cost and keep the proceeds. TACARE intends to cooperate with Population Services International, in order to obtain cheap additional condoms to deal with the frequent shortages that hinder family planning efforts. In the future TACARE will phase out winter allowances for VINAs once their clientele has grown enough to support them through the off-season. In addition, TACARE has facilitated district staff to attend training sessions in other countries. TACARE also seeks to improve the physical infrastructure in project villages to provide basic public services. For example, TACARE

helped mobilize people and resources to carry out water projects and other rehabilitation schemes. All of these efforts serve to build capacity of human and physical resources to ensure environmental conservation and community development.

TACARE has begun to establish a continuous monitoring and evaluation system. Outcome indicators, such as trees planted per village, loans released, and villagers having access to and utilizing family planning methods, have been established. TACARE has also prepared a field monitoring and evaluation form for VINAs and CBDAs to report on their village visits. This monitoring and evaluation system will help TACARE document project activities, improve program design, and accommodate neglected community needs. All information gathered through surveys and observations are put into a digital database and given to district authorities. (See Appendix D for TACARE financial information.)

TACARE also intends to expand all of its projects into more villages. For example, between 1999 and 2000 TACARE increased the number of village nurseries from 24 to 38 and primary school nurseries from 6 to 81. Additionally, the TACARE trained 117 women in the use of fuel-efficient stoves in 10 villages in 1998 and 245 women in 20 villages in 2000 (Strunden 1999; Strunden 2000). Such integration of the complementary goals of conservation, development, and family planning reduces marginal costs of initiating each new program through using transportation and relationships with village leaders for multiple programs. Having established the client's trust in forestry and agricultural services, TACARE can easily expand its projects to include family planning and savings and credit schemes.

TACARE has continually demonstrated its willingness and ability to expand into new areas of service. One vital area that could benefit from the expertise and experience of the TACARE staff members is HIV/AIDS education and prevention. With CBDAs already distributing condoms and educating villagers on STD transmission and prevention, the addition of a specific focus on AIDS would be less costly than instituting an entirely new program. Through its transportation infrastructure and local contacts, TACARE could coordinate and contribute to the efficiency and effectiveness of currently existing NGO programs in HIV/AIDS prevention.

Although there exist no specific data for the Kigoma Region of Tanzania, data from the surrounding Rukwa and Kagera regions suggest that prevalence rates are even higher than the national average of 8.1 percent. UNAIDS estimates the prevalence rate in the regions of northwest Tanzania to be at least 25% in 1999 (UNAIDS and WHO 2000). According to data from the US census bureau, the Rukwa region is experiencing prevalence rates of up to 20% among pregnant women (US Census Bureau 2000). 1996 data from Kagera showed a rate of 13% down from 23% in 1992. Tanzania had 1.3 million people living with HIV or AIDS at the end of 1999 (UNAIDS and WHO 2000). Life expectancy fell from 52 years in 1992 to 45 years in 1999 (World Bank 2001). Finally, the UNAIDS 2001 HIV/AIDS epidemic update reports that over 40% of adolescent women in Tanzania have misconceptions about how HIV/AIDS is transmitted (UNAIDS and WHO 2001). Thus there is a dire need for both HIV/AIDS prevention and education campaigns.

TACARE has proven itself to be flexible in expanding and adding programs to meet the needs of the people it serves. Although the CBD program incorporates condom distribution and STD prevention education, the severity of the AIDS crisis requires specific emphasis on HIV/AIDS education and prevention. According to the 1996 DHS survey, 66.2% of women in Kigoma believed they were at no risk for AIDS or did not know how to estimate their risk. 35% knew of no way to prevent AIDS. Among men, 72.8% believed they were at no risk or did not know how to estimate it. 29% knew of no way to avoid it (National Bureau of Statistics [Tanzania] and Macro International Inc. 1997).

Maweni Regional Hospital has an AIDS education and prevention program run by Dr. Mzazi, which is funded by the UNDP. The program is hospital-based. Because of a lack of comprehensive testing, health workers can only estimate the number infected, although an informal study of pregnant women conducted by Dr. Mbaruku showed an infection rate of 10% (Mbaruku 1998). The program focuses on prevention education, and makes an effort to reach children who are not in school, since they are often at the highest risk. Dr. Mzazi works with the family planning clinic at the hospital to emphasize condom use to patients. Hospital workers are also offering training to relatives of patients in providing home-based care. Much of the focus of government HIV/AIDS work focuses on a multi-

sectoral approach through which both public and private employers share the costs of educating employees. Significant disruption to the labor force due to illness of productive-aged people creates incentive for industry to cooperate.

Given the extent of the epidemic and the limited resources of the local health system, there would probably be significant gains from TACARE's involvement in AIDS education and prevention programs. Past cooperation with the Regional health system has proven successful and the addition of AIDS education to the services TACARE brings to remote villages would be a significant value-added. It would also have the potential to attract new sources of donor money.

### **OBSTACLES IN DEVELOPING THE PROGRAMS**

TACARE and JGI have faced numerous obstacles in the development and implementation of their projects. Distrust and religious beliefs have been detrimental to reproductive health programs and TACARE has confronted these difficulties primarily through cooperation with village and local religious leaders. Attempts are made to dispel some of the traditional distrust and religious objections to birth control such as the belief that it is simply an effort by the developed world to reduce the population of Africans. TACARE staff members also meet with church leaders before the village-wide meetings to try to gain their cooperation; not to demand they condone contraception but to request that they not actively oppose it. These efforts have been moderately successful. The goal is not to be confrontational with people's beliefs and religious affiliations but to show how family planning can co-exist with religion.

Another significant obstacle has been a lack of infrastructure in the region. A boat is required to reach many of the villages and four-wheel drive vehicles are needed to reach the rest. In addition, unreliable electricity and paper shortages in the villages have impeded progress. There was no electricity for the month of August 2000 and TACARE staff spent a lot of time trying to buy a generator, unsuccessfully. This significantly detracted from preparations for field evaluations and the problem has continued into 2001.

## CONCLUSIONS

TACARE's ability to sustain successful projects in a broad range of services may serve as a model for other programs. The increased efficiency of such a holistic approach to development and conservation is especially relevant to the many areas of the world, particularly in Africa, where target populations are remote and difficult to reach. TACARE has also been able to overcome with some success beliefs and cultural issues that are so often barriers to acceptance among locals, especially for family planning programs.

The factor that seemed most important to the success of TACARE's projects was cooperation with government and local leadership. TACARE cooperated with the national government to implement a family planning program that otherwise would not yet exist in the Kigoma region. By working with the government, TACARE was able to take advantage of the existing health infrastructure, employing trained health care workers to supervise CBDs, at no cost to the program other than whatever additional training was needed. Close cooperation at a local level is also important. Village-wide meetings held before the introduction of a new project ensure that everyone is informed and has the opportunity to be involved. Working with local leaders in choosing staff also helps to build trust and prestige within the villages. Also, CBDs cooperate with traditional birth attendants, who are widely respected in the villages and whose cooperation and endorsement can enhance the success CBD efforts. Another key to TACARE's success is its non-rival approach to its projects. In the past, TACARE has cooperated with other NGOs, such as the Red Cross, in the achievement of common goals. TACARE has also contributed inputs to villagers that started nurseries after witnessing the success of the village nurseries, even though these were not TACARE projects.

Yet another important factor is the enthusiasm of the villagers involved in the projects. Future success will depend on input from locals. CBDs, supervisors and hospital workers were all very eager to discuss ways to help them do their jobs better, and the same is probably true of those involved in the development and agro-forestry programs.

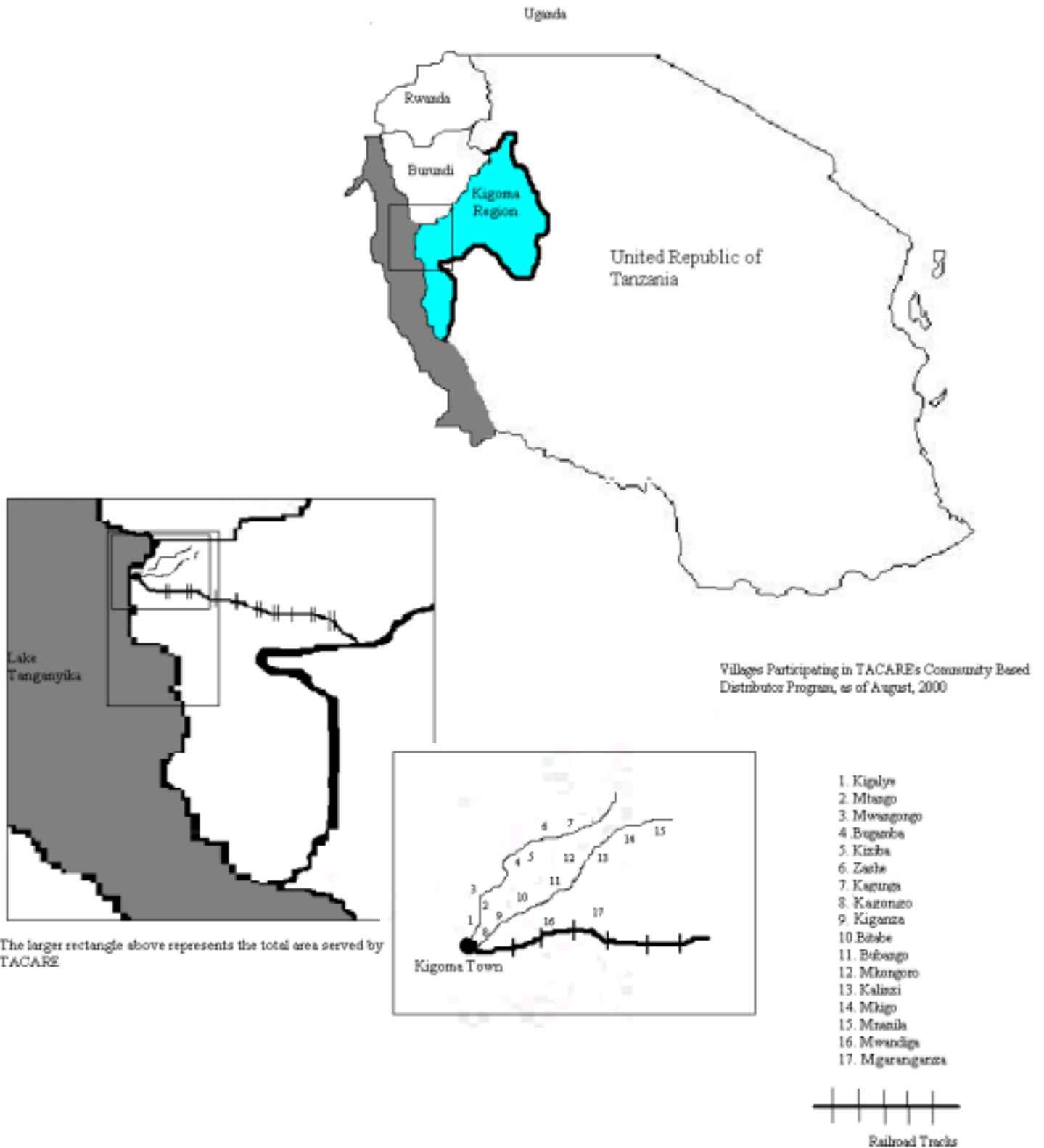
Continually adapting programs based on the feedback of managers and participants will be vital to the continued success and acceptance of TACARE's efforts.

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**APPENDIX A**

**Map of Tanzania and Kigoma Region**





**APPENDIX B**

**Table 1 Kigoma rural district population profile**

	1999	1998	2000 (est.)
Total population*	385,934	373,243	399,056
Annual births	15,438	17,169	15,962
<5 yrs	77,187	74,649	79,811
Female 15-19	20,455	19,782	21,150
Female 20-24	13,887	13,437	14,366
Female 25+	64,804	62,902	67,041
Male 15-19	21,602	20,902	22,347
Male 20-24	17,358	16,796	17,958
Male 25+	71,361	69,050	73,825

\*Assumes 3.4% growth rate

Source: District Medical Office, Kigoma Rural District

**Table 2 Population profile for Kigoma rural district**

	1998		1999	
	#	%	N	%
Villages	68		66	
Villages surveyed	47	69%	54	82%
Trained TBAs	37		41	
CBDAs	0		16*	
Active village health commission	54		50	
Active village health worker	0		0	
Health facility reports	49		46	
Households	35496		41702	
Households surveyed	25175	71%	34538	83%
Acceptable toilet	16750	67%	22963	66%
Bin or refuse pit	14649	58%	15510	45%
Utensil drying rack	17127	68%	19726	57%
Safe water	3883	15%	7667	22%
Schools	71		72	
Schools visited	49	69%	43	60%
BCG immunization	2481		1789	
Tetanus	5626		4871	

\* Program started in 1999

Source: District Annual Reports to Ministry of Health

**Table 3 Family planning usage in Kigoma rural district**

<i>Contraceptive/Service</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>
Acceptors	6043	11394	11695
New acceptors	3293	2975	3203
Oral pills	15160	8857	4363
Injection	4990	11483	4660
IUD	41	94	65
Condoms	17583	20	0
Foam	2443	78	0
Diaphragm	0	25	0
Natural method		138	31
Other methods		19	125
Female sterilization		3	1
Vasectomy		20	40
Syphilis tests		0	723

Record-keeping procedures changed after 1997

Source: District Medical Officer, Kigoma Rural District

**Table 4 HIV rate among blood donors in Kigoma rural district**

<i>Group</i>	<i>1998</i>		<i>1999</i>	
	<i>No. donors</i>	<i>rate</i>	<i>No. donors</i>	<i>rate</i>
Female 15-19	1	0	4	0
Male 15-19	16	0	38	0
Female 20-24	14	0	47	6.40%
Male 20-24	29	0	42	7.40%
Female 25+	122	4.10%	266	7.10%
Male 25+	137	2.20%	172	1.70%

Source: District Medical Office, Kigoma Rural District

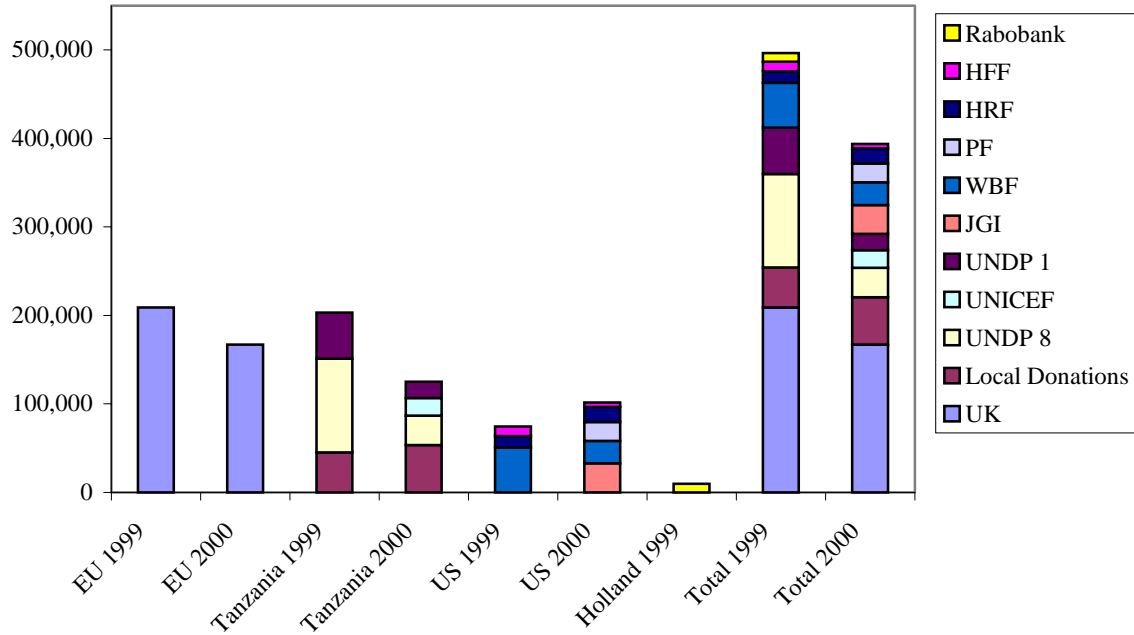
## **APPENDIX C**

### **Outline of CBD training program**

1. Concepts of Integrated Reproductive and Child Health
  - Rationale of RHC in Tanzania
  - Concept of Integrated RHC
  - Role of CBD in reproductive health
2. IEC in Reproductive health
  - Concept and Principles of IEC
  - Communicating with the community
3. Advocacy and initiating communication between CBD and others
  - Counseling on FP and Reproductive Health
4. Contraceptive Technology
  - Concept of family planning and Tanzania
  - Various methods of FP and referral for CBD
  - Overcoming rumors and misconception
5. STDs/HIV/AIDS
6. Safe Motherhood
7. Management of CBD activities and the community
  - Concept of management
8. Health Management Information System in relation to RHC
  - Recording, collecting, reporting systems
9. CBD protocol
10. Concept of supervision and responsibility of CBD supervisor
11. Managing CBD supervision
  - Administration and the role of CBD supervisor
  - Planning supervision
  - Implementation
  - Evaluation
12. Administrative and technical supervision
  - Principles of supervision

**APPENDIX D**

**Figure 1 TACARE funding 1999-2000**

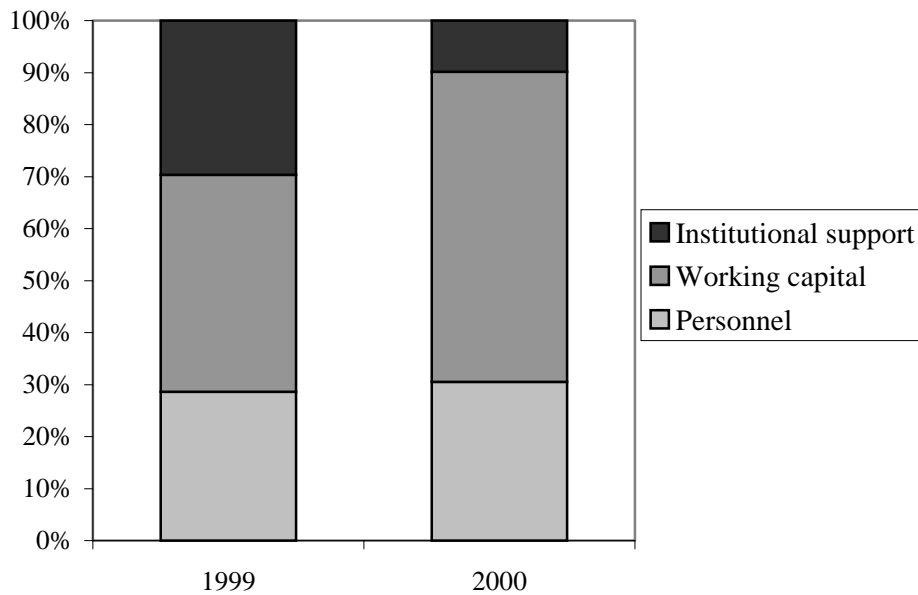


Total funding (or expenditures) in 1999: \$496,477

Total funding (or expenditures) in 2000: \$393,893

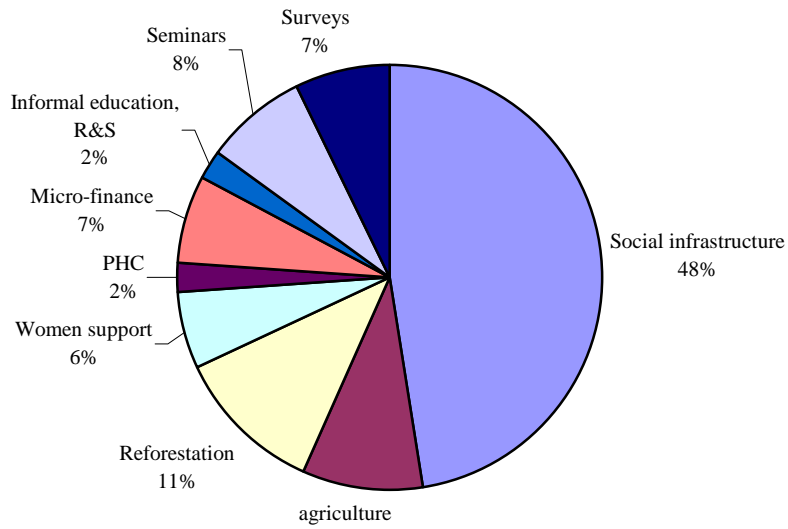
Source: TACARE Project Annual Report 1999; TACARE Project Annual Report 2000

**Figure 2 TACARE expenditures 1999-2000**



Source: TACARE Project Annual Report 1999; TACARE Project Annual Report 2000

**Figure 3 TACARE working capital expenditures 2000 (\$234,894)**



Source: TACARE Project Annual Report 1999; TACARE Project Annual Report 2000