

**SUSTAINABILITY ASSESSMENT OF THE
AFRICA CHILD SURVIVAL INITIATIVE
(ACSI) COMBATTING CHILDHOOD
COMMUNICABLE DISEASES (CCCD)
PROJECT
RWANDA, 1993**

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ACRONYMS

ACSI	Africa Child Survival Initiative
AFR	Africa Bureau (A.I.D.)
AFVP	French Voluntary Association for Progress
A.I.D.	Agency for International Development
BAD	African Development Bank
BI	Bamako Initiative
BUFMAR	Office for Consolidated Medical Facilities of Rwanda (French: Bureau de Formations Medicales Agree de Rwanda)
CCCD	Combating Childhood Communicable Diseases
CDC	Centers for Disease Control and Prevention
CDD	Control of Diarrheal Diseases
CRR	Croix Rouge de Rwanda (Rwanda Red Cross)
EPI	Expanded Program on Immunizations
FP	Family Planning
GDP	Gross Domestic Product
GOR	Government of Rwanda
GTZ	Gesellschaft fur Technische Zusammenarbeit (German Assistance)
HED	Health Education Division
HIS	Health Information System
HMIS	Health Management Information System
IDRC	International Development and Research Center
IM	Infant Mortality
KAP	Knowledge, Attitude, and Practices
LOP	Life of Project
MCH	Maternal Child Health
MOH	Ministry of Health
MSF	Medicins Sans Frontiers (Doctors Without Borders)
ONI	Office of Operations and New Initiatives (A.I.D.)

OPHAR	National Pharmacy of Rwanda
OR	Operations Research
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PACD	Project Assistance Completion Date
PASA	Participating Agency Service Agreement
PHC	Primary Health Care
RF	Rwanda francs [144 RF = 1 US\$ (official)]; [170/180 =1 (unofficial)]
TO	Technical Officer
TOT	Training of Trainers
TPPI	Technical Projects and Program Implementation Division (A.I.D.)
WB	World Bank

EXECUTIVE SUMMARY

More than four years after the completion of the USAID/CDC-assisted CCCD/Rwanda Project, a team of five public health professionals with extensive PHC and/or CCCD experience was requested by A.I.D./Washington to conduct a sustainability study of the project. The team, in collaboration with the Ministry of Health (MOH), conducted a five-day study to determine to what degree CCCD Project services and support activities or benefits continued after the project assistance completion date (PACD).

The study was reduced from two weeks to one week due to the escalating armed conflict in the northern part of Rwanda, which has been ongoing since October 1990. The study was confined to the health service centers in and around the capital city of Kigali for the same reason.

The Combatting Childhood Communicable Diseases (CCCD) Project Agreement with the Republic of Rwanda was signed in July 1984, and the project started operations in December 1984 with the assignment of the CDC technical officer. The PACD, as mutually agreed upon, was June 30, 1987; it was later extended one year to June 30, 1988.

The purpose of the project was to improve the health status of children under five years of age by supporting and strengthening Rwanda's efforts to prevent and/or treat the most common childhood diseases. The project targeted diarrheal diseases, malaria, and six vaccine preventable diseases -- measles, tetanus, poliomyelitis, pertussis, tuberculosis, and diphtheria. The four strategies selected to support Rwanda's objective of reducing childhood morbidity and mortality were training and supervision, health information systems, health education, and operations research.

The CCCD Project was integrated from its very beginning into the MOH's existing structure and into the very extensive and capable private sector health facilities. Before the end of the project, national plans for EPI, ORT, and malaria were established. An effective supervisory system with an innovative checklist approach was established, as was a health information system to monitor service delivery and provide feedback to regional and local levels.

Health education efforts were particularly impressive in developing and distributing appropriate health education messages and materials by a skilled team trained through the project.

Training programs developed by the CCCD Project made possible the training of trainers including mid-level managers and heads of health centers. PHC has been introduced into the curricula of primary and secondary schools, health science schools, and the medical school. A decentralized system of continuing education was started in 1990 to train at least three staff members per health center in EPI, CDD, acute respiratory infections (ARI), and HMIS.

KAP (knowledge, attitudes, and practice) and other studies supported by the project provided baseline data on EPI, ORT, and malaria and were conducted again after the end of the project. *In vivo* drug resistance studies helped identify improved treatment schedules for malaria. CCCD

regional funds were used to conduct operations research (OR) on the immunogenicity of measles vaccine in 1985 and possible transmission of HTLV-III through vaccinations in 1986. However, no OR study received funding from the \$50,000 line item project budget. After the project in 1988 and 1989, OR was conducted on the effectiveness of sorghum-based porridge for ORT.

Adapting USAID's project-related criteria and non-project (external) factors influencing sustainability of CCCD activities in Rwanda, the team reviewed over 50 indicators to judge their effects on the six criteria. (See Sustainability Table on page 4-5.)

It was found that there is strong national commitment to continue CCCD Project activities and that those activities are well integrated into the MOH and the private sector health structures. It was unanimous among the MOH staff and participating partners (USAID, WHO, UNICEF, BUFMAR, etc.) with whom the team talked that the project was needed, effective, and achieved most of its objectives.

On a scale of 0 to 3, EPI and Training/Supervision were judged to be the most sustained of seven support strategies and interventions with a score of (3), meaning permanent activity with improved quality. CDD and Health Education were next highest (2), meaning permanent activity and maintenance of quality. Malaria and HIS (1) were judged to have permanent activity but decline in quality. Operations Research (0) was judged not to have been sustained.

CCCD/Rwanda ended on a negative note. While USAID/Conakry did not renew the project in Guinea because of poor financial and material management of the project, in Rwanda, USAID felt the project achieved its objectives and therefore there was no need to renew it. However, the MOH perceived that the project would be renewed, either because of communications from the technical officer and/or the recommendation to continue the project (with stipulations) from the mid-term evaluation in 1986. The MOH did not feel prepared to continue project services without USAID assistance and was very disappointed that the project was not renewed.

With the exception of the operations research component of the CCCD Project, there is no question that project activities are continuing and that CCCD services continue to be provided nearly five years after the PACD in Rwanda. However, if there exists a threat to sustainability of CCCD Project services in Rwanda, it stems not from project-related factors but from non-project or external factors. The armed conflict in the north of the country and spreading to the south is creating havoc with the stability of the transition government and contributing to the economic instability of the country.

Key Lessons Learned

1. The presence of a better equipped private health sector (and consolidated system), where the work is demanding but rewarding, is attractive to a number of public sector personnel. Many public health professionals are leaving the public sector (thus jeopardizing sustainability of system) for private or consolidated centers.
2. Complete, effective, and wholesome cooperation between the public and private sector in Rwanda maximizes sustainability of CCCD activities.
3. Top priority programs such as EPI perform better at all levels, especially the secondary and peripheral. Among all CCCD Project activities, EPI is the most organized, represented, and supported at all levels perhaps because it has the status of a division. (CDD, Malaria control, and ARI fall under the Division of Epidemiology).
4. Health personnel motivation is essential to assure program success and sustainability. MOH staff are often motivated by per diem received for training sessions and payment for supervisory visits, rather than by their GOR salaries. Unfortunately these incentives are provided basically by UNICEF and the Family Health/WB project. Their phase-out will have a profound impact on support activities, especially supervision.

Key Recommendations

1. The search for alternate funding sources for CCCD disease interventions and support strategies should begin now in preparation for the time when UNICEF starts scaling down assistance.
2. CDD, ARI, and Malaria programs should be put on a par with EPI in terms of resources and recognition if they are to become effective programs.
3. The findings of the June 1992 CDD study need to be incorporated in the training strategy in order to address weaknesses in supervision and inadequate service delivery in CDD.
4. Since malaria is the major health problem in Rwanda and very few health staff have received adequate training in combating the disease, it is recommended that qualified technical assistance be requested to improve the organization of the malaria program and to improve program policies, action plans, and training.

5. MOH should increase its efforts to decentralize HIS to the regional and peripheral levels. It should follow up on its objective of rendering the regions less dependent on the central level. Efforts should be focused to improve data collection and analysis. Computerization of HIS at the regional level should be considered.
6. The national OR Coordinator in the MOH should be encouraged to identify areas where OR is needed. The OR Review Committee should be re-established to approve submitted proposals and to forward them to an appropriate funding sources.

I. INTRODUCTION

More than four years after the project assistance completion date of the USAID/CDC-assisted CCCD/Rwanda Project, a team of five public health professionals with extensive PHC and/or CCCD experience was requested by AID/Washington, under contract to Atlantic Resources Corporation, to conduct a sustainability study of the project. The team, in collaboration with the MOH, conducted a five-day study to determine to what degree CCCD Project services and support activities continued after the project assistance completion date (PACD).

The study in Rwanda was reduced from two weeks to one week due to the country's escalating armed conflict, which has been ongoing since October 1990. For this reason the study was confined to the health service centers in and around the capital city of Kigali. Though the team would liked to have provided more detailed information in this document, it felt, nevertheless, that enough information was gathered from reviewing the appropriate documents, interviewing as many key people as possible, and conducting two days of field visits (though confined to Kigali and environs) to determine whether the people of Rwanda were continuing to receive and benefit from CCCD-supported activities and to what degree.

The Combatting Childhood Communicable Diseases (CCCD) Project Agreement with the Republic of Rwanda was signed in July 1984, and the project started operations in December 1984 with the assignment of the CDC technical officer. The project assistance completion date, as mutually agreed upon, was June 30, 1987. The PACD was later extended one year to June 30, 1988.

The Africa Child Survival Initiative/Combatting Childhood Communicable Diseases (ACSI/CCCD) Projects, as they were later known, (hereafter referred to in this document as CCCD) were a regional effort to help 13 African countries prevent and/or control major causes of childhood morbidity and mortality. These projects were centrally funded by USAID and implemented, in collaboration with the Ministries of Health of participating countries, by the Centers for Disease Control and Prevention (CDC).

USAID, as the lead donor, provided \$1.07 million while the government of Rwanda (GOR) committed \$810,000 over the life of the project (LOP).¹

During the LOP the major objectives were to reduce by 33-50 percent morbidity and/or mortality in children under five years of age due to measles, neo-natal tetanus, poliomyelitis, diarrheal diseases, and malaria. These objectives, which applied to the other 13 CCCD participating countries as well, were to be achieved by increasing immunization coverage; increasing access to, and use of, oral rehydration therapy (ORT); increasing access to, and use of, malaria therapy and prophylaxis for children and pregnant women.

¹These figures are taken from the 1986 Evaluation Report of the ACSI-CCCD program in Rwanda.

II. BACKGROUND

Rwanda, approximately the size of Maryland, is one of the most densely populated and intensively cultivated countries in the world. With a total population of 7.2 million people and a total area of just over 10,000 square miles, Rwanda has a population density of 708 persons per square mile. This landlocked country is divided into 10 regions with very few villages or groups of houses. Most families live in self-contained farm compounds.

Agriculture is the primary source of livelihood for over 90 percent of Rwanda's people. Fewer than seven percent of the population live in urban areas (towns greater than 5,000 people), with the vast majority of the population distributed fairly evenly throughout the country.

Rwanda's indigenous population, consisting of three ethnic groups, all share the same language called Kinyarwanda. Hutus, the tribal group which represents about 84 percent of the population, are originally farmers of Bantu origin. Tutsis, about 15 percent of the population, are originally a pastoral people of Nilotic origin. The Twa (only one percent) are thought to be the earliest settlers of the region. About 75 percent of the population are Christians, of which, two-thirds are Catholic. Animists account for the bulk of the remaining 25 percent.

The population growth rate was estimated to be 3.1 percent in 1991, which was down considerably from 3.8 percent in 1987. The average family size is estimated to be six persons. In 1989, infant mortality was calculated to be 118 per 1,000 live births, while life expectancy at birth was 49 years.

Rwanda's Ministry of Health is headed by a Minister and directed by a Managing Director. Under the Managing Director come the two Directorates concerned with the CCCD Project, the Directorate of Health and the Directorate of Epidemiology and Health (see Appendix F). Three-quarters of the recurrent cost health budget is allotted to hospitals, which provide mainly curative services. Thus, less than one-quarter is allotted to health centers that care for most of the population. Over 70 percent of the population must trek more than an hour over mostly steep, hilly terrain to access a health center.

CCCD/Rwanda, like other CCCD countries, provided assistance in the following technical areas/interventions: vaccinations (EPI), diarrheal disease control (CDD), and malaria treatment/prophylaxis; and four support strategies (training, health education, health information systems, and operations research). CCCD-assisted services were provided in three categories of health facilities:

- 1) Consolidated (private) health centers or hospitals are privately (religious) run facilities with both MOH and private sector staff. There is little, if any, community participation in the management of the facilities. These facilities buy essential drugs, charge fees for services, and, in principle, are supervised by the MOH. Almost 70 percent of the health facilities' budgets comes from community

participation through fees for services; over 25 percent comes from the GOR through the assignment of MOH personnel and the provisions of some commodities, and less than five percent comes from donations. The Office for Consolidated Medical Facilities of Rwanda (BUFMAR), a privately run (religious) organization, is the drug procurement agency for the consolidated health facilities and also provides training for health personnel. It finances its activities by purchasing pharmaceuticals on the open market and selling them to the consolidated health facilities with a minimal price mark-up.

- 2) Public health facilities run by the government and fashioned after the Bamako Initiative (BI) also have an essential drug supply (an initial estimated two-year supply is given to each center), charge a fee for service, and include community participation in the management of the facility.
- 3) Other public health facilities, run by the government but not yet included in the BI-fashioned system, have a limited supply of drugs supplied by the government and may also charge fees for services. The money from the fees is not routinely used to help pay for recurrent costs but is given to the authorities in the communities. The authorities may or may not choose to use the money to support the health facilities. The communities do not participate in the management aspects of the health centers.

In 1991 there were 190 health centers in Rwanda of which 79 (42 percent) were consolidated and 111 (58 percent) were public. About half of the public health centers are providing more comprehensive curative and preventive health care fashioned after the Bamako Initiative. Some consolidated centers average more than 400 consultations per day; the more comprehensive public centers (BI) do fewer consultations, and the other public centers (non-BI) do considerably fewer.

CCCD Project activities were launched in three regions during the first phase of the project and expanded to all 10 regions during the second and third phases. CCCD activities during the time of the project were integrated into the government-run (public) health facilities as well as the consolidated facilities and still are.

III. METHODOLOGY

This Sustainability Assessment in Rwanda is one of several undertaken in selected former ACSI-CCCD countries. The objectives of the assessment series are to:

- a) *Assess the sustainability of child survival activities and benefits since the completion of the ACSI-CCCD Project in four countries (Guinea, Lesotho, Malawi, and Rwanda);*
- b) *Assess the progress made toward sustainability in one country where ACSI-CCCD is ongoing (Nigeria);*
- c) *Identify the contributing factors and/or constraints to sustainability, and*
- d) *Identify lessons learned about sustainability within and across the countries that may have application to similar development efforts.*

For the purposes of this Rwanda assessment, sustainability is defined as the continuation of activities and benefits beyond the PACD, whether financed by the host country government or by outside donors.

In this assessment, the team was guided by the Sustainability Strategy developed in December 1990 by ACSI-CCCD and the University Research Corporation. This strategy grew out of a Sustainability Study Series led by Tom Bossert and conducted by A.I.D. that examined the sustainability of 49 A.I.D.-sponsored health and sanitation projects in five countries. This series proposed several conditions or criteria that, when met, are thought to promote sustainable projects. Later when the strategy was developed, indicators were added for each of the criteria in order to operationize the criteria and assist in monitoring progress toward sustainability.

The evaluation team, engaged by Atlantic Resources Corporation, included:

Alain Lefevre, M.D., MPH, Health Economics/Finance and EPI Specialist

Aissatou Lo, MPA, Health Education and Training Specialist

Kandjoura Drame, M.D., MPH, Cost Recovery Specialist

Harry Godfrey, Public Health Specialist/Team Leader

This is the same team that undertook the CCCD/Guinea sustainability study from January 18 through February 3, 1993. Following the Guinea assignment, the team continued on to Rwanda.

A CDC assignee to AID/Washington, Kathleen McDavid, accompanied the team as a resource person. Before joining the team in Guinea she was briefed at CDC/Atlanta by Mark LaPointe and David Gittelman, who backstopped CCCD/Guinea and CCCD/Rwanda operations, respectively, from Atlanta.

The team arrived in Rwanda on February 6, 1993, and prepared a two-week workplan through February 19. It was necessary to reduce the plan to one week and leave Rwanda on February 13, 1993, due to the undeclared war which was, until recently, confined to the north but then started advancing toward the capital city of Kigali.

The team met with as many of the key MOH personnel as possible and held in-depth meetings with USAID, WHO, UNICEF, French Cooperation, and Belgian Red Cross before going to health centers in and around Kigali to observe the status of each of the three CCCD technical interventions (vaccinations, diarrheal diseases, and malaria). The team sought to determine whether the interventions were being continued and, if continued, to what degree.

The support strategies (training, health education, health management information system, and operations research) were looked at in the same manner.

In this study, as in the study in Nigeria and in Guinea, the assessment team felt it necessary to include Ownership as a sixth project-related criterion influencing sustainability of project activities. To assess Ownership the team included an additional indicator, "perception of project need at all levels," to the four previously proposed by the Nigerian team.

The team also added two other indicators: "public perception" as the first criterion of Perceived Effectiveness; and "procedures for ending CCCD Project assistance" to the fifth criterion of Constituency Building Through a Process of Mutually Respectful Negotiations.

The six project-related criteria with over 30 indicators were used to determine the degree, if any, of sustainability of the interventions and support strategies. Five non-project-related (external) factors with more than 20 indicators influencing sustainability of project activities were also examined (see IV.A.).

The team planned to look at the project benefits and activities for each intervention and determine the extent to which these are now being sustained. EPI coverage data, ORS utilization rates, and other CDD and malaria data were unavailable to the team. Therefore the team was not able to determine the extent to which benefits are being sustained because of the shortened visit. However, information about project-related activities and the extent to which they are being sustained was readily available, so the team chose to examine the extent to which the project activities (many of which are also indicators), for each of the seven interventions and support strategies, are being sustained.

The six project-related criteria with over 30 indicators were used to determine the degree, if any, of sustainability of the interventions and support strategies. Five non-project-related (external) factors with more than 20 indicators influencing sustainability of project activities were also examined (see IV.A.).

Each indicator was examined and judged by the team as + (positive influence on sustainability), - (negative influence on sustainability), or N/A (non-applicable). Based on the extent to which indicators were met or not met, each intervention and support strategy was scored as follows: 0 = not sustainable; 1 = permanent activities but decline in quality; 2 = permanent activities with maintenance of quality; 3 = permanent activities with improved quality. The indicators were not weighted for value, therefore the + or - status of the indicators were not totaled to determine the degree to which criteria were met. Team consensus determined the degree of sustainability of each intervention and support strategy.

The team did not debrief with the MOH nor with USAID (with their concurrence) in order to complete the scheduled field visits.

IV. FINDINGS

A. Non-Project-Related (External) Factors Affecting Sustainability

Economic Factors

The most serious threat to Rwanda's social and economic stability since independence in 1962 is the continuing undeclared war between the government and Uganda-based Rwandan rebels. The rebels, many of Tutsi origin, invaded the northeast part of the country in October 1990 and now threaten the capital city, Kigali. Consequently, of 35.5 billion RF government expenditures in 1991, 37 percent or more than 13 billion RF were spent on defense while 22 percent or 7.8 billion RF were spent on social services.

The economic situation has been deteriorating for years, even before the 1990 hostilities began. The main source of foreign exchange is the sale of coffee, adversely affected by price declines and foreign exchange fluctuations. After the November 1990 devaluation, the exchange rate went from RF 75 to RF 120 per dollar. This devaluation reduced government funding for the health sector from 5.3 percent in the 1980s to 4.3 percent in 1990. The official exchange rate during this study was RF 144/\$1.00 and RF 170-180/\$1.00 on the parallel market.

The part of the health budget allocated to personnel costs has undergone a slight increase between 1977 and 1991. It was 52.8 percent in 1977, between 65 percent and 68 percent in 1988, 1989, and 1990, and 55 percent in 1991. Most other African countries on average allocate 80 percent of health budgets to personnel costs, leaving few funds available for operational expenses.

The budget for medicines has diminished in real terms from over 30 percent in 1977 to less than 10 percent over the last years. It remained at around \$135,000 from 1977 to 1991, while the overall operating budget went from \$450,000 to \$1,700,000. Since the cost of medicines has increased considerably, this implies an even greater drop in the quantities of drugs available throughout the health service facilities.

Recent construction of two hospitals with 200 beds each (one of the hospitals cost approximately \$11 million) raises the question of recurrent costs. Even if there is a progressive start-up of services with partial cost recovery, the impact on health sector personnel and operating budgets will be considerable. As it is, 75 percent of health's recurrent cost budget goes to hospitals, which is virtually all curative care.

A special MOH financial problem, back pay for workers and back payment for supplies, has been an issue for over 10 years. In 1991, MOH debts accrued as follows:

- back pay for salaries: \$650,000;
- debts to suppliers: \$675,000, and
- payments owed for medical care in foreign hospitals: \$200,000.

Because of the economic downturn and the 1991 inflation rate of 15 percent, per capita income by the end of 1991 was below that of 10 years ago. In late 1990, the government initiated a comprehensive structural adjustment program to combat the continuing economic crisis. However, the armed conflict and related domestic security problems have affected the economy to the point that the structural adjustment was unsuccessful notwithstanding the sacrifices made.

Resource Factors

MOH medical personnel are generally well trained in medicine or nursing but have received little, if any, training in management. Growth of the private sector (MOH staff drawn away from public service) and expansion of health centers (need for more personnel in the public health sector) is causing a severe shortage of personnel at all levels. Staffing of two new hospitals exacerbates the personnel shortage. In the rural areas most centers employ fewer than seven people, only three or four of whom are qualified to give care.

Although necessary, it has not been possible to increase personnel at the MOH during 1991 because of budget constraints. There is a considerable lack of staff in health facilities. Personnel evacuated from war zones have been reassigned temporarily to health facilities in the Ruhengeri and Byumba health regions. Personnel in consolidated health facilities have not been retained by the MOH because of the budget.

The lack of personnel is linked to various elements:

- the increasing number of health establishments that do not take into account the number of health professionals who graduate each year from schools of health sciences. Staff needed for the operation of new health centers and hospitals is taken by facilities that are already operational;
- proliferation of the private sector which attracts a growing number of health professionals; and
- imbalance in personnel distribution, movement of peripheral health center staff toward large urban centers.

Over the last years, government personnel movement was frequent, as well as the departure of paramedics to other sectors, public and private. In 1991, of a total of 2,000 permanent personnel with tenure, close to 20 percent transferred, while six percent left the Ministry. In other words, turn over has affected 26 percent of permanent Ministry personnel in only one year. Among the 2,800 health workers under contract (without tenure), many have canceled their contracts. In 1991, five percent of these health workers rescinded their contracts.

The legalization of private practice in 1989 attracted many MOH physicians, nurses, and pharmacists into the new private health sector. The opening of medical offices, clinics, and private pharmacies has been very attractive for Ministry personnel, especially considering the cut in MOH salaries and the decrease of purchasing power. At the end of 1991, there were already 21 medical offices. Most of these private facilities are in the town of Kigali (19 of 21 offices), the only location where the population's purchasing power is high enough to allow these offices to make a profit.

Political Factors

The Republic of Rwanda is a long-standing one-party state led by a strong president with wide-ranging powers. In 1990 dramatic steps were taken toward political liberalization. Opposition parties are now legal, the press is free, and an interim coalition government was established to lead the way to open elections. It was hoped that the coalition government would be able to negotiate a peace settlement of the armed conflict in the north of the country and establish domestic peace and stability, but as yet this has not happened.

The war has interrupted health care for the people in the northern regions. In 1991, 14 health facilities located in the combat zone were destroyed or closed. This included five health centers in the Ruhengeri health region, or 25 percent of facilities there, and six health centers in the Byumba health region, or almost half of their health facilities. The health workers in those centers were reassigned to refugee camps further south to support the personnel already in place.

Social mobilization is carried out by a community member of the one-party political system who exercises authority over his/her constituents. With the advent of a multi-party system, social mobilization will depend more on voluntary participation in health services than on a party member's authority.

Socio-Cultural Factors

Rwanda is still experiencing the ill-effects of its long-abolished, ethnic-based caste system. While there is social mobility between the two major groups (84 percent Hutus, 15 percent Tutsis, 1 percent Twa) there remains the left over ill feelings of dominance by the minority over the majority group before the majority took control of the administrative structure in 1959. These circumstances have been the cause of violence between the two groups since independence in 1962. This also caused large numbers of Tutsis to leave the country, and the armed struggle occurring today is the consequence.

Environmental Factors

Rwanda is one of the poorest (\$300 per capita), most densely populated, and intensively cultivated countries in the world. The population is 93 percent rural and the work force is overwhelmingly engaged in agriculture. The population is distributed relatively evenly over the country's hillsides and therefore there are very few villages. Accessibility to health facilities for a scattered population is a challenge.

Epidemics of diarrhea, including bacillary dysentery, affect the population. In 1991, a cerebro-spinal meningitis epidemic broke out in the Mutara area and a flare-up of meningococcal meningitis appeared in two communities of the Gitarama and Kigali regions. A cholera epidemic erupted in the Lake Kivu tributary health regions. As in many Central and East Africa countries, AIDS is a major health problem.

B. Project-Related Factors Affecting Sustainability

Table 1 on the following page shows the status of indicators reviewed for sustainability of CCCD Project activities. At the bottom of the chart is a score attributed to each of the disease interventions and support strategies based on the extent to which indicators/activities are being continued. A brief explanation of the results is given below:

Perceived Effectiveness

- A. Workplans and/or policy statements exist for all of the CCCD interventions and support strategies at the national level. Since the study was confined to the capital city, confirmation of workplans at the regional and local levels was not possible.
- B. Morbidity and mortality reporting is integrated into the HIS for all the CCCD target diseases, and a special survey in 1992 was conducted to measure impact of training and health education including their impact on malaria and diarrheal diseases.
- C. Special malaria studies were done in 1991 and 1992 including an entomological study and a drug resistance study. At least three diarrheal disease studies were done between 1989 and 1992 to learn mothers' ORT knowledge, attitudes, and practices, case management in health centers, and use of sorghum-based porridge for ORT. During the ACSI-CCCD Project, two regionally sponsored (East Africa) operations research studies associated with EPI were done in 1985 and 1986 to ascertain immunogenicity of measles vaccine and to determine the possibility of HTLV-III transmission through routine immunization practices.

Table 1: Sustainability Table

Favorable (+) or un-favorable (-) status of indicators for sustainability of project services and support systems.

CCCD/RWANDA

PROJECT RELATED CRITERIA AFFECTING SUSTAINABILITY AND THEIR INDICATORS

1. Perceived Effectiveness

- A. Development of workplans and policy statements at national, district, and local levels.
- B. Implementation of HMIS or special surveys to measure project impact.
- C. Completion of operations research and special studies to assess program quality and develop solutions.
- D. Use of data to make decisions, identify problems, develop solutions, and to confirm project's importance at health sector community meetings.
- E. Adequate staffing and resources at the service delivery level.
- *F. Public perception of project effectiveness.

2. Integration and Institution Strengthening

- A. Effective supervisory system (using checklists) which decentralizes technical and managerial responsibility to the peripheral level.
- B. Integration of service delivery at delivery sites.
- C. Integration at national level into existing MOH structures.
- D. Support activities operational and integrated at national level.
- E. Competency-based assessments of worker performance.
- F. Reliance on host country technical expertise

3. Local Financing, Community Participation, and Private Sector Provision of Services

- A. Assumption of project costs by government.
- B. Implementation of fee-for-service/cost recovery.
- C. Private provision of project services.
- D. Donor complementarity and coordination.

4. Strong Training Component

- A. Training strategy developed and implemented.
- B. Continuing health education policy developed and implemented.
- C. Implementation of supervisory system.
- D. Completion of facility training needs assessments.
- E. Trainers trained in how to train.
- F. Project training activities integrated into existing MOH training structures.

5. Constituency Building Through a Process of Mutually Respectful Negotiation

- A. Nationals participate in country assessment, project development, and project modification and clearly view the project as a priority.
- B. Partners participate in project workshops.
- C. MOH procedures facilitate the inclusion of local concerns and decisions within national level plans.

*D. Procedure for ending CCCD Project assistance.

6. Ownership

- *A. Perception of project need at all levels.
- B. Perception of project ownership at all levels.
- C. Project-related decisions are made by organizations/bodies which represent local constituencies.
- D. Project development and modifications originate with nationals.
- E. Continuously increasing assumption of the project (costs, management, etc.) by community members who are the beneficiaries.

Criteria	EPI	CDD	Malaria	Training	H. ED	HMIS	Op. Res.
1							
A	+	+	+	+	+	+	+
B	+	+	+	+	+	+	-
C	+	+	+	-	-	+	-
D	+	-	-	+	+	+	+
E	-	+	-	-	+	-	NA
F	+	+	?	NA	+	NA	NA
2							
A	+	+	+	+	-	+	-
B	+	+	+	NA	+	+	NA
C	+	+	+	+	+	+	+
D	+	+	+	-	+	-	-
E	+	-	-	+	-	-	-
F	+	+	+	+	+	-	-
3							
A	-	-	-	-	-	-	-
B	-	+	+	-	-	-	NA
C	+	+	+	+	+	+	-
D	+	+	+	+	+	+	-
4							
A	+	+	+	+	+	+	-
B	+	+	-	+	+	+	-
C	+	+	+	+	-	-	-
D	+	+	-	+	-	-	-
E	+	+	+	+	+	+	-
F	-	-	-	-	-	-	-
5							
A	+	+	+	+	+	+	-
B	+	+	+	+	+	+	+
C	+	+	+	+	+	-	+
D	-	-	-	-	-	-	-
6							
A	+	+	+	+	+	+	-
B	+	+	+	+	+	+	+
C	-	-	-	-	-	NA	-
D	+	+	+	+	+	+	+
E	-	+	+	+	-	-	-

Score:

0 = Not sustainable, 1 = Permanent activity but decline in quality, 2 = Permanent activity and maintenance of quality, 3 = Permanent activity with improved quality, NA = Non Applicable, * = Not yet developed

*Added by the Guinea team.

- D. Supervision, HIS, study and/or survey data have been used to identify problems and perhaps, to a lesser degree, to develop solutions. For instance, recent supervisory reports reveal that malaria treatment policy is not being respected, but no corrective action has been taken. On the other hand, 1992 study data influenced the health education division to train two members per community to take charge of community mobilization. Studies also influenced the decentralization of training and supervisory activities to the regional level.
- E. Staffing, in general, is inadequate at all levels. It is worsening at the higher levels since the private practice of medicine (permitted since 1989) is a drain on already limited resources. Twenty-nine private clinics have been established in the past two years. A 1992 study found that only 30 percent of health centers visited had adequate numbers of trained staff. There are less than 270 public health physicians and more than 280 public health facilities, including 34 hospitals. This constitutes one physician per 27,600 inhabitants and about one nurse per 6,000.

In urban areas there is an average of seven qualified health workers per health center while in rural areas there are but two. A recently ordered 20 percent reduction in salaries plus increased workloads due to health centers adopting the BI strategy are negative factors when considering adequate staffing at the service deliver level.

Analyses and reports to and from the central level HIS are incomplete and late due to inadequate staff and computer resources. One exception may be in health education where, at the central level, 10 professionals are assisted by Ministry of Education staff and at the service level some health education activities are conducted by social workers.

- F. Public perception of EPI is evidently good given the 1992 vaccination coverage rates which exceeded 80 percent, and the dropout rate between DTP/polio-one and polio-three was only 10 percent.

An effective follow-up (home visits) system exists in Rwanda. Mothers accept well the use of ORT, perhaps even better than do health center personnel. The 1992 study showed that more than one in four children with diarrhea coming to health centers had already received some form of treatment. No studies were done to determine the public's perception of the efficacy of malaria treatment.

Integration and Institution Strengthening

- A. CCCD was instrumental in developing the very effective supervision system to follow up on the training phases, to assure quality of service, and to identify and resolve problems. Supervision has been decentralized to the regional level and includes private and public health facilities. A checklist integrating the three CCCD interventions plus HIS and nutrition is used on a quarterly basis. Results of the supervisory visits are entered in the

health center ledgers and a report is submitted to the center director, the community management committee, the administrative head of the community "bourgmestre," and the regional health director. A 1992 study concluded that CDD and malaria activities received less emphasis during supervisory visits than did EPI, family planning and nutrition.

The Health Education Division does not take advantage of the supervision system even though the EPI component of the supervisory guide includes a section on health education and social mobilization. The Division does not use the information gathered during the supervisory visits. Also, since all the preventive services are not well coordinated at the central level (leprosy, tuberculosis, etc.), there is duplication in the supervisory system.

- B. The three CCCD interventions, plus health education and HIS, are all well integrated into the health center activities at the delivery sites.
- C. All CCCD interventions and support strategies are integrated into the MOH structure at the central level. The three interventions do not, however, have equal status in the MOH hierarchy as EPI is classified as a division and the two other interventions, CDD and Malaria, fall under the Epidemiology Division. This, along with the disparate supervision of the interventions, may account for the superior performance of EPI relative to the other interventions.

The Health Education Unit has been elevated to Division status permitting it to respond to the health education needs of all the health programs and projects.

- D. The support activities (HIS and health education) are operational and integrated into the MOH structure at the national level. Health staff are trained with assistance from these two support services and health educational materials and reporting forms have been developed and distributed to and used by health providers.

OR exists on the MOH organizational chart in the Division of Information, Research, and Documentation under the Director General. It was not determined if anyone is presently responsible in the Division for operations research or if there were any OR activities ongoing.

Training is arranged, funded, and provided by the individual programs and projects. The Division of Justice, Education and Planning which is, in principle, in charge of training, is notified of program or project training plans but, for the most part, does not arrange for nor participate in the training activities.

- E. Other than through the supervisory system, there exists no competency-based assessments of worker performance. Information available from supervisory visits that could be used to improve worker performance is generally not exploited.

- F. There is certainly ample host-country technical expertise in Rwanda regarding EPI, CDD, and health education. The training division and Malaria program may be able to benefit from outside technical assistance to help establish a more effective malaria control program. HIS would benefit from outside technical assistance especially during the computerization and decentralization of the HIS to the regional level.

Local Financing, Community Participation, and Private Sector Provision of Services

- A. The team found no evidence that the GOR has assumed any CCCD Project costs since PACD. UNICEF has assumed most of the costs. The GOR continues as best it can to pay health workers salaries. Communities where consolidated or BI type health facilities are in operation contribute significantly to recurrent costs by paying a fee for health services.
- B. Fees-for-services help pay recurrent costs for CDD and Malaria. EPI and support strategy costs are paid for mainly by UNICEF.
- C. Approximately 50 percent of health services are provided by the private sector through consolidated (religious affiliated) health centers which have been in operation for many years and private practice offices (29) which became legal in 1989. The consolidated health centers offer health education and training and participates in the national health information system. The three CCCD interventions have been integrated into the consolidated health centers from the beginning of the project. There was no evidence of the private sector participating in the OR component of CCCD activities.
- D. Donor coordination and complementary action is evident in all the CCCD activities with the exception of OR. Health education and/or social mobilization is supported by UNICEF, GTZ, WHO, Rotary, Franco-Belgian Bilateral Coordination, and others. UNICEF, WHO, World Bank and others support training in EPI, CDD, malaria, and HIS.

Strong Training Component

- A. A training strategy was developed and implemented for the CCCD interventions and support strategies. Although the project did not attain its training target before PACD, 278 physicians and other health workers out of 389 received training in CCCD interventions. After the project, an ambitious plan to train health center personnel was carried out by initially training trainers. Since the end of the project, 178 health workers received two week's CDD training and 100 more are to receive training in 1993. There have been at least three EPI, malaria, CDD, and HIS training sessions per year since 1991.

Health education training begun under the CCCD Project was discontinued after the project. In the public system, only the World Bank-assisted Family Health Project includes health education training concentrating on training of trainers. A health education strategy was designed by the private sector (BUFMAR) for the staff in consolidated health centers.

- B. EPI, CDD, and HIS continuing education sessions are conducted on a quarterly basis (malaria benefits very little). The objective is to have at least three well-trained health workers per health facility. Although the total number of health workers who have benefitted from continuing education was not available because each region maintains its own records, it was learned that the Kigali region alone provided training for 201 health staff since 1990. At least six health workers in each of the centers that the team visited attended continuing education sessions either through EPI or the Family Health Project (only the Family Health Project includes health education training). The five-day training sessions are divided into two days for EPI, one day for CDD, one day for HIS, and one day for any subject(s) requested by the region. It is estimated that 900 health workers have participated in these sessions.

The private sector entity, BUFMAR, has an ongoing training strategy that provides practical follow-up in the consolidated health centers beginning six months after initial training.

- C. The well-structured supervisory system is organized from the central to the peripheral levels. However, supervisory visits are less regular since the end of the project due to limited resources. Fewer funds are available to pay per diem for supervisory visits, or to maintain an aging vehicle fleet. The MOH vehicles that were requisitioned for the war effort were the more reliable ones. (Supervision is discussed more fully under Integration and Institution Strengthening above.)
- D. Facility-based training needs are assessed regularly during supervisory visits and are also occasionally determined as a result of special studies or HIS analysis. The regions choose training candidates after consultation with health center directors. The directors propose candidates after reviewing the supervisory reports.
- E. Training of trainers (TOT) is used as a special strategy to train the maximum number of service delivery personnel. National and regional program managers were trained as trainers under the CCCD Project but as yet have not provided training to others. Additional training, however, is scheduled for May 1993 with WHO assistance.

BUFMAR has adopted a strategy of TOT for directors of health centers and for regional health staff in charge of health education.

- F. Project training activities are not integrated into the MOH training structure. The Division of Judicial Affairs, Education and Planning (JAEP) is in charge of training. It coordinates short and long term overseas training; health education in the primary and secondary schools (with the Ministry of Education), and health education curricula in the health science schools including the medical school (with the Ministry of Higher Education). However, health programs and projects do their own planning, organizing, and executing of training activities and inform the Division of JAEP.

Constituency Building Through a Process of Mutually Respectful Negotiations

- A. Rwandans actively participated in the initial country assessment for the CCCD Project and pushed for project modifications once the project was under way. Rwandans clearly view EPI, CDD, and Malaria control as priorities, as evidenced by high coverage rates, relatively high knowledge and use of ORT, and recognition that malaria is the leading cause of morbidity among Rwandans.
- B. Throughout and after the CCCD Project, external donors, non-governmental organizations, and others (UNICEF, WHO, WB, Consolidated Health Centers [Centre Agréés], USAID) worked together and participated in nearly all relevant workshops.
- C. With the introduction of the Bamako Initiative (BI) came the establishment of community management committees, which generally consist of 30 members and a board of five members. This new BI system, begun in 1990, functions in almost half of the public-run health centers. The management committee represents the population which selected it and therefore serves as an avenue through which the community voices its concerns. This mechanism for including local concerns and decisions within national level plans is a very important component which, when operational and effective, has a profound positive impact on project sustainability. In non-BI public health centers, mayors rather than management committees are responsible for assisting health centers in problem solving and management. Public health centers deposit their revenues into general commune accounts which are controlled by the mayor's office. There is very little collaboration between the mayor's office and the health center in deciding how the health center revenues are to be used. Usually the mayor makes the decision.
- D. Unfortunately, the way in which the CCCD Project came to a close was harmful not only to the sustainability of the project activities but also to the future relations of the participating groups. The project ended abruptly and thus the MOH was not prepared to continue project activities in the manner in which the project had implemented them. The MOH thought that the project would be renewed. It took over four years for USAID to normalize its relationship with the Ministry of Health. The team received numerous comments from Rwandans about their wanting to have participated in the transition. Given these strong feelings, the team felt it important to include "procedures for ending the CCCD Project" as an important indicator of project sustainability.

Ownership

- A. Project activities are perceived as needed and very important at all levels. The June 1992 study confirmed this perception for CDD activities. In addition, CDD is a national program which is totally managed by Rwandans. It is an important part of the Division of Epidemiology in the Ministry of Health.
- B. The CDD program clearly is "owned" by Rwandans. Ownership of the newly developed training of trainers strategy is an important accomplishment of the entire epidemiology division. The same ownership is true for EPI, which is managed by its own division and appears to be stronger than all the other components. Rwandans are faithful in conducting regular biannual vaccination coverage studies. They have also initiated special studies on tetanus and polio.
- C. While decisions are made by Rwandans at the national and regional levels, Rwandans at the local level are only partly represented. For Rwandans living in areas which are served by Bamako Initiative health centers (about half of the public health centers), committees exist to represent local constituencies. These committees are very young and under-developed and do not yet function as intended, such as serving as avenues of feedback to local constituencies. Given the relatively low number of community members participating in the decision- making process and the recent introduction of the Bamako Initiative, the team found that the impact of this indicator has not been as great as it could be.
- D. Considering that all project interventions are managed by Rwandans, and that since the end of the CCCD Project several modifications have been made to the program, it is evident that these originated with Rwandans. This indicator impacts favorably on project sustainability.
- E. Finally, with the initiation of the Bamako Initiative has come the continuously increasing assumption of most aspects of the project (costs, management) by community members. Although in its early stages, the BI has established committees to manage the revenues from the health centers and has established a system of fee for services in public health centers. If the BI continues to develop and the number of BI centers grows as expected, this indicator will continue to have a highly positive impact on the sustainability of project activities.

C. Disease Interventions and Support Strategies

Vaccinations (EPI)

EPI began operations in Rwanda in 1980 nearly five years before CCCD. However, it was not until the CCCD Project got under way in 1985 that there was considerable impact on immunization levels: BCG coverage increased from 49 percent in 1983 to 90 percent in 1987,

DTC-3 from 36 percent to 79 percent, and measles from 53 percent to 75 percent. This tremendous progress, aided by a strong private health sector that provides nearly 50 percent of vaccinations, resulted in an important reduction in immunizable diseases, especially measles, whooping cough, and polio. To reinforce this approach, a "Program of Accelerated Immunization" was officially launched in March 1988 in the region of Butare by the presidential couple. Results improved even more, and the 1992 survey showed vaccination coverage rates of well over 80 percent.

Yearly operation plans continue to be produced with the cooperation of UNICEF. UNICEF's role, however, will become limited as it scales down assistance in the next two years. At the end of each year there is an assessment of the execution of these plans. The persons responsible for the program analyze the reasons why certain activities have not been carried out and decide whether they should be repeated the next year or not. Each annual operation plan is summarized in a table, allowing the monitoring of accomplishments. Annual operation plans are also produced in each region.

Vaccination coverage was determined every year by the WHO survey method (now proposed for every two years) and compared with HIS data. In 1990, coverage data obtained by the surveys was significantly higher than those reported by the HIS. The difference varied from six percent for DTC-3 to 18 percent for DTC-1. The surveyors could not determine if this situation was a result of undernotification of routine vaccinations or an overestimation of target population size.

Other factors indicating EPI progress and sustainability since the end of the CCCD Project are the analyses of suspect polio cases in cooperation with Rotary International; special studies carried out for cold-chain quality control, and, since October 1992, the use of color indicators used to verify cold-chain quality from the point of manufacture up to the vaccination procedure.

In spite of this progress, the existing situation in Rwanda, particularly the armed conflict in the north with all of its repercussions on life in general and health services in particular, may lead to deterioration of the excellent immunization coverage.

RECOMMENDATION

The search for alternate funding sources for CCCD disease interventions and support strategies should begin now in preparation for the time when UNICEF starts scaling down assistance.

Diarrheal Disease Control (CDD)

Rwanda's national diarrheal control program (CDD) received impetus from 1986 CCCD Project data that showed diarrhea as the second leading cause of both morbidity and mortality in children under five. CCCD had two specific CDD objectives: to establish ORT as the primary treatment in health centers and to increase use of home-prepared ORS. A 1988 evaluation determined the first objective had been achieved but could not measure the second.

The CCCD Project assisted the CDD program in developing a national strategy and workplan, with equipping ORT units with ORS packets, and by highlighting health education and community participation. The project had two training centers for health workers instructing them in establishing a nationwide network of ORT units. The 1988 evaluation pointed out areas for improvement including equipping ORT units with adequate materials for demonstration purposes and standardizing measurements for ORS preparation and improving supervision and training.

Rwanda adopted an updated, more aggressive CDD policy in 1989 that strived to reduce diarrheal disease-caused mortality by an additional 10 percent between 1992 and 1993. Specific objectives included intensive training for health workers and increased access to ORS packets and proper treatment for diarrhea and dehydration.

Diarrheal disease data have been incorporated into the national HIS with local information forwarded to the national level via regional offices. Delays have occurred, however, because of limited computer facilities and slow reporting by health centers.

CDD studies have had a mixed impact on program policy and implementation. The first study in 1989 that surveyed mothers' KAP concerning ORS provided a basis for revisions in the national program which experienced difficulties after the CCCD Project ended. Another study on case management of diarrhea patients in health facilities that included perceptions of health workers and mothers has provoked discussion of possible changes, but none has yet been adopted. Finally, operations research has been carried out on the effectiveness of sorghum-based porridges but the results were not available to the team.

Inadequate staffing of health centers -- only 30 percent had sufficient trained staff in 1992 -- is a problem throughout the system that also mitigates against sustainability.

Public perceptions of ORT by and large acknowledge the treatment's effectiveness. Health workers' attitudes, on the other hand, question the treatment's effectiveness.

The present CDD supervisory system is a well-conceived, integrated, decentralized supervisory system which exists for EPI, CDD, HIS, and family planning, but in practice EPI is given emphasis and supervision of other activities suffers. This system, including checklists (CDD activities are not adequately represented), provides a mechanism for identifying training needs. However, most often training candidates are identified by heads of health centers instead.

EPI receives a disproportionate amount of attention (resources); as a result, the other activities are less supervised, thus impact on the CDD program is negligible.

The CDD program is totally integrated into the MOH at the national level. A drawback for the CDD program is its position in the MOH; it is located one tier below that of EPI yet both have comparable programs. With respect to support activities:

- health education activities are well coordinated with the existing national HE division's activities.
- CDD training activities are organized and planned by the CDD office overall, yet training activities are considered unintegrated into the national training division.
- CDD is totally integrated into the national HIS and CDD studies have been integrated to the extent possible.

Host country competence appears to be high, yet thus far no locals have been used for their expertise to design and/or carry out special studies or research.

No evidence exists which support the Rwandan government having assumed CCCD Project costs for CDD. Most health centers, whether public or private, charge a fee for consultations. A cost recovery system is being put in place in anticipation of the day when funding will no longer be available.

Religious denominations manage over 40 percent of all health centers (called consolidated) in Rwanda. In addition, there are about 29 strictly private health centers (5 percent of all health centers). They are judged to have some positive impact on sustainability as they force public facilities to concentrate on the provision of quality services.

Among donors, UNICEF, the World Bank, and WHO are the most important; UNICEF in training and ORS supply, the Bank in training of trainers, and WHO in supervision training.

The CDD program has a training strategy that focuses on an intensive two-week training session for health workers in ORS treatment for diarrhea. This strategy is being modified based on findings of a June 1992 study. CDD continuing health education consists of regular training sessions which are integrated with EPI, HIS, and soon ARI elements.

CDD training activities are not well integrated into existing MOH training structures.

RECOMMENDATIONS

1. CDD, ARI, and Malaria programs should be put on a par with EPI in terms of resources and recognition if they are to become effective programs.

2. The findings of the June 1992 CDD study need to be incorporated in the training strategy in order to address weaknesses in supervision and inadequate service delivery in CDD.

Malaria

A program to combat malaria was established in 1987. Implementation of this program was critical because of the constant increase in the number of malaria cases in the country, even in high mountainous regions considered non-endemic, and due to the appearance of a high number of *plasmodium falciparum* cases resistant to chloroquine.

The latest national policy document was produced in July 1991 along with a national development plan. There are no working plans at the regional and local levels. Application of the national policy is not always upheld in health facilities, mostly because of logistical reasons. Chemoprophylaxis for pregnant women, for example, is not given in most of the health centers. The decision not to offer this to pregnant women is made by those in charge of each individual health center and is usually due to a lack of adequate stock and concerns about drug resistance prevalent throughout the country.

Malaria was considered the weakest disease intervention of CCCD upon final evaluation of the project in 1988. The belated takeover of the program by the project and its weak management did not permit the accomplishment of expected objectives.

Anti-malaria activities were to be integrated into PHC, according to the short and medium term action plans produced in October 1989, for the period 1990-1994. A meeting of donor and lender agencies was organized by the Ministry of Health in February 1992 to discuss possibilities of financing the plan.

Although malaria is the number one cause of morbidity and mortality in children under five, the malaria program probably benefitted the least in terms of training under CCCD among the three interventions. Malaria is all but ignored in the continuing education policy. Even its position in the organizational structure does not, nor does CDD, receive the same priority as EPI. It is difficult to know whether these conditions are due to the complexity of anti-malaria measures or the lack of confidence in their effectiveness, or a combination of both.

Officials responsible for the program remain optimistic, meanwhile, and are counting on meeting partners again in March 1993 for further discussion of the plan of action and possible joint financing. The program budget totals \$4,271,000, of which half is for anti-malaria drugs.

RECOMMENDATION

Since malaria is the major health problem in Rwanda and very few health staff have received adequate training in combating the disease, it is recommended that qualified technical assistance be requested to improve the organization of the malaria program and to improve program policies, action plans, and training.

Training

The objectives of the CCCD program in Rwanda were to reinforce the Rwandan government's capability to control communicable diseases through the training of individuals in the PHC program activities. The project expected to achieve the ambitious target of training 1,000 health workers and program managers by 1987. Finally, the project aimed to complete the ORT training for 278 health workers and managers through seminars at the national and regional levels, and assist two hospital centers (Kigali and Butare) with ORT training.

In 1988, only the first four regions of the project had completed training, and four regions in phase II had trained very few staff. A major constraint with the training programs was the short duration of training (three to five days), during which center directors were introduced to all project components but were not able to benefit from an adequate level of training in each program.

Additionally, the lack of qualified personnel in health centers prevented center directors from leaving their centers to attend regional level training. On the other hand, health center directors were not prepared to train their staff and to supervise them. Many training subjects were not covered by the project, such as entomology and the expansion of the HIS.

In view of this situation, the following had been recommended during the 1988 final evaluation of the CCCD/Rwanda Project:

1. Increase of assistance by other donors to support required technical assistance to reinforce the training of trainers and the training of all health center directors, as well as the institutionalization of training at the regional level so that all peripheral health center workers might benefit.
2. The deployment of Peace Corps volunteers, who might work in conjunction with regional training supervisors.

The national training policy is a component of the national health policy declaration of August 1973. It was in 1987, however, nine years after the international primary health care conference at Alma Ata, that the concept of integration of the various PHC components; maternal and child health, family planning, and nutrition was initiated in the curricula of nursing schools. In Rwanda, training of secondary level health personnel (nurses, social assistants) is the responsibility of the Ministry of Primary and Secondary Education. The introduction of primary

health care in the curricula of nursing schools led to the establishment (1987) of a health bureau in the Ministry of Primary and Secondary Education. The health bureau is charged with developing primary health care programs to be submitted to the educational council. Primary health care is an integral component of curricula in primary and secondary schools, as well as universities. Introduction of primary health care into the School of Medicine curriculum took place in 1990.

A continuing education policy and implementation of continuing education strategies were introduced by the CCCD Project, which also helped the MOH personnel acquire skills in program planning, using EPI as a model. At the time CCCD was ending, the MOH realized much still needed to be done in order to train enough personnel so that each health center had adequately trained staff. In light of this, the MOH launched a continuing education strategy. Since 1988, the epidemiology and EPI divisions have followed annual plans for continuing education, integrating EPI, CDD, and HIS. The plans have been modified so that different types and levels of personnel are trained during specific quarters.

Rwanda has been able to complete and improve upon what was learned in the CCCD Project in terms of training and in developing a decentralized strategy for continuing education of staff. The country has developed a coherent health training policy by introducing primary health care in the curricula of all schools, primary, secondary, as well as medical and health sciences schools. The MOH education division cooperates with all Ministries interested in the formulation of curricula and identifies candidates for training in county or abroad. By developing a continuing education system, instituted since 1990, the MOH intends to have available at least three trained staff members for each health center, capable of providing EPI, CDD, HIS, and ARI services. These training programs, completely organized by the people of Rwanda, are based on the identification of training needs using HIS data, results from specific studies, and results from supervisory visits. Training programs are conducted by regional training teams assisted by a program supervisor from the national level.

RECOMMENDATIONS

1. Improve the system of coordination and collaboration at the Directorate of Epidemiology and Public Hygiene so that all programs administered by this Directorate have an optimal possibility of development. To accomplish this, Malaria, CDD, and HIS programs managed by the Division of Epidemiology should benefit from the know-how of the EPI Division in planning and organizing training workshops and in supervisory activities.
2. Assess the degree to which training objectives (training three health staff per health center in EPI, CDD, and HIS programs) have been met. This assessment should collect information concerning the number of staff trained and their level of competence. This will assist future orientation in training and supervision.

3. Decentralize the training process to health center level by reinforcing the capabilities of center directors in training so that they might train their staff on-the-job and help their staff maintain and improve skills acquired during regional training.

Health Education

The CCCD Project's aim was to improve health education so as to increase involvement of the local people in the CCCD Project's programs. The goal for 1987 was to develop a coordinated strategy and a plan of operation for health education within the framework of CCCD activities. With the support of the CCCD Project, health education worked to achieve several objectives including the increasing recognition of symptoms of the targeted diseases, improving the treatment of fever and diarrhea at home, increasing awareness of the schedule for immunizations, and increasing attendance at health centers offering CCCD services.

Health education was one of the strongest components of the CCCD Project in Rwanda. Through technical assistance, training, and logistical support, the project fostered the ability of Health Education Division officials to do research, to develop and produce educational materials, to train primary care workers in promoting health messages, and finally, to establish methods for monitoring and evaluating programs.

By the end of the project, health education had become a strong contributor to the EPI and CDD programs, but the Malaria control program could not be developed to the same extent because of the delay on the part of the Rwandan staff in adopting the new treatment scheme.

The Health Education Division has gathered a significant collection of basic information on the knowledge, attitudes, and practices of health workers and of mothers regarding the three CCCD interventions. This data base offers considerable documentation for future research activities and for health education programs concerning child survival programs.

The 1988 CCCD end of project evaluation recommended:

- introducing health education methods and strategies as an integral part of the training of workers and in their continued education (taking into account the results of the KAP surveys regarding the development of educational objectives and health messages).
- developing a health education project for the Malaria program using the health messages and materials developed during the 1987 KAP survey and the newly developed plan for treating malaria. Every effort should be made to use the same promotion strategies used in the EPI mini-campaigns so as to motivate more health workers while also increasing the public's interest.

The definition of the health education policy is part of the Déclaration de Politique Sanitaire (Health Policy Statement) dating back to 1973. Health education is an integral part of

all the PHC programs and, due to the MOH's recognition of the importance of health education, it was raised from the status of a department to that of a division beginning in January 1992. The Division prepared its first plan of action for 1993 during the last trimester of 1992 after a field-based needs assessment was conducted.

RECOMMENDATIONS

1. Evaluate the impact of educational activities conducted within the EPI and CDD programs so as to plan the necessary corrective measures for these programs and then train personnel for these purposes.
2. Develop health education activities within the Malaria program so as to increase Rwandans' awareness of the preventive measures available against malaria. To measure this activity's effectiveness, the KAP surveys conducted under the CCCD Project should be re-initiated.

Management, HIS, and Cost Recovery

GOR and CCCD Management

The Rwanda/CCCD Project Agreement was signed in July 1984 and began operations in December 1984 with the assignment of the technical officer (TO). Even after the TO arrived, the project was slow in starting. Though the Government of Rwanda (GOR) was committed to the project, it was not until the second year of the project (1986) that significant GOR resources were provided. Initially, the TO's counterpart, the Director of Epidemiology, had many other high-priority responsibilities and a limited number of support staff.

Then, shortly before the mid-term evaluation in 1986, the MOH started providing vital support to the project, beginning with the assignment of a physician and three medical assistants. This commitment resulted in bureaucratic obstacles being overcome and resources being made available when needed.

Although CCCD interventions and support strategies were scattered all over the organizational chart, the project was able to integrate into the various administrative units and eventually have a positive influence on the reorganization of the MOH. Formerly, the CCCD coordinator was the Director of Epidemiology and Public Hygiene (EPH); EPI was under the Directorate of Integrated Medicine; Health Education was under the Directorate of Social Affairs, etc. Now, all of the CCCD disease interventions are under one Directorate (EPH), and the four support strategies (HIS, health education, training, and operations research) are more strategically situated. HIS and OR were removed from General Services and placed under the Division of Statistics, Research, and Documentation. Health Education was moved from Social Affairs to the Health Directorate.

Still, there appears to be inequality among the three CCCD interventions -- with EPI as a separate Division and CDD and Malaria placed under the Division of Epidemiology. If EPI's success can be partially attributed to its position of power and status in the MOH infrastructure, perhaps CDD and Malaria could fare better as Divisions as well.

Proof of effective management by the CCCD/Rwanda staff is demonstrated by the very high vaccination coverage rates, implementation of and/or improvement of CDD and malaria services as well as their support strategies, and maintenance of all but one of the project's Support Strategies (operations research) nearly five years after the PACD.

USAID/CDC Management/Administration

Technical assistance to the GOR for implementing project activities was provided by CDC through a PASA agreement with A.I.D./Washington. The understaffed USAID/Kigali office was administratively responsible for monitoring the project, managing A.I.D.'s funding of the project, and assisting with procurement of certain commodities. Evidently the division of responsibilities was not clear to all parties concerned (CCCD/Rwanda, USAID/Kigali, CDC/Atlanta, A.I.D./Washington) and at times the TO was seen as having assumed more USAID responsibilities than she should have (partially because she helped fill the vacant USAID position of health project officer for about one year). Lack of communications between the TO and USAID/Kigali resulted in conflicting signals to the MOH concerning extension of the project after the PACD of June 30, 1988. USAID's decision not to renew the project was a disappointment to the GOR since the third and last phase of the three-phase project was not implemented in sufficient time to assure that all activities were well in place and functioning satisfactorily before PACD.

Health Information System (HIS)

When the pre-project assessment was done in October 1983, the HIS recorded weekly and monthly morbidity and mortality but with significant deficiencies:

- no uniform reporting forms,
- no cumulative totals of cases maintained at health facilities or regional offices to better follow disease trends,
- no data on simple diarrhea, and
- no distinction between neonatal and non-neonatal tetanus.

With technical and financial assistance from CCCD/Rwanda, UNICEF, and other partners, most of the morbidity and mortality reporting deficiencies, except time delays, have been corrected. Data collection forms, for instance, have been modified (standardized), with assistance from the French cooperation, to better assist the MOH in program analyses and management.

HIS still remains too centralized. Reports from the health service facilities are submitted monthly to the regional level, which forwards them on to the central level where the data are compiled and analyzed. Currently, problems remain with respect to timeliness and completeness of reporting.

The study team feels that HIS has been sustained. Due to the decline in field supervisory activities and the ever increasing delays in reporting, data handling, analyses, and feedback, there has been a decline in the quality of HIS services. It should be noted, however, that there is a continuous effort on the part of the MOH and partners to improve HIS. The MOH is presently seeking assistance to reinforce decentralization of HIS services by equipping and training each of the health regions to computerize, treat, analyze, and feed back information to their health facilities on a timely basis. The Center for Studies, Research, Population, and Development (CERPOD) in Bamako has been contacted by the MOH and is prepared to assist in this endeavor if funding is found.

RECOMMENDATIONS

1. MOH should increase its efforts to decentralize HIS to the regional and peripheral levels. It should follow up on its objective of rendering the regions less dependent on the central level. Efforts should be focused to improve data collection and analysis. Computerization of HIS at the regional level should be considered.
2. All ongoing projects, new projects, and the MOH should participate technically and/or financially to assure an effective and productive regional and peripheral HIS so that all parties concerned can better manage their programs.

Operations Research (OR)

Operations research is part of the Division of Statistics, Research, and Documentation, which is directly responsible to the Director General of Health. The person responsible for OR was not located during the study.

The final evaluation of CCCD/Rwanda in May 1988 concerning the OR component of the project revealed:

- the formal OR component of the project failed to achieve its goal of five OR studies, and
- no OR study received funding from the \$50,000 line item budget.

The evaluation did show that one OR study on the immunogenicity of measles vaccine was approved by the CDC Regional Epidemiologist in January 1985 (as required at that time) and funded by CCCD regional funds.

Another OR study on the possibility of transmitting HTLV-III through routine immunization programs was approved in May 1986.

An OR National Review Committee was created in 1986. Four major research proposals were reviewed by this committee, and two were approved with minor revisions. CDC/Atlanta also approved the proposals (a requirement of the grant), and AID approved the content of the budgets submitted. However, funds were not approved in time for disbursement before PACD.

Despite the fact that 20 of the 26 indicators (activities) examined by the team appeared not to have been continued after the project ended, the OR component of the CCCD Project seems to be continuing. After the PACD, operations research on the effectiveness of sorghum-based porridge for rehydrating diarrheal cases was conducted in 1988 and 1989 at Kigali Hospital. Results of this research were either never known or were just not found during the team's visit. Special malaria studies were done in 1991 and 1992, including an entomological study and a drug resistance study. At least two diarrheal disease (not OR) studies were done between 1989 and 1992 to learn mothers' ORT knowledge, attitudes, and practices and to study case management in health centers.

RECOMMENDATION

The national OR Coordinator in the MOH should be encouraged to identify areas where OR is needed. The OR Review Committee should be re-established to approve submitted proposals and to forward them to an appropriate funding sources.

V. CONCLUSION

With the exception of the operations research component of the CCCD Project, there is no question that project activities are continuing and that CCCD services continue to be provided nearly five years after the PACD in Rwanda. However, if there exists a threat to sustainability of CCCD Project services in Rwanda, it stems not from project-related factors but from non-project or external factors. The escalating armed conflict in the north of Rwanda is contributing to the economic crisis of the country and creating havoc with the stability of the transitional government.

The team found no evidence that the GOR has assumed any CCCD Project costs since PACD. UNICEF has assumed most of the costs. The GOR continues as best it can to pay health workers salaries. Communities where consolidated or BI type health facilities are in operation contribute significantly to recurrent costs by paying a fee for health services.

In view of UNICEF's plans to scale down its assistance over the next four years, the problem of financial constraints is particularly urgent with respect to funds for vaccines. If steps are not taken to address this problem in the immediate future, the EPI and all other programs will suffer serious difficulties.

VI. LESSONS LEARNED

In examining project sustainability in Rwanda, the Sustainability Assessment team identified the following as Lessons Learned:

1. The presence of a better equipped private health sector, where the work is hard but more rewarding, is attractive to a number of public sector personnel.
2. Full and effective cooperation between the public and private sectors maximizes project sustainability. A special aspect in Rwanda is that the government has permitted, promoted, and helped sustain a private sector of consolidated health centers run by religious groups. These centers receive support from their own organizations and also from the state in the form of qualified personnel, medication, supplies for EPI, CDD, and for health training and education. With its strong contribution to service delivery (42 percent of health centers in the country), its system of self-reliance and government support and its compliance with all national health policies, this private sector has played a considerable role in sustaining CCCD activities. Today, the population has the choice of three services: public service without BI, consolidated services, or public services with the Bamako Initiative program. All three offer the same basic services. Quality of care differs among the three services according to number of trained personnel and the availability of medication. Standards of quality and availability of care are comparable for EPI and CDD, but they decline with Malaria control services in public health centers without BI, where the problem of little or no chloroquine stock persists.
3. The imbalance of structural distribution of programs in the MOH organizational chart produces uneven and variable program management and execution at all levels. Among all CCCD Project activities, EPI is the most organized, represented, and supported at all levels because it is administered by an office of its own. Since CDD, Malaria control, and ARI fall under the Epidemiology Office, they have not enjoyed the same level of development as EPI. EPI, however, includes them in its continuing education program. In supervision, EPI is more active because it has its own resources and the support of UNICEF, while the other programs have less access to resources. At the regional level, EPI supervises CDD, Malaria control, and HIS activities more or less effectively, but not to the same extent as for EPI. A structural reorganization or an improvement of cooperation among the three programs is needed at the national level to assure support of the weaker programs and to maximize the use of resources to the benefit of all programs.
4. Health personnel motivation is essential to assure program success and sustainability. In Rwanda, staff receive their main motivation from per diem received for training sessions and payment for supervisory visits, rather than from

their GOR salaries. Unfortunately these incentives are provided basically by UNICEF and the Family Health Project (World Bank). Their phase-out will have a profound impact on support activities, especially supervision. In the absence of a cooperative revision of the system in terms of sustainability and the sensitization of recipients as to the precariousness of the situation, any sudden end to these incentives will lead to a loss of job interest among many personnel and, consequently, to a drop in the quality of service.

- 5 The acquisition of skills by workers is not sufficient for ensuring the sustainability of programs if the workers do not have the necessary material resources to continue their activities. Since the end of the Rwandan CCCD Project, officials of the Health Education Division of the MOH have not been able to develop sufficient educational materials for the Malaria program. It is important to note here that the Malaria program has not benefitted from the type of support from the Health Education Division that the EPI and CDD programs have in spite of the fact that malaria is considered the primary cause of sickness and death in Rwanda.

VII. RECOMMENDATIONS

The following is a list of the team's recommendations:

1. The search for alternate funding sources for CCCD disease interventions and support strategies should begin now in preparation for the time when UNICEF starts scaling down assistance.
2. CDD, ARI, and Malaria programs should be put on a par with EPI in terms of resources and recognition if they are to become effective programs.
3. The findings of the June 1992 CDD study need to be incorporated in the training strategy in order to address weaknesses in supervision and inadequate service delivery in CDD.
4. Since malaria is the major health problem in Rwanda and very few health staff have received adequate training in combating the disease, it is recommended that qualified technical assistance be requested to improve the organization of the malaria program and to improve program policies, action plans, and training.
5. Improve the system of coordination and collaboration at the Directorate of Epidemiology and Public Hygiene so that all programs administered by this Directorate have an optimal possibility of development. To accomplish this, Malaria, CDD, and HIS programs managed by the Division of Epidemiology should benefit from the know-how of the EPI Division in planning and organizing training workshops and in supervisory activities.
6. Assess the degree to which training objectives (training three health staff per health center in EPI, CDD, and HIS programs) have been met. This assessment should collect information concerning the number of staff trained and their level of competence. This will assist future orientation in training and supervision.
7. Decentralize the training process to health center level by reinforcing the capabilities of center directors in training so that they might train their staff on-the-job and help their staff maintain and improve skills acquired during regional training.
8. Evaluate the impact of educational activities conducted within the EPI and CDD programs so as to plan the necessary corrective measures for these programs and then train personnel for these purposes.

9. Develop health education activities within the Malaria program so as to increase Rwandans' awareness of the preventive measures available against malaria. To measure this activity's effectiveness, the KAP surveys conducted under the CCCD Project should be re-initiated.
10. MOH should increase its efforts to decentralize HIS to the regional and peripheral levels. It should follow up on its objective of rendering the regions less dependent on the central level. Efforts should be focused to improve data collection and analysis. Computerization of HIS at the regional level should be considered.
11. All ongoing projects, new projects, and the MOH should participate technically and/or financially to assure an effective and productive regional and peripheral HIS so that all parties concerned can better manage their programs.
12. The national OR Coordinator in the MOH should be encouraged to identify areas where OR is needed. The OR Review Committee should be re-established to approve submitted proposals and to forward them to an appropriate funding sources.

VIII. RECOMMENDATIONS FOR FUTURE SUSTAINABILITY STUDIES

The team makes the following recommendation for future sustainability studies:

As the present criteria and indicators are deemed appropriate for studying the sustainability of CCCD technical interventions (vaccinations, diarrheal diseases, and malaria), they should be used in future sustainability studies. These criteria and indicators would benefit from minor revisions but are, nonetheless, useful as they stand. As the support strategies directly contribute to sustainability of project interventions, it is not essential to measure their sustainability.

APPENDIX A
SCOPE OF WORK

SCOPE OF WORK

OBJECTIVE OF THE CONTRACT

(1) Using the ACSI-CCCD Sustainability Strategy (which is incorporated into this contract in Attachment I), the contractor shall execute a series of sustainability assessments in former ACSI-CCCD countries, including Guinea, Lesotho, Malawi, Nigeria and Rwanda. The objectives of the assessment series are to:

- a) Assess the sustainability of child survival activities and benefits since the completion of the ACSI-CCCD project in four countries.
- b) Assess the progress made towards sustainability in one country where ACSI-CCCD project is ongoing.
- c) Identify the contributing factors and/or constraints to sustainability.
- d) Identify lessons learned about sustainability within and across the countries that may have application to similar development efforts.

BACKGROUND

The ACSI-CCCD Project is the Agency's primary child survival project for Africa. The goal of the project is to strengthen the ability of African countries to prevent and control major causes of childhood mortality and morbidity in Africa. Technical interventions include immunization and the control of malaria and diarrheal diseases. In Lesotho, the project also focused on the control of acute respiratory infections. Support strategies developed through the project include training and supervision, health information systems, health education and operations research.

Sustainability has been an increasing concern of project managers and implementors since the mid-1980's. With the 1988 amendment to the ACSI-CCCD project, the development of sustainable systems became formalized as a critical project objective. With expert technical assistance, an ACSI-CCCD sustainability strategy was developed and revised and is now ready for use as an assessment tool for country projects. This strategy identifies five key elements of sustainability and provides an array of indicators to be used in assessing the sustainability of ACSI-CCCD projects (see Attachment 1).

ACSI-CCCD projects have been implemented in 13 countries since 1981. Malawi and Rwanda closed out their ACSI-CCCD projects in 1988. During 1991, Guinea and Lesotho closed out their

ACSI-CCCD projects. Nigeria's ACSI-CCCD project is ongoing. As defined in the sustainability strategy, sustainability is the continuation of activities and benefits achieved during the life of a project, at least three years after project funding stops. According to this definition, sustainability of the ACSI-CCCD project can be assessed in Malawi and Rwanda. In Guinea and Lesotho, the potential for and early evidence of project sustainability will be sought. In Nigeria progress towards sustainability will be measured.

STATEMENT OF WORK

This is a completion type contract and the end product of this contract will be a sustainability report series. The series will include five country reports and one summary report on sustainability of child survival activities and benefits resulting from the ACSI-CCCD project. The individual country reports will be based on project sustainability assessments undertaken in Nigeria, Malawi, Rwanda, Lesotho and Guinea. The summary report will synthesize the findings and conclusions of the five country studies, extracting major lessons learned. To accomplish these tasks, the contractor shall provide or recruit and manage one project manager and three three-member assessment teams as described below.

The Project Manager

The contractor shall provide or recruit and manage one Project Manager to oversee the five country sustainability assessments and prepare the overall summary report. The project manager will:

- 1) Assist in the selection of the assessment team members,
- 2) Prepare for and participate in all assessment team briefings and debriefings,
- 3) Guide the teams in the development of specific country workplans
- 4) Oversee the coordination of all assessment team logistics,
- 5) Edit and finalize each country report,
- 6) Prepare a summary report synthesizing key lessons learned and providing guidance to African governments, USAIDs and other collaborating agencies on project sustainability.
- 7) Provide a debriefing session for AFR and other A.I.D. offices on the sustainability series and summary report.

Assessment Teams

The contractor shall recruit and manage three teams to conduct the five country-level sustainability assessments. One team will visit the Francophone countries, Guinea and Rwanda. A second team will visit the Anglophone countries, Lesotho and Malawi. A third team will visit Nigeria.

For each country assessment, the team will:

- 1) Review the project agreement, previous evaluation reports and other pertinent project documents,
- 2) Review the ACSI-CCCD sustainability strategy, the A.I.D./CDIE study entitled "Factors Influencing the sustainability of U.S. Foreign Assistance in Health 1942-1989: A Six Country Synthesis", Dec. 1990 and other related journal articles.
- 3) From the ACSI-CCCD sustainability strategy, select the specific indicators to be used for each country and define measurement strategies for each of the indicators selected,
- 4) Develop a workplan for activities to be conducted in-country, including information collection at the national level and visits to at least one district outside of the capital city,
- 5) Interview central level Ministry of Health (MOH) and collaborating officials, health workers at various levels of the system, observe health facilities and health worker performance and interview project beneficiaries,
- 6) Using the selected indicators from the ACSI-CCCD sustainability strategy and available data, assess and describe the extent to which project activities and achievements have been sustained. This includes technical effects as well as institutional effects. Findings can be summarized in table form using Attachment 1, Annex C as a guide.
- 7) Based on document review and country visit, address the following questions:
 - a) Did the project meet the five criteria identified in the ACSI-CCCD sustainability strategy as listed below?
 - Perceived technical effectiveness
 - Integration into the Ministry of Health at all levels
 - Budget levels born by local entities (e.g., MOH, communities)
 - Strong training program
 - Project negotiations conducted in an atmosphere of mutual respect

- b) How did these factors contribute to project sustainability?
 - c) Are there other important project-related criteria necessary to achieve sustainability of project activities and benefits?
 - d) Are there contextual factors (i.e., factors beyond project control) that have facilitated or constrained sustainability? If so, what are they and how have they influenced sustainability?
 - e) Is sustainability of donor projects in these countries a realistic goal? Why or why not?
- 8) Identify and document lessons learned about sustainability that may have relevance for other projects/countries, and
 - 9) After the country visits, provide a debriefing session for AFR/ONI and AFR/ARTS in Washington.

METHODS AND PROCEDURES

A preliminary outline of the Contractor and assessment team's procedures and estimated level of effort for the assessments is set forth below. Within twenty working days from the effective date of this contract, the Contractor and project manager will develop in collaboration with A.I.D. a definitive work plan for approval by the AFR/ONI/TPPI Project Officer and AFR/ARTS/HHR. The approved workplan will include a detailed schedule of the Contractor's activities, assessment dates and dates for delivery of final reports.

Timing for the Sustainability Assessments

Two teams will visit two countries and one team will visit one country. In country, the team will spend time in the capital city meeting and interviewing key officials. The team will also work in the districts visiting facilities and interviewing health workers in preparation for composing the draft report.

Current planning calls for the first team to visit Nigeria in the fall of 1992, the second team to visit Rwanda and Guinea in early 1993 and the third team to visit Lesotho and Malawi in Spring 1993. The final report will be completed by May 31, 1993.

TEAM COMPOSITION

Three-person assessment teams will be required to incorporate the necessary professional skills in (a) management and health finance, (b) epidemiology, (c) childhood communicable diseases, (d) health education and training, (e) health information systems and (f) team leadership.

French fluency will be required of the team visiting Guinea and Rwanda.

The project manager will be a senior public health official with broad experience in health policy and program development, working familiarity with the sustainability literature, excellent writing skills and fluency in spoken and written French and English.

REPORTING REQUIREMENTS

The assessment teams will provide one copy of the draft report to the USAID mission in each country two days prior to departure for review and discussion. The draft report shall include an executive summary.

The project manager with technical assistance from team members will edit and produce the final draft of the five country reports. The contractor will have 12 working days (unless otherwise authorized by AFR/ONI) following the return of each assessment team to produce final edited draft of the country reports for AFR/ONI and ARTS approval. Three copies of each report will be submitted to AFR/ONI. AFR/ONI and ARTS will review, make final editing and substantive recommendations and return the approved drafts to the Contractor within 10 working days. Upon re-editing, the Contractor will have five working days (unless otherwise authorized by AFR/ONI) to submit 10 copies of each final country report to AFR/ONI.

Task

Location

Home Office: Technical and operational guidelines agreed to and work plan finalized with the contractor; assessment teams recruited; communication with missions and the Africa Bureau preparation for the team planning meeting; logistics planning; preparation and finalization of the country and summary reports and translations if required.	Washington
Assessment Team: Review project documents, participate in team planning meetings	Washington
Attend briefings by and interview regional-level project implementors at the Centers for Disease Control	Atlanta
Interview national, USAID and other donor officials, visit field sites, review available data, prepare draft report and debrief the USAIDs	Countries
Debrief AID/Washington	Washington

The suggested format for the country reports is as follows:

- Executive Summary
- Table of Contents
- Body of the report - this should incorporate elements of the scope of work, including:
 - * purpose of assessment
 - * methodology
 - * findings with respect to sustainability of project activities and benefits,
 - * discussion of the sustainability questions posed earlier in the SOW
 - * broad lessons learned
- Appendices

The body of the country reports should be no longer than 40 pages. Detailed discussions of methodological or technical issues should be placed in appendices. The lessons learned should incorporate guidance for similar development efforts.

Drawing from the country reports, the project manager will prepare the draft summary report within 45 working days (unless otherwise authorized by AFR/ONI) of the approval of the last country report. The contractor will provide three copies of the draft report to AFR/ONI. AFR/ONI and ARTS will review, make final editing and substantive recommendations and return the approved draft to the Contractor within 10 working days. Upon re-editing, the Contractor will have 5 working days (unless otherwise authorized by AFR/ONI) to submit 20 copies of the final summary report to AFR/ONI.

The suggested format for the summary report is as follows:

- Executive Summary
- Table of Contents
- Body of the Report - including purpose of the assessment series, major lessons learned and overall guidance for similar development efforts
- Appendices

The body of the summary report should be no longer than 20 pages. Guidance for similar development efforts should be directed to African governments (policy makers and program managers), USAIDs and other donor colleagues. This document should be less technically oriented than the country reports with a focus on policy and programming issues.

APPENDIX B
PERSONS AND PLACES VISITED

PERSONS MET IN RWANDA

ORGANIZATION	SURNAME Name	TITLE-FUNCTION
	MEDIRESA André	
	NTILIVAMUNDA Sylvestre	Chief, Bamako Initiative
BUFMAR	KERDULA Schuez Ashe	Technical Assistant
BUFMAR	LIJDSMAN Chiel	Director, Administration
CMS Bilyogo	MARTINEZ Waldina	Head
French Assistance	MALATRE Xavier	Technical Assistant
Belgian Red Cross	ANDRE Michel	Administrator
Gahanga Health Center (HC)	GAKAWANDI Sylvestre	Health Center Director
Gikondo Health Center	SEWARE Elisabeth	Health Center Administrator
Kabuye Health Center	BUGINGO Jean Marie Vianney	Medical Assistant
Kabuye HC	NYANZIRA Pelagie	Infirmery
Kimisagara HC	MUKAMURANTSA Adèle	
Kinyinya HC	KAWILINDE Claudien	Center Director
Muhima HC	KANTARAMA Geneviève	Center Director
Ministry of Health	BUZIZI Jean Marie	EPI Supervisor/Kigali Region
Ministry of Health	HATEGEKIMANA Bonce	Health Education Division
Ministry of Health	KABANDA Gaspard	Epidemiology Directorate

Ministry of Health	MUKASINE Louise	Chief, CDD Unit
Ministry of Health	MUSABYIMANA Gaspard	Cabinet Director
Ministry of Health	NEMEYIMANA Néhémie	EPI Division [Seconded]
Ministry of Health	NGABONZIZA Célestin	Head, Malaria Program
Ministry of Health	NGABONZIZA Martin	Coordinator, CDD Program
Ministry of Health	NTAWINIGA Philippe	Chief, Epidemiology Division
Ministry of Health	NYABYENDA Célestin	Head, Health Education Division
Ministry of Health	URAMUFSE Berthilde	Medical Assistant, Malaria Program
WHO	MADISU Mambou	Representative
WHO	MBAKULIYEME Néhémie	Assistant
OPHAR	RWASINE Jean Baptiste	Director General
Kigali Region	DWAMAKUBA André	Medical Director
UNICEF	KRASOVEC Katherine	Head, Nutrition
USAID	BUCYANA Sosthène	
USAID	GRUNDMANN Chris	TAACS (Technical Advisor for AIDS and Child Survival)
USAID	MARTIN William	Chief, Office of Health and Population
CDC	GITTELMAN David	Field Support Officer, IHPO, Atlanta
CDC	ROY Jean	Deputy Director FSD, IHPO

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APPENDIX C

DOCUMENTS REVIEWED

DOCUMENTS REVIEWED FOR RWANDA CCCD SUSTAINABILITY ASSESSMENT¹

1. Country Assessment - CCCD, October, 1983
2. Project Grant Agreement between Republic of Rwanda and the United States of America for CCCD - A.I.D. Project no. 698-0241
3. Program Review - CCCD, Republic of Rwanda, November, 1985
4. Rwanda CCCD Annual Country Report 1985 (Prepared by Maryanne Neill, March 1986)
5. Rwanda CCCD Annual M.I.S. Report 1986 (Prepared by Maryanne Neill, March 1987)
6. Evaluation Report of the CCCD Project, Institute for Resource Development, Inc., October, 1986
7. Rwanda CCCD End of Project Evaluation, Pragma Corporation, May 1988
8. Strategie de Lutte Contre les Maladies Diartheiques, Avril 1987, Minisapo: Project CCCD/PEV (Control of Diarrheal Diseases Strategy, April 1987, Minisapo: EPI/CCCD Project)
9. Republic Rwandaise Ministere de la Sante, Programme de Lutte Contre les Maladies Diartheiques (LMD) Plan d'Operations 1991-92 (Republic of Rwanda, Ministry of Health, Control of Diarrheal Diseases Control (CDD) Workplan, 1991-92)
10. Enquete sur la Prise en Charge des cas de Diarthee dans les Etablissements de Sante au Rwanda, Juin 1992, Realisee conjointement par le Ministere de la Sante, l'OMS, et l'USAID REDSO/WCA (Survey of Cost Recovery in Diarrhea Cases in Rwanda's Health Centers, June 1992, Sponsored jointly by Ministry of Health, WHO and USAID/REDSO)
11. Rapport de l'Enquete d'Evaluation des Connaissances, Attitudes et Practiques des Meres Face aux Maladies Diartheiques et Leur Traitement par les Sels de Rehydratation Orale Effectuee en Date du 8 au 19 aout, 1989 (Report of a Knowledge, Attitudes and Practices Survey of Mothers and Their Treatment of Diarrhea using Oral Rehydration Salts, 8 and 9 August 1989)
12. Programme de Lutte contre les Maladies Diartheiques et IRA, Plan d'Operation 1993

¹Listed in English and French (with English translation).

- (Control of Diarrheal Diseases Program and ARI Workplans, 1993)
13. USAID/Rwanda Country Program Strategic Plan, May 1992
 14. Rapport annuel 1985, Ministere de la Sante du Rwanda (Annual Report, 1985, Ministry of Health, Rwanda)
 15. Rapport annuel 1986, Ministere de la Sante du Rwanda (Annual Report, 1986, Ministry of Health, Rwanda)
 16. Rapport annuel 1987, Ministere de la Sante du Rwanda (Annual Report, 1987, Ministry of Health, Rwanda)
 17. Rapport annuel 1988, Ministere de la Sante du Rwanda (Annual Report, 1988, Ministry of Health, Rwanda)
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APPENDIX D

**DETAILED REPORTS SUPPORTING
THIS STUDY**

EXTERNAL FACTORS

Health policy

National health policy emphasizes medicine for the general public and concentrates on high risk groups such as children, mothers, and workers. Health ministry activities are planned to meet main PHC components.

The government has developed a support program from the PHC acceleration program and has produced and implemented mechanisms for community participation by considering the opinions of elected health center management committees. Also, a support project for the pharmaceutical sector was initiated under the scope of the national social assistance program.

Nevertheless, this official policy of emphasizing medicine for the masses and primary health care does not accurately reflect budgetary levels. Considerable funds have been allotted to building new hospitals, such as in Kaduha and Roi Faisal, with about 200 beds each. In addition, three-quarters of the recurrent cost budget is allotted to hospitals, mainly providing curative services. Thus, less than one-quarter is allotted to health centers that provide care to most of the population.

The health pyramid, based on political administrative organization, has three levels:

- the primary level, made up of health centers, constitute the basic operating unit. In 1991, there were 190 health centers, including 111 public and 79 consolidated centers. The demographic distribution of these health centers, however, is not equitable. Certain communities have four while others only have one health center, or even none at all. This level also includes dispensaries, maternities, nutritional centers, and infirmaries.
- the secondary level, containing rural (26) and regional (4) hospitals.
- the tertiary level, with three referral hospitals, receiving patients from other rural or regional hospitals.

Health services are subdivided in four sub-sectors:

- public health services, totally operated by the Health Ministry, including about 55 percent of health centers.
- consolidated health services, operated by religious organizations or NGO's, with about 40 percent of health centers.

- the private sector, including private practices and an important pharmaceutical network.
- traditional practitioners often sought out by the population, especially in rural areas.

The last two account for approximately five percent of health services.

Civil War

The war in the north of the country since 1990, has had an important impact on the management of health care for the population in regions affected by the conflict. In 1991, 14 health facilities located in the combat zone were destroyed or closed. This includes five health centers in the Ruhengeri health region, or 25 percent of facilities, and six health centers in the Byumba health region, or about half of the region's health infrastructure.

The staff working in these centers had to suspend activities and was reassigned to refugee camps to support the personnel already in place. A recurrence of disease because of deteriorating hygiene, as well as diarrhea and bacillary dysentery, and cerebral-spinal meningitis has affected the living conditions of the displaced.

Economic Factors

The economic situation has been deteriorating for some years. The main source of foreign exchange is the sale of coffee, adversely affected by the drop in the value of the Rwandan Franc (RF). After the November 1990 devaluation, the exchange rate increased from RF 75 to RF 120 per dollar. This devaluation has reduced available resources for the health sector. In 1990, Rwanda allocated 4.3 percent of its budget to the health sector, while in the 1980s the percentage was 5.3 percent.

The structure of expenses in the health sector operating budget (May 1991) shows the following:

- The part of the budget allocated to personnel expenses has undergone a limited increase between 1977 and 1991. It was 53 percent in 1977, between 65 percent and 68 percent in 1988, 1989, and 1990, and 55 percent in 1991, contrasting with many other African countries where the average is around 80 percent.
- The budget for medicines has diminished in real terms, from 30 percent in 1977 to less than 10 percent over the last few years. It remained at around \$135,000 from 1977 to 1991, while the overall operating budget increased from \$450,000 to \$1,700,000. In addition, since the price for medication has increased considerably, this implies an even greater slide in terms of the amount of products available through the health ministry.

Once the construction of the Roi Faisal hospital (\$11 million cost) is completed, the question of the burden of recurrent costs brought on by this investment will need to be analyzed. Even if there is progressive implementation of services with partial cost recovery, the impact on the health sector operating budget will be considerable.

A special financial problem involving ministry revenues as well as worker motivation, is back pay. Since the health budget does not allow the government to pay all it owes to personnel and suppliers, strict accounting methods have been established on how much the employer owes the employee. Health personnel, however, are convinced that they will never recover these amounts. Some workers have not been paid what they are owed for 10 years, as in the Kigali health region, and others have never been paid. In 1991, Ministry had additional debts in the following categories:

- payment of contract personnel salaries: \$650,000
- late payments for medical care in foreign hospitals: \$200,000
- debts with other suppliers: \$675,000

Human Resources

Although necessary, it has not been possible to increase personnel at the Health Ministry during 1991, because of budget constraints. There is a considerable lack of staff in health facilities. Personnel evacuated from war zones have been reassigned temporarily to health facilities in the Ruhengeri and Byumba health regions. Personnel in consolidated health facilities have not been rehired by the Ministry because of budget constraints.

The lack of personnel is linked to various elements:

- the rate of increase in health establishments that do not take the production capabilities of health sciences schools into account. Staff needed for the operation of new health centers and hospitals are hired by facilities that are already operational,
- the proliferation of the private sector,
- the imbalance in personnel distribution, and
- the movement of peripheral health center staff toward large urban centers.

Personnel Turn-over

The movement of government personnel has been frequent recently, as has been the departure of paramedics to other positions in the public and private sectors. In 1991, of a total of active personnel of almost 2,000, close to 20 percent changed jobs, while six percent left the Ministry. In other words, turn-over has affected 26 percent of active Ministry personnel in only one year. This means that an additional budget allocation is available for active personnel (96 posts in 1991), especially physicians and nurses. The emergence of the private sector, however, and fewer medical school graduates has led to a lack of candidates for these assignments.

Among the 2,800 agents under contract there are many cases of contract rescissions because it is easier for these agents to leave the administration than as agents hired under statute. In 1991, five percent of these agents rescinded their contracts. Very few positions are vacant in this category given the availability of candidates in the employment market.

The legalization of private practice in 1989 paved the way for physicians, nurses, and pharmacists to establish their own offices and businesses. The opening of medical offices, clinics, and private pharmacies has been very attractive for ministry personnel, especially considering the lapse in salaries and the decrease in purchasing power. At the end of 1991, there were already 21 medical offices, one dispensary, six infirmaries, and 165 private pharmacies. Most of this private infrastructure is in the town of Kigali (19 of the 21 offices), the only location where the population's purchasing power is high enough to allow these offices to operate at a profit. Between 1990 and 1991, close to 10 percent of these private pharmacies declared bankruptcy.

Environmental factor: Epidemics

The population of Rwanda remains vulnerable to epidemics. In 1991, cerebral-spinal meningitis epidemic broke out in the Mutara area and a flare-up of meningococcal meningitis appeared in two communities of the Gitarama and Kigali regions. Also a cholera epidemic erupted in the Lac Kivu tributary health regions.

EXPANDED PROGRAM ON IMMUNIZATIONS

Background

The national EPI program began in Rwanda about 1978, but did not start operations until 1980. The CCCD project was initiated in 1984 and came to a close in 1988. Its impact on immunization in Rwanda was considerable; between 1983 and 1987:

- BCG coverage increased from 49 percent to 90 percent;
- DTC3 from 36 percent to 79 percent; and
- measles from 53 percent to 75 percent.

This progress in the level of coverage has resulted in an important reduction in measles, whooping cough, polio, and diphtheria. To reinforce or advance this approach, a "Program of Accelerated Immunization" was initiated. It was officially launched in March 1988 in Butare district by the presidential couple. CCCD results have been improved upon and today consist of rates envied by other African countries. Nevertheless, the existing situation in Rwanda, particularly the civil war in the North since the end of 1990, with all of its repercussions on the health structure as well as on the life of the population, may lead to a deterioration of the excellent immunization rates existing today.

Project-Related Criteria Affecting Sustainability

Perceived Effectiveness

A. Development of workplans and policy statements at national, district, and local levels.

Establishment of a national policy, written by the national office which manages EPI, and carried out by the accelerated immunization program, occurred in 1987. Yearly work plans are produced with the cooperation of UNICEF and at the end of each year there is an assessment of the execution of these plans. The persons responsible for the program analyze the reasons why certain activities have not been carried out and decide whether or not to repeat the activities the following year. Each annual operation plan is summarized in a table, allowing its accomplishments to be easily monitored. Annual operation plans are also produced at the regional level.

B. Implementation of HMIS or special surveys to measure project impact.

On one hand, the impact of the project is assessed by the regular health information system and on the other, by timely surveys. The health information system, implemented at the time of the project, was improved in 1991. Immunization coverage surveys are carried out with classic WHO methodology (30 samples of seven children). This follow-up survey should be

performed annually. There were none, however, in 1991 and the country is leaning toward surveys only every two years. A comparison of program impact data according to the source of information (SIS or survey) was done during the immunization coverage survey, in 1990. It was found that the impact data obtained from the surveys were significantly higher than those from the conventional system. The difference varied from +6 percent for DTC3 to +18 percent for DTC1. The surveyors could not determine if this situation was a result of under notification of routine activity data or an underestimation of target population data.

C. Completion of operational research and special studies to assess program quality and develop solutions.

Special investigations are conducted, when a case of neonatal polio or tetanus is discovered. The aim of these investigations is to determine the source and then take appropriate corrective measures. The findings are sent to Belgium for confirmation. Rotary International cooperates in analyzing polio cases. A special study is also carried out for quality control of the cold-chain. Since October 1992, color indicators have been used to assess cold-chain quality from the manufacturer down to the person being vaccinated.

D. Use of data for decision making.

Collected data is sent to the EPI Division of the Ministry of Health. The division compiles the data and sends it to the epidemiological division. There is no compilation at the regional level. However, EPI target diseases are analyzed, and feedback is provided to health regions. Thus, if data are used in decision making it must be at the central level. Compilation could be decentralized to the regional level, however, and this option is presently being considered.

E. Adequate staffing and resources at the service delivery level.

Resources are insufficient at all levels. At the central level, six individuals, of which only four are full time, are not sufficient to handle the volume of EPI-related work. At the regional level, there is only one supervisor for EPI and this individual is required to assist other programs (CDD, ARI) as well. Some regions have an assistant supervisor, who is mainly in charge of the cold-chain, immunization supply, and materials. Finally, at the health center level, all agents know how to perform immunizations. Since 1988, however, there has not been an increase in the number of health workers in each center even though most centers have seen a modest increase in clients. This has resulted in overworked staff, especially in health centers integrated into the national PHC program. In addition, their salaries have not been increased for several years, in spite of the increase in the cost of living. The problem of late payment of salaries also affects workers and their motivation. Since the health budget does not allow the government to pay all it owes its workers, a strict accounting is kept of the debt of the employer with the employee. Those receiving salaries, however, know well that they will never recover these amounts. Some cases have not been resolved for 10 years, as in the Kigali health region and others.

Finally, the establishment of private clinics, attracting public service workers, exacerbates the dilemma of staff in bordering health units. The legalization of private medicine in 1989 has fostered the establishment of physicians in private health clinics, an opportunity that is very attractive for government personnel frustrated over frozen pay levels.

F. Public perception of program effectiveness.

The public perceives EPI to be very effective. If one looks at parent participation at the beginning of the program, participation was almost 100 percent. The dropout rate between DTC1 and DTC3, which can also be used as an indicator of the public's perception of program effectiveness, is very low; around 10 percent. This indicator, however, must take into consideration a very strict population control system that existed: every community is divided into sectors, which are further divided into cells. A cell contains about 50 households. The fourth member of a cell is in charge of social/cultural affairs. She/he pays particular attention to immunization dropouts and proceeds to seek out people who have missed immunization dates. This system has fallen out of favor with the population, however, with the recent introduction of a multi-party system in Rwanda. It is too early to know if and how this change will affect public perceptions of EPI.

Integration and institutional strengthening

A. Effective supervision system (using checklist) which decentralizes technical and managerial responsibility to the peripheral level.

There is a supervisory system at the national as well as at the regional level. At the national level, supervision is performed every quarter by the director in charge in the region. One or two health centers are visited with the regional supervisor. At the regional level, the supervisor should visit each health center in his region at least once a quarter. In actuality, supervisory visits are less frequent. A supervisory checklist, which includes information about CDD and HIS, nutrition, and malaria is used regularly.

B. Integration of service delivery at delivery sites.

Immunization activities are integrated into service delivery at the service delivery level. Immunizations are provided by all health units, close to 300: hospitals; health centers; dispensaries; health posts; and isolated maternity units.

C. Integration at national level into existing MOH structures.

The EPI is well integrated at the national level into Ministry of Health structures. EPI is one of the three divisions of the epidemiology and public hygiene department (the other two being epidemiology and public hygiene). The only inconvenience that could be pointed out

concerns the hierarchy of the EPI division chief in relation to other programs (Malaria, CDD) that are subordinate to the chief of the epidemiology division. Nevertheless, the situation of integration and cohesiveness has considerably improved over that which existed at the close of the project, when roles and responsibilities among various divisions and departments conflicted.

D. Support activities operational and integrated at national level.

The support activities - HIS, training and health education - are integrated at the national level. Information required for EPI follow-up is included in the monthly report, which is being improved and tested in the Kigali health region. Training is carried out jointly by the EPI, CDD and HIS programs. Soon, ARI will be added. EPI, however, is stressed in the week long training workshops. Operational research activities have decreased since the end of the project, but appear to be integrated.

E. Competency based assessment of worker performance.

Worker performance is assessed during supervisory visits. The supervisory checklist includes indicators for the evaluation of staff competence, even at the national level.

F. Reliance on host country technical expertise.

The immunization program does not rely on foreign expertise. About ten years ago, there had been technical assistance for immunization coverage surveys supported by WHO. However, presently, there are no technical assistants and no consultants, with the exception of some specific missions by WHO, for example, for neonatal tetanus.

Local financing, community participation, and private sector provision project services.

A. Assumption of project costs by government.

The government has not taken over project costs. It pays health center personnel salaries, as it did during the life of the project. UNICEF has taken on most of the costs incurred by the project such as fuel, supplies, and training. The total budget allotted by UNICEF to the EPI program has ranged from \$400,000 to \$800,000, for each year from 1988 to 1992. This international agency has already indicated that shortly it will no longer assist in furnishing Rwanda with essential drugs and some other operating expenses like fuel. In addition, it is known that UNICEF has announced its progressive retreat from financing immunization in several other African countries. Given this information, the government, should seriously consider contributing to UNICEF financing.

B. Implementation of fee for service/cost recovery.

A cost recovery system, resembling the Bamako Initiative, is being implemented. Currently, only part of the health centers are targets, but the plan is to include all public units in this system. As of 1986, the government had decided to charge for certain services such as consultation and hospitalization. The funds collected are to be turned over to the community governing body and the community was to contribute, in turn, to the operational needs of the center (maintenance, fuel, etc...). In reality, the community governing body receives the funds and allocates them to other sectors, which represent higher priorities. Cost recovery, under the old system as well as the new, however, does not affect immunization. Immunization activity is not affected by the implementation of this Bamako Initiative. The immunization cards, the vaccine, and the service itself are free. The supply of vaccines, fuel for the cold-chain, and other items relative to EPI are mainly covered by UNICEF.

C. Private provision of project services.

The private sector consists mainly of religious organizations which perform close to half of all immunization services in Rwanda. Coordination of church medical resources is by daily liaison with a non-profit Rwandan association, BUFMAR (Office of Consolidated Medical Training for Rwanda). It consists of 55 persons, only two of whom are foreigners; in 1987 it employed 25 workers, including six foreigners. This association enjoys good relations with the Ministry of Health. BUFMAR is supplied with vaccines and incidentals by the Ministry, which is supplied, in turn, by UNICEF. BUFMAR is self-financed through the sale of essential drugs and educational materials (transactions: \$1.4 million).

After the legalization of private medicine three years ago, physicians and clinicians opened private offices offering immunization services. At the end of 1991, there were about 20 private offices, almost all in the capital, Kigali. These offices charge about \$0.35 for each service performed. In spite of the cost, some people go to private clinics for immunization, to avoid the long wait in public or consolidated health centers. All private units offering immunizations are prohibited from reporting the number to the MOH.

D. Donor complementarity and coordination.

The main donor of EPI is UNICEF with over \$3 million of support since 1988. Nevertheless, other donors do assist in supplementing the immunization program. Rotary has just renewed its pledge to support polio vaccination in Rwanda in the amount of \$745,000 for 1992-1997. From this allocation, \$100,000 will be allotted to social mobilization, and the remainder to the supply of vaccines. In addition the Belgium-Luxembourg Rotary Club foundation is supporting the construction of an EPI facility (technical facility, vaccine deposit, administrative offices) and the tripling of the refrigeration central capacity, that will grow from 12m³ to 40m³. WHO is another donor which contributes significantly by supporting EPI training activities.

Strong training component

A. Training strategy developed and implemented.

Training is done jointly with the CDD and HIS programs. Soon, ARI will be incorporated into the training program. Information concerning EPI and CDD is covered during this training. There have been three or four sessions per year, per level since 1991.

B. Continuing health education policy developed and implemented.

A cycle has been established where every quarter training workshops are conducted. Workshops are conducted jointly with the CDD program so that each health unit can have at least three agents trained in both EPI and CDD techniques.

C. Implementation of a supervisory system.

There is a supervisory system that permits the evaluation of the quality of agents' training. Nevertheless, since the end of the CCCD project, supervisory visits are less regular because of a lack of adequate resources even though UNICEF gives significant financial and logistical support.

D. Completion of facility training needs assessments.

The health region proposes training candidates based on needs which have been identified during supervisory visits and after consultation with health center directors.

E. Trainers trained in how to train

There is a "training of trainers" component in the national immunization program.

F. Project training activities integrated into existing MOH training structures.

There is no apparent integration of EPI into the Division of Legal Affairs, Education and Planning, which is in charge of training in the MOH. EPI training activities are established autonomously by the EPI Division, in conjunction with the Division of Epidemiology.

Lessons Learned

The presence of a strong consolidated sector is attractive for public sector personnel. In health facilities of the consolidated sector one seldom experiences stock ruptures, the equipment is more complete and operational, and the patients are generally treated with more personal attention. The environment at consolidated centers attracts more clients, thereby increasing the personnel workload. Health workers, however, would rather work at consolidated facilities, where salaries are not necessarily higher, but where they find better working conditions.

Recommendation

Serious consideration must be given to making EPI sustainable because UNICEF plans to discontinue its financial support for EPI in the near future. The CCCD project was fortunate that UNICEF picked up support for the immunization activities after CCCD ended. UNICEF's role has greatly contributed to the sustainability of this component. UNICEF, however, will not continue its financial support indefinitely. The situation should not be allowed to wait until this problem arises. Development of alternative plans and strategies must begin as soon as possible if the gains made in EPI are to be sustained in the future.

CONTROL OF DIARRHEAL DISEASES PROGRAM

Background

The Rwanda national diarrheal disease control program was started in 1987 with the help of the CCCD project after 1986 KAP data revealed that diarrhea was the second leading cause of morbidity and mortality among children 0-4 years of age. The CCCD/Rwanda project had two specific objectives for its control of diarrheal diseases program (CDD):

- to establish oral rehydration therapy (ORT) as the primary treatment for diarrhea with dehydration in 80 percent of the health facilities by the end of 1987; and
- to increase utilization of appropriate home prepared oral rehydration solution (ORS) to prevent and treat dehydration caused by diarrhea.

At the time of the end-of-project evaluation in May 1988, the first objective had been achieved (ORT was established as the treatment of choice for diarrheal diseases); the second, however, could not be evaluated.

CDD program assistance provided by the CCCD project was multifaceted and ranged from helping to establish a national strategy and plan of operation; to assisting with creating and equipping ORT units; to providing ORS packets; and to highlighting the importance of health education and community participation. Two training centers (Kigali and Butare), established during the life of the project, served to train 18 health workers during two weeks of on-the-job training. These trained personnel in turn set up over 20 ORT corners nationwide.

Although the CCCD project played a vital role in the all important establishment of the CDD program, several obstacles, noted in the final evaluation report, remained to be tackled by the young program in May 1988. The report noted that although 100 percent of fixed health facilities had ORS packets available, not all ORT corners had adequate materials (filters, cups, spoons, containers for mixing) to give demonstrations. In addition, no standardized measurements existed for ORS preparation. Finally, supervision and training were identified as key areas which needed intensified attention in order to improve the impact of the CDD program.

This section will assess the extent to which activities begun by the CCCD/Rwanda project have been used or continued by Rwandans since the termination of the CCCD project in 1988.

Project Related Criteria Affecting Sustainability

Perceived effectiveness

A. Development of Workplans and Policy Statements at National, District, and Local Levels

Rwanda's national CDD program adopted an updated policy in late 1989 (based on a KAP study) and a two year workplan for 1991-1992. The KAP study revealed that diarrheal diseases are the fifth leading cause of morbidity and the third leading cause of mortality. The revised policy clearly states the program's objective: to reduce the mortality due to diarrheal diseases by 25 percent by 1992 and by 35 percent by 1995. Some specific objectives include assuring that each health center has at least one intensively (two weeks) trained health worker and three who have been trained in the basics of ORT (up to two days); assuring that ORS packets are accessible; and that proper treatment is given for cases of diarrhea and dehydration.

The 1993 CDD workplan, based on the existing policy statement, is well developed and is being disseminated to each of the ten regional doctors (in charge of managing the medical region of a prefecture).

B. Implementation of HMIS or Special Surveys to Measure Project Impact

Data concerning diarrheal diseases have been incorporated into the existing HIS at the national level. Data from each health center are sent to the national HIS office by way of the regional level physician's office. The system often experiences delays because of limited computer accessibility at the national level and slow reporting from the health centers. Results from the June 1992 study indicate that data concerning diarrhea in children under five years of age were only accessible in less than half of the centers visited.

C. Completion of Operations Research or Special Studies to Assess Program Quality and Develop Solutions

Since project completion, at least two special studies and one operations research study have been conducted. The first, a 1989 KAP study conducted by Rwandans and financed by UNICEF, evaluated the knowledge, attitudes, and practices (KAP) of mothers when treating diarrhea by ORS. As indicated above, this study was the basis for the revision of the national program which experienced difficulties in implementation after the CCCD project ended. The second study was conducted in June 1992 with the help of two consultants from USAID-REDSO/WCA and the World Health Organization (WHO). The extensive study looked at the case management of diarrhea cases in health facilities as well as some perceptions of health workers and mothers. Results have been discussed and revised training and supervisory strategies are being elaborated at the national level based on the program's weaknesses identified by the study. Finally, in 1988-89 national leaders conducted an operations research study of the effectiveness of sorghum based porridges. Research took place at the Kigali hospital center, but no results were available at the time of this assessment.

D. Use of data to make decisions, identify problems, develop solutions and to confirm project's importance at health committee meetings.

The team found no evidence that data collected by the HIS are being used to make decisions concerning the CDD program. This is an indicator which weighs negatively for project sustainability.

E. Adequate Staffing and Resources to Keep Staff in Place at the Service Delivery Level

Unfortunately, the team was unable to visit health centers outside of the Kigali region due to security reasons. Most health centers visited appeared to be adequately staffed. However, the study conducted in June 1992 found that only 30 percent of the health centers visited had sufficient numbers of trained health workers at the time of the study and 45 percent had never had sufficient numbers of trained health workers. This lack of adequate staffing has a negative impact on project sustainability.

F. Public Perception of Effectiveness of Activity

From the limited information available, it appears that the public perceives ORT to be effective. The June study showed that more than one in four children with diarrhea brought to a health center had received some form of treatment before arriving at the center. Of these, 42 percent had been given ORS. Further, ORS packets, distributed by UNICEF, have directions written in the local language, Kinyarwanda. Also encouraging is the fact that of the health registers reviewed, more cases of Plan A and B had been noted than the more severe Plan C. These lead the team to believe that the public does perceive the CDD program to be effective, despite the opposite perception held by health workers.

Integration and Institutional Strengthening

A. Effective supervisory system (using checklists) which decentralizes technical and managerial responsibility to the peripheral level.

Supervision had been a vertical activity during the CCCD project, but since its termination the system has been ameliorated. The present supervisory system is one integrated with the Expanded Program on Immunization (EPI) and the health information system (HIS) activities. The responsibility for supervisory visits is decentralized to the regional level and visits are conducted quarterly by a regional level team of supervisors trained in the supervision of each activity. The supervisors use a checklist which incorporates EPI, CDD, and HIS criteria. The problem with this system is that the accent is placed on the supervision of EPI, leaving the other activities considerably less supervised. This perception by the team was reinforced by the June 1992 study. Therefore, one can say that an integrated, decentralized system does indeed exist for supervision, but its effectiveness on the CDD program is negligible.

B. Integration of Service Delivery at Delivery Sites

The CDD program services are very well integrated with other activities at the service delivery sites visited. The national system is one which strives for the polyvalence of its health workers. Training workshops (five days) try to incorporate EPI, CDD, and HIS skills. The goal is to have at least three trained personnel at each health center.

Two of seven health centers visited had functioning ORT corners where cases of diarrhea and dehydration could be treated. (The June 1992 study noted that about 30 percent of Rwandan health centers had functioning ORT corners.) Others did not, but still offered treatment services. It is clear that CDD is well integrated and a permanent part of health centers.

C. Integration at National Level into Existing MOH Structures

The CDD program is totally integrated into the MOH at the national level. It is in the Division of Epidemiology in the Directorate of Epidemiology and Public Health in the Ministry of Health. The program was well integrated at the time of CCCD and continues to be. One limiting factor for the CDD program is its position in the MOH. The CDD coordinator answers to the Director of the Epidemiology Division, while another national program coordinator (for EPI), is at the same level as the Director of Epidemiology. That is to say that EPI is a division in and of itself, while CDD rests under the Epidemiology Division. Therefore, the CDD coordinator is not as powerful as the EPI coordinator, and this works against the national CDD program.

D. Support Activities Operational and Integrated at National Level

Four support activities are concerned here: health education (HE); training; HIS; and operations research (OR). Health education activities are well coordinated with the existing national HE Division's activities. For example, at the national level, radio messages concerning CDD and other services are planned and executed by the national HE Division in collaboration with other appropriate offices (CDD, EPI, etc.). On the other hand, CDD training activities are organized, planned and conducted by the CDD office. It is up to the CDD office to find funding for the training workshops. The office in turn notifies the national division in charge of training (Division of Justice, Education and Planning Affairs) of upcoming training workshops. The process is non-systematic; sometimes the division is notified before a session and sometimes after. The training activities are considered unintegrated into the national training division.

The CDD program is totally integrated into the national HIS. Weekly reports are submitted (with delays) by regional physicians to the Division of Information, Research, and Documentation. Finally, CDD Operations Research activities have been integrated to the extent possible into national structures.

E. Competency based assessments of worker performance

A very clear supervisory checklist exists and could be used for the assessment of CDD worker performance. However, supervisory visits consist of follow-up for EPI, CDD, and HIS at the same time. CDD activities are not adequately represented on the checklist, nor in overall supervisory activities as stated in the June 1992 study. In general, during supervisory visits CDD activities took a back seat to EPI, FP, and nutrition. Unfortunately, the lack of adequate assessments of worker performance have a negative impact on project sustainability.

F. Reliance on host country technical expertise

This indicator contributes positively to sustainability in the case of CDD. Since the end of CCCD, the national program has only relied on the assistance of two non-Rwandans. The level of host country competence is high.

Local Financing, Community Participation and Private Provision of Services

A. Assumption of Project Costs by the Government

The Rwandan government finances the salaries of the CDD office personnel (three plus a driver), furnishes its office, and pays the salaries of the health workers all the way down to the health center. However, these expenses were paid by the Rwandan government during the CCCD project and therefore do not constitute an assumption of project costs. Other costs and activities are financed by UNICEF (training, ORS packets, gas for supervisory visits) and WHO (some training). The team found no significant evidence that the Rwandan government has assumed CCCD project costs. This indicator impacts negatively on project sustainability.

B. Implementation of Fee-for-Service/Cost Recovery

During the CCCD project ORS packets were not sold. Now, over four years after the end of the project, most health centers, whether they are public, public with Bamako Initiative (BI), or centers run by religious denominations, charge a fee for consultations. None actually charges for the ORS packets themselves, but rather for the service, which includes at least two packets. The ORS packets are given by UNICEF to all three types of health centers in Rwanda. The cost recovery system (BI) being put in place plans for the eventual end of donor support for ORS packets. (The program called the "Bamako Initiative" began in 1990 and now is part of almost half of the public health centers. The idea behind this system is the implementation of a fee-for-service leading to cost recovery. See the section concerning cost recovery.)

C. Private Provision of Project Services

The health centers (agrees Fr.) run by religious denominations (also referred to as consolidated) are very active in Rwanda and make up about forty percent of all health centers. However, when considering private provision of project services, the team took into account the 29 or so actual

privately run health centers. These centers charge for services, ORS sachets included, but given the small percentage of private centers (about five percent of all health centers) their role is less significant than the agree centers. None the less, both have a positive impact on the sustainability of health programs, forcing public facilities to focus more on the quality of services offered.

D. Donor Complimentarity and Coordination

UNICEF, the World Bank and WHO are the three donors who play key roles in the implementation of the CDD program. UNICEF, which plays the dominate role among the donors, assists in financing the five day training of health workers in the areas of EPI, CDD, and HIS. In addition, it furnishes the entire country with ORS packets (adapted to the primus bottle after repeated problems with standard measurements during the CCCD project), which have preparation directions in Kinyarwanda, the local language. The World Bank (through the family health project) assists in the training of trainers workshops conducted for members of the regional training team. WHO finances some training workshops from time to time, but has been very helpful in aiding with the supervision training; especially furnishing manuals. In all, donors compliment and coordinate well with each other.

Strong training component

A. Training Strategy Developed and Implemented

The national CDD program workplan for 1993, and 1991-92 before that, includes a detailed training strategy which calls for 100 health workers to receive a two week practical training in the treatment of diarrhea by oral rehydration. This training is to take place at one of two diarrheal training units (Kigali or Butare). Since the end of CCCD, 178 health workers have received this intensive two week training. This two week training session began in 1991, but was suspended for all of 1992 in anticipation of the June 1992 study results. Now at the national level changes are being made in the training strategy based on the study results and recommendations.

B. Continuing Health Education Policy Developed and Implemented

CDD continuing health education consists of regular quarterly training sessions which are integrated with EPI and HIS and soon acute respiratory infections (ARI) will be integrated as well. UNICEF funds these sessions which are mainly focused on EPI, but also include training on correct preparation of ORS packets. The CDD portion of the training can be anywhere from one to two days to a few hours, depending on the trainer and the skill level of those being trained. The idea behind this type of training is good, but the CDD program more often than not suffers at the hands of the more popular and established EPI.

C. Implementation of Supervisory System

A well-conceived, integrated, decentralized supervisory system exists for EPI, CDD, and HIS. Quarterly visits are conducted by regional teams, which received training in supervisory techniques. Checklists, as described in 2.A. above, are used by the supervisors. Unfortunately, though, as also explained above, emphasis is placed on EPI and the other activities do not receive adequate supervision.

D. Completion of Facility Training Needs Assessments

Facility training needs assessments as such do not exist, but through the established supervisory system, checklists can be and often are used to identify problem areas, and in turn, training needs. The mechanism is in place. In spite of this, the decision about who is chosen to be trained is left up to the discretion of the head of the health center. Regional chiefs decentralize the decision making power to the health center heads. What results is that health workers are selected for training based mainly on what the head of the center feels. In addition to his/her feelings, he/she uses results of supervisory visits (needs identified by the checklist) to assist in deciding who to select.

E. Trainers Trained in How to Train

CDD trainers are trained in how to train. The regional training team received two day sessions in training of trainers (TOT). This type of training is organized and funded by the World Bank's Family Health Project. In addition, UNICEF finances TOT for regional teams including how to train for EPI and CDD programs. The World Bank project's training is said to be more theoretical and UNICEF's more practical.

F. Project Training Activities Integrated into Existing MOH Training Structures

As explained in section 2.D. above, the national CDD office is responsible for organizing, planning, conducting and finding funding for CDD related training activities. The CDD office then simply informs the national training office in charge of training about planned training activities. CDD training activities are not at all well integrated into existing MOH training structures.

Recommendations

1. The national CDD program suffers from a lack of sufficient resources, power and recognition. All too often CDD takes a back seat to EPI. Considering that CDD and EPI are both national programs, both coordinators should have an equal amount of responsibility and their programs should be at the same level in the Ministry of Health, if CDD is to be an effective program.

2. The CDD program has trained 178 health workers in numerous two-week long, intensive sessions. In addition, approximately 700 other health workers have received the week long training which includes EPI and CDD among other disciplines. Yet, the June 1992 study found that those trained in CDD suffered from a lack of adequate supervision which in turn was reflected in less than desirable delivery of services. Further, no significant differences were noteworthy in either the practices or the knowledge of CDD trained and non-trained health workers. In light of the in-depth, revealing study of June 1992, the team recommends that the CDD training strategy review and revision process, begun by the CDD coordinator, continue and that the process incorporate recommendations made by the study team.

MALARIA

Background

A program to control malaria was established in 1987 to counter the constant increase of malaria cases in Rwanda. A high number of plasmodium falciparum cases, resistant to chloroquine, appeared in certain locations, including mountainous regions not usually subject to outbreaks. The timing coincided with the implementation of the CCCD project, when anti-malaria measures were not yet widely carried out in Rwanda.

This component was considered one of the weakest by the CCCD project's final evaluation team in 1988. The delayed takeover of the malaria program by the project and its vertical management have prevented achievement of expected goals.

Plans to integrate anti-malaria activities into the Primary Health Care (PHC) program were drawn up in October 1989 and incorporated in the short and medium term action plans for 1990-1994. A meeting of donor and lender agencies was organized by the Ministry of Health in February 1992 to analyze the possibility of financing the malaria program. Doubts continue to persist, however, about the perception of malaria as one of the country's priorities in public health and about concrete actions to control the disease. Even the management structure of the program at the Health Ministry level suffers from institutional neglect. It is difficult to determine whether this situation is due to the complexity of anti-malaria measures or a lack of confidence in their effectiveness, or a combination of both.

Officials responsible for the program remain optimistic and are counting on meeting donors and lenders again next March for a new analysis of the action plan and prospects for joint financing. The program budget is US \$ 4,271,000, half of which is to cover anti-malaria drugs.

Project-Related Criteria Affecting Sustainability

The set of guidelines used by the team served as a basis for examining the program. Data were received from pertinent individuals during field visits as well as from a review of available documents. The fact that the team could not visit rural health centers, however, limited the validity of information collected during health center visits just in Kigali and neighboring areas.

Perceived Effectiveness

A. Establishment of a national policy and development of action plans at the national, prefectural, and local levels.

There is a national policy document of July 1991 and a national development plan. The document identifies the program's strategy and the priority given to achieving the promotion and accessibility of malaria control measures. The lack of formal involvement by donors and lenders

and insufficient financing made it necessary to revise the 1990-1994 action plan, in April 1992, to adapt it for 1992-1996. National directors hope to sensitize donors and succeed in obtaining funds to implement the plan (about US \$ 4 million).

There are no action plans at the regional and local levels. It must also be emphasized that policy lacks implementation in most health facilities, probably because of the lack of supervision and conformity, but also because of logistics. Chemoprophylaxis for chloroquine in pregnant women, for example, is part of policy but is not carried out in most of the health centers. This unilateral decision by health center directors comes as a result of frequent lack of stock and because of concerns about resistance to chemicals, that are somewhat prevalent throughout the country.

B. Establishment of a national information system or surveys to assess the impact of the project.

There is a registration system for cases of morbidity and mortality integrated into the health information system. The system is operational even though efforts are still necessary to improve regular transmission of data and its handling.

C. Completion of operations research or special studies to assess program quality and develop solutions.

Some special studies were done in 1991 and 1992.

- The first, in 1991, covered the Kigali and Kibungu regions. This was an entomological study to analyze vectorial species in their regions and habitat;
- The second study was on chemical sensibility *in vivo*. This was carried on in 1992, at four locations, one in each region. This study is to be expanded to the other six regions of the country in 1993.

All projects were financed with French cooperation under the Epidemiological Survey Project.

D. Use of data to make decisions, identify problems, develop solutions, and to confirm the project's importance at health committee meetings.

The team found no evidence that data is being used to arrive at decisions in the campaign against malaria. Team interviews with health center directors, for example, show that anti-malaria chemoprophylaxis in pregnant women is not being carried out and that the treatment procedure for malaria is not executed according to policy. Meanwhile, no decision has been made about how to make field agents comply with policy.

E. Adequate staffing and resources to keep staff in place at the service delivery level.

Health agent/population ratios by professional category show an extremely low level of human resources: roughly one physician per 16,000 population and one nurse per 6,000. This situation is made worse by improper staff distribution in urban and rural centers. As a result, some rural health centers operate with only one or two qualified agents who are highly overworked, particularly in health centers integrated along Bamako Initiative (BI) lines.

F. Public Perception of Effectiveness of Activity

The perception of effectiveness is moderate at the staff level. Patients only appear for consultation at health centers when their fever is already advanced. Recent statistical data show a distinct progression of morbidity and mortality cases.

At the level of the public in general, perception seems to be satisfactory although there are no special studies to back this up. Interest shown in treated mosquito nets and visits at health services are the factors supporting this statement.

Integration and Institutional Strengthening

A. Effective Supervisory System (using checklist) which Decentralizes Technical and Managerial Responsibility to the Peripheral Level

There is no direct supervision by the central level. Supervision is decentralized and integrated at the regional level. At the central level, however, the items for supervision included in the checklist, are identified as follows: availability of anti-malaria drugs in health facilities as well as compliance with treatment procedures in accordance with the two policies adopted since 1987.

B. Integration of Service Delivery at Delivery Sites

The battle against malaria is well integrated at service delivery sites at all levels (hospitals and health centers). The lack of stock (especially in non-BI integrated health centers) can certainly be a limiting factor. This seems to be the case mainly with secondary drugs (injectable Fansidar and Quinine) indicating non-compliance with treatment procedures set forth under national policy. In addition a vertical, self-financing program is under way, with French cooperation, for individual protection. This consists of making treated mosquito nets available for families.

C. Integration at the National Level into MOH Structures

The anti-malaria program is managed by the Epidemiological Division in the Department of Epidemiology and Public Hygiene. The program was established in 1987 as part of the CCCD project. At the end of the project, the director was transferred to the hospital center at Kigali.

The program was re-organized at the end of 1989, based on archives left by the CCCD project; however, problems still persist concerning program features and organization. This further delays implementation.

D. Support Activities Operational and Integrated at the National Level

The anti-malaria program benefits from support activities such as health education and the health information system (HIS). To improve intervention, for example, a full time agent has been designated from the central office to develop educational activities in the fight against malaria. The HIS monitors epidemiological surveillance of the disease and deaths related to malaria, as well as provides information about the availability of drugs and compliance with malaria treatment procedures in health facilities.

E. Competency-Based Assessments of Worker Performance

There is no mechanism to assess worker performance. Directors are used to receiving health agents sent by the Ministry. Information on the checklist helps to determine the degree and compliance of staff with defined treatment policy, but it does not provide an assessment of the level of acquired competence. Moreover, information from checklists is available but not requested.

F. Reliance on External Technical Expertise

Many national staff members have been trained to combat malaria in Rwanda as well as abroad (CCCD Training program at Kinshasa; WHO program at Bujumbura). Systematic application of this training for the benefit of the program continues to be a basic problem.

Local Financing, Community Participation, and Role of the Private Sector

A. Assumption of Project Cost by Government

It is difficult to assess participation by the government in Rwanda in assuming costs for the anti-malaria program, as it is in other projects. All program components (research, training, supervision, logistics, equipment, etc.) are carried out as a result of donations and lender financing. Government participation is also limited in covering staff salaries, infrastructure, fuel costs, and water supply. Based on interviews and statements, nothing indicates that this situation can improve in the short term.

B. Implementation of Fee-for-Service/Cost Recovery

There is a cost recovery system in place to assure the availability and accessibility of anti-malaria drugs. This is carried out at the level of consolidated health centers and public health facilities not integrated into BI, by a token payment for consultation and hospitalization. Under the BI, payment is made according to units of medication prescribed (see cost recovery section

for further details). Concurrently, a cost recovery mechanism is being developed, in the form of a self-financing project, with treated mosquito nets. Promotion is geared toward individual protection.

C. Private Provision of Project Services

It is only since 1989 when privatization was authorized that conventional private health facilities, as well as those operated by religious groups which are very active in Rwanda, have been able to operate as recognized private sector entities. Religious groups, however, have been present for many years in Rwanda and have operated health and other facilities; these groups are in charge of approximately 40 percent of the country's health facilities.

D. Donor complementarity and coordination

The campaign against malaria is currently supported by:

- French cooperation which promotes the use of treated mosquito nets under the MOH's epidemiological research program,
- WHO for training, especially abroad,
- UNICEF for training at the peripheral level, and
- HIS for supervision.

The result is a certain complementarity in the actions of these partners and donors even if the activities do not seem to result in a coherent process and follow-up of the anti-malaria program.

Strong Training Component

A. Training Strategy Developed and Implemented

Training was introduced in the anti-malaria program in 1985 by the CCCD project. The strategy was to train trainers of trainers as well as health workers, each in their respective area of competence, either clinical or laboratorial.

B. Continuing Health Education Policy Developed and Implemented

A continuing education policy began to be carried out toward the end of the CCCD project. This policy was inspired by "training the trainers," established under the CCCD project, and continues in effect. The malaria program, however, benefits very little from continuing education because under the CCCD project it was mainly of a supervisory nature. Training manuals do exist, as follows:

- Training guide for PHC agents, 1992, two volumes covering interns and instructors respectively.
- Training and recycling module for diagnosis of malaria through parasites, 1991.
- Educational module for malaria control at the district level, 1991.

These documents are mostly produced by WHO and some have been adopted at the national level.

C. Implementation of Supervisory System

The supervisory system is organized from the central to the peripheral level. Details are contained in the section on training.

Supervision in the malaria program, in particular, is integrated at the regional health directorates. Checklists contain two distinct elements to examine health facilities: the availability of anti-malaria drugs and compliance with the treatment strategy to fight malaria as defined by national policy.

D. Completion of Facility Training Needs Assessment

There are no assessment means for training needs. According to the directors interviewed, determination of training needs is done empirically, based on their own experience, and on statements made in quarterly supervisory reports.

E. Trainers Trained in How to Train

The policy of training the trainers was initiated under the CCCD project in 1985 by sending four agents to Kinshasa (Zaire). This policy has continued with the support of WHO since 1986. It involves sending candidates to advanced courses in malaria, held in Bujumbura (Burundi).

F. Project Training Activities Integrated into Existing MOH Training Structures

There is a Division of Judicial Affairs, Education, and Planning at the Health Ministry. This division is in charge of training. Training in the malaria program is only slightly integrated at the level of this division. The division is simply informed of proposed training but no contribution is expected. Indeed, the division seems to be more active in handing out grants for training abroad. The division unfortunately does not take into account program needs, or future orientation of agents upon their return from training.

Recommendations

1. Malaria is an urgent public health problem in Rwanda, amply demonstrated by available epidemiological data. It is expected to remain a leading problem for many years. In view of these circumstances now is the time to reinforce control measures in a coherent program, adapted to local reality.
2. The quickened pace implementing the BI program in the country and the coverage of close to 43 percent of health facilities by private religious groups should assure improved availability of anti-malaria drugs. Therefore, it is important to reorient the central office responsible for the campaign against malaria to make the campaign an effective support service for regional health directorates and health facilities that will be, in turn, responsible for supervision and service delivery. As a result, this office needs to improve its research and study activities including entomology, effects on parasites of anti-malaria drugs, the effectiveness of individual protective measures, etc. Also, it must reinforce training according to results obtained from year to year.
3. As very few national staff members are trained in malaria, qualified technical assistance should be provided, even for a short time, to help the Ministry improve the organization of the malaria program and to produce coherent policies and action plans to meet future expectations.

TRAINING

Background

The objectives of the CCCD program in Rwanda were to reinforce the Rwandan government's capability to control communicable diseases through the training of individuals in the PHC program, supervisors, and other health staff. The project expected to achieve the ambitious target of training 1,000 health workers and program managers by 1987. Finally, the project aimed to complete the training of 278 health agents and managers through seminars at the national and regional levels, and assist two hospital centers (Kigali and Butare) with ORT training.

In 1988, only the first four regions of the project had completed training and four regions in phase II had trained very few staff. Major constraints were the short duration of training (three to five days), during which center directors were introduced to all project components, but were not able to benefit from an adequate level of training in each program.

Also, the lack of qualified personnel in health centers prevented center directors from leaving their centers to attend regional level training. On the other hand, health center directors were not prepared to train their staff and to supervise them. Many training subjects were not covered by the project, such as entomology and the expansion of the reinstalled HIS.

In view of this situation the following had been recommended:

1. Increase of assistance by other donors to support required technical assistance to reinforce the training of trainers and training of all health center directors, as well as the institutionalization of training at the regional level so that all peripheral health center workers might benefit.
2. The deployment of Peace Corps Volunteers, who might work in conjunction with regional training supervisors.

Project-Related Criteria Affecting Sustainability¹

Perceived Effectiveness

A. The national training policy is a component of the national health policy declaration of August 1973. It was in 1987, however, nine years after the international primary health care conference at Alma Ata, that the concept of integration of the various PHC components; maternal

¹The following criteria and their indicators are presented in Table 1, The Sustainability Table; thus, under A the indicator for the respective criterion is discussed, under B the respective indicator is discussed, and so forth as has been done above in earlier sections of this Appendix.

and child health, family planning, and nutrition was initiated in the curricula of nursing schools. In Rwanda, training of secondary level health personnel (nurses, social assistants) is the responsibility of the Ministry of Primary and Secondary Education. The introduction of primary health care in the curricula of nursing schools led to the establishment (1987) of a Health Bureau in the Ministry of Primary and Secondary Education. The Health Bureau is charged with developing primary health care programs to be submitted to the Educational Council. Primary health care is an integral component of curricula in primary and secondary schools, as well as universities. Introduction of primary health care into the school of medicine curriculum took place in 1990.

Policy and implementation of continuing education strategies were introduced by the CCCD project, which also helped the MOH personnel acquire skills in program planning, using EPI as a model. At the time CCCD was ending, the MOH realized much still needed to be done in order to train enough personnel so that each health center had the staff it needed. In light of this, the MOH launched a continuing education strategy. Since then, the epidemiology and EPI divisions have followed annual plans for continuing education, integrating EPI, CDD, and HIS. Later, the plan was modified so that different types and levels of personnel were trained during specific quarters.

B. Analysis of statistical reports, supervision checklists and epidemiological studies have made it possible to measure the impact of training and to identify new areas of need. This has been most regular and complete for EPI. In CDD and Malaria control, studies were conducted in 1992 to determine the impact these programs have had; training data were also collected.

C. In spite of the large number of health personnel who have been trained both before and after the project, there has been no operational research or specific studies to assess the quality of training programs or to find strategic solutions.

D. The use of data for decision making has been effective. Decisions are based on HIS and supervision reports, as well as on the epidemiological surveillance information. Let us point out, nevertheless, that data are used more often and effectively in EPI than in CDD and Malaria control programs. In these two programs, studies and data have not yet been considered permanent information on which decisions should be routinely made.

E. The staffing level is considered insufficient if one considers the woefully inadequate number of physicians and nurses compared to the total number of health facilities (261 physicians and 1226 nurses for 255 health centers and dispensaries, and 34 hospitals). The ratio of health personnel/population was of one nurse per 6,000 in 1990. Personnel distribution is inequitable. In urban centers there are on average seven qualified agents per health center, whereas rural areas have approximately two qualified staff members per health center. Motivation to keep staff in place is at a low if one considers the reduction in salaries (-20 percent) recently ordered by the government, the workload brought on by the Bamako Initiative (BI) and the isolation in rural areas. On one hand, the recent establishment of private clinics in Kigali (29 in two years) is causing the flight of health personnel, who find more favorable working conditions in the private

sector. Personnel at all levels are dependent on training and/or supervision financed and sometimes provided by donors and lenders, especially UNICEF. The ever present threat of termination of these benefits and the absence of an appropriate state motivation system threatens to become a serious hazard to service delivery at public run health centers. The government does not hide the fact that at the moment, training and supervision are being conducted only because the activities are financed by donors or lenders.

F. If one considers perception at the level of the public, this criteria, training, cannot be applied. But training is perceived by health center clients as an important factor of progress. Meanwhile, its impact should be measured by regular supervision and documentation.

Integration and Institutional Strengthening

A. There is a coherent supervisory system, decentralized to the regional and peripheral levels. Supervision is perceived at all levels as an essential activity in assuring service delivery quality and resolving problems. The CCCD project helped in the definition, development, and execution of the supervisory concept and in its use as a problem identification and resolution mechanism at the health facility level. Supervision is performed at three levels:

- the national level -- supervises by program, on a quarterly basis,
- the regional level -- also supervises quarterly
- sub-regions -- monthly by the chief medical officers

The supervision strategy is integrated at the regional level by all of the primary health care programs, but it includes vertical supervision of the AIDS, leprosy, and tuberculosis programs.

Sometimes supervision covers private as well as public health centers. All health centers visited have stated that they are supervised on a somewhat regular basis. An assistant medical officer of a public health center, recently integrated into the Bamako Initiative, received nine visits in 1992, four by the medical supervisor in charge of all primary health care activities at the health regional level, three by the health regional EPI supervisor, one by the supervisor in charge of the AIDS program, and one by the supervisor in charge of leprosy and tuberculosis. The consolidated (sectarian or religious run) health center at Gikondo received seven supervisory visits; three by the EPI supervisor, and four by the leprosy and tuberculosis supervisor.

National and regional EPI supervisors use the supervisory checklist developed under the CCCD project. The CDD, Malaria control, and HIS programs are included in EPI supervisory checklists. But, PHC medical supervisors from regional headquarters used a comprehensive instrument which includes all primary health care components developed under the MCH/FP (maternal and child health/family planning) project, in 1991. This instrument's use was quickly dropped because of its length, but is expected to be revised soon. Supervision results are

registered in the health center ledgers and in a supervisory report addressed to the physician of the health region, the health center director, the president of the health center management committee, and the administrative head ("Bourgmestre") of the community.

The financing for supervisory activities is provided, at both the national and regional levels, by donors and lenders, especially UNICEF in the case of EPI. Routine supervision, however, is currently threatened by obsolete vehicles and their frequent requisition because of the war and also the MOH's failure to pay or delay in payment of supervisors for supervisory visits. In addition, the absence of cohesive integration of preventive programs at the base of PHC (EPI, CDD, MCH/FP, leprosy and tuberculosis, AIDS, etc.) structures carries with it a duplication of supervisory efforts and therefore a waste of resources nationally and regionally.

B. Integration of the delivery of care at the service level is not applicable to training, which is a support strategy and not a service.

C. Integration at the national level into MOH structures is effective because training is an integral part of service delivery offered by the national EPI, CDD, Malaria, and HIS programs; all managed by the Ministry's Division of Epidemiology and Public Hygiene (EHP).

D. Support activities, operational research and/or special studies to assure training quality and its cost/efficiency have not been perceived as necessary by responsible parties at the national level in spite of recommendations to that effect in the May 1988 end-of-project evaluation.

E. Competency based assessments of worker performance have been conducted through the analysis of supervisory checklists that employ a scoring system. This helps to identify the performance level of health workers at facilities in supervised activities; in addition, recurrent problems are identified and solutions developed. Also, it points out items to be reviewed during the next visit and problems requiring intervention from the central level.

F. The need for technical assistance for training activities is felt only in training mid-level personnel managing EPI, CDD or Malaria control programs. WHO has been asked to provide this assistance beginning in April 1993. There are enough resources at the national and regional levels, however, to assure planning and management of training programs for personnel at the secondary level.

Local Financing and Community Participation, and the Role of the Private Sector

A. Costs assumption by the Rwandan government is almost nonexistent, except for staff salaries, which the government paid during the CCCD project. All resources necessary for training, including trainer and participant per diem, educational material, and transportation are furnished by donors and lenders, especially UNICEF, by way of the EPI program.

B. Training is not taken into account by the cost recovery system.

C. There is a dynamic private sector offering training. It is the Office of Consolidated Medical Training for Rwanda (BUFMAR), that manages 98 consolidated centers representing 40 percent of the country's health centers. Each year, BUFMAR organizes six one-week primary health care training sessions. Three are theoretical and held at Kigali and the other three are practical sessions conducted at health centers to assure follow-up of trained personnel. BUFMAR also holds four weekend recycling sessions per year for staff from consolidated centers and invites MOH trainers. During our visit to Kigali, BUFMAR organized a week of training in health education for 30 assistants in charge of health education in consolidated centers.

D. Donor complementarity is effective considering UNICEF's role of supporting training activities for not only EPI, but also CDD and HIS, while the World Bank finances the other training programs through its MCH/FP project. WHO finances the training of intermediate personnel for the management of EPI, CDD, and Malaria programs and WHO, USAID, and Belgian cooperation offer grants for long term education.

Strong Training Component

A. The development of a training strategy has been an effective tool for CCCD project implementation. Although the CCCD project was not able to reach all training targets (278 physicians and health personnel in addition to 389) during its life of project, an ambitious post-CCCD training plan has managed to train health center personnel not covered by the project. This was done by training of trainers at the central level with regional decentralization of training or by a regional team assisted by national trainers. In CDD for example, basic CDD training (15 days) was implemented for 178 health agents in three hospitals throughout the country, during 1990-1991.

B. Development of a training of trainers strategy and its subsequent implementation began under the CCCD project and continues today. At the end of the project, a training plan continued to be elaborated, and was implemented by nationals, with the objective of training three agents per health center in EPI, CDD, and HIS activities. After 1990, eight regional training sessions took place training hundreds of health agents in various domains. The EPI division that manages this training, however, does not know the total number of agents who have been trained through its training program. This information is recorded at each region. The Kigali health region alone has trained 201 personnel since 1990. In Kigali health centers visited, at least six agents had been trained either in the EPI recycling effort, or the MCH/FP recycling effort by the World Bank project. One estimates the total number of agents trained in training of trainers sessions, since 1990, to be about 900.

Training plans and programs are formulated by the EPI directorate or the family health/WB project staff, after consultation with each regional head (training workshops are conducted on a quarterly basis). Plans are drawn based upon regional targets. Next, an estimate of resources necessary to conduct the quarterly workshops and a written request are submitted

to the donor. Training lasts five days, usually divided among EPI (two days), CDD (one day), HIS (one day) and other subjects identified by the region (one day). The 1993 action plan intends to include acute respiratory infections but malaria control is not emphasized in the field of continuing education.

The development of continuing education at the regional level is not complete due to the lack of training strategy at the health center level. The only training offered at health centers is through regional supervision. Regional supervisors have indicated the lack of training follow-up by center directors. Because of this, CDD agents trained at the hospital level, who have been provided material and equipment to set up ORT units, have not followed through with instructions. In addition, ORT continues to be done without any demonstration or surveillance of mothers (two centers out of seven visited had an ORT unit). At the end of training, agents are given practical manuals for managing EPI and CDD activities, but it seems that these documents are often filed away somewhere or are not shared with other center agents. To complete the EPI training cycle, the national division has undertaken the training of refrigeration and maintenance personnel for the cold-chain in all seven regions of the country.

C. Already discussed above under Perceived Effectiveness, A.

D. Assessment of service training needs is performed by regional and national supervisors, or through HIS or special study results. In the case of EPI, immunization coverage data results are used as well as specific studies on tetanus and polio. In the case of CDD, a special study in 1992 clearly identified workers' specific training needs.

E. Training of trainers is used as a special strategy to cover the largest number of personnel at the peripheral level. National and regional program managers had been trained under the CCCD program, but have not been retrained since. Their retraining is expected in May 1993 with the assistance of WHO. Execution of training programs at the regional level is assured by the regional training team and by supervision from the national level. This team is in charge of identifying training needs of agents by health center and coordinating the organization and execution of training at the regional level with national EPI supervisors.

F. Project supervisory activities are not integrated into existing MOH training structures. There is a Division of Judicial Affairs, Education, and Planning at the MOH that oversees short and long-term training activities which are conducted outside of Rwanda and assures coordination with the Ministry for primary and secondary education. The latter manages education in health sciences schools and primary health care training in the school system. There is good collaboration between these two Ministries when formulating curricula for health sciences education. MOH also assures coordination with the Ministry of Higher Education.

It also cooperates with the Ministry of Public Administration to identify MOH candidates for multi-disciplinary in-country training given by the Ministry (secretarial training, accounting, computer sciences, etc.). The Ministry is also in charge of training health assistants through the Ministry of Public Administration and financing of the family health/WB project. It is kept

informed about the continuing education activities through the annual MOH report. In addition, it is asked to participate in the family health/WB project by ONAPO and participates in their training of trainer activities.

Lessons Learned

In examining project sustainability in Rwanda, the team has learned three main lessons:

1. If cooperation between the public and private sector is complete and effective it will maximize project sustainability. A special aspect in Rwanda is that it has permitted, promoted, and sustained a private sector of consolidated health centers run by religious groups. These centers receive support from their own organizations, BUFMAR, and also from the State in the form of qualified personnel, medication, equipment for EPI, CDD, and for health training and education. With its strong contribution to service delivery (40 percent of health centers in the country), its system of self-reliance and government support and its integration with all national health policies, the private sector has played a considerable role in sustaining CCCD activities. Today, the population has the choice of three services: public service without BI; consolidated services; or public services with the Bamako Initiative program. All three offer the same basic services. Quality of care differs among the three services according to number of trained personnel and the availability of medication. The difference in quality and availability of care do not differ so much with EPI and CDD, but they can be less favorable with Malaria control services in public health centers without BI, where the problem of lack of stock of chloroquine has not been solved.
2. The imbalance of structural distribution of programs in the MOH organizational chart entails an imbalance in program management and execution at all levels, especially the secondary and peripheral. Among all CCCD project activities, EPI is the most organized, represented, and supported at all levels because it is administered by an office of its own. Since CDD, Malaria control, and ARI fall under the Epidemiology Office, they have not enjoyed the same level of development as EPI. EPI, however, includes them in its continuing education program. In supervision, EPI is more active because it has its own resources and the support of UNICEF, while the other programs are afflicted with a lack of access to resources. At the regional level, EPI supervises CDD, Malaria control, and HIS activities more or less effectively, but not to the extent as for EPI. A structural reorganization or an improvement of cooperation among the three programs is needed at the national level to assure support of the weaker programs and to maximize the use of resources for the benefit of all programs.
3. Health personnel motivation is essential to assure program success and sustainability. In Rwanda, staff receive their main motivation from per diem received for training sessions and payment for supervisory visits. Unfortunately these incentives are provided primarily by UNICEF and the Family Health/WB project. Their phase-out will have a profound impact on support activities, especially supervision. In the absence of a cooperative

revision of the system in terms of sustainability and the sensitization of recipients as to the precariousness of the situation, any sudden end to these incentives will lead to a loss of job interest among many personnel and, consequently, to a drop in the quality of service.

Recommendations

1. Improve the system of coordination and collaboration at the Department or Directorate of Epidemiology and Health so that all programs administered by this Department have an optimal possibility of developing according to training and supervision plans. To accomplish this, Malaria control, CDD, and HIS programs, managed by this Department, should benefit from the know-how of the EPI division in planning and organizing training workshops and in supervisory activities. All programs should be integrated into the same training and supervision strategies.
2. Emphasize training as an avenue to assess the degree to which training objectives (training three health staff per health center in the country in EPI, CDD, and HIS programs) have been met. This assessment should collect information on the number of staff trained and also on their level of competence. This will assist future orientation in training and supervision.
3. Decentralize the training process to the health center level by strengthening the capabilities of center directors through educational courses so that they can provide their staff with on-the-job training and help their staff maintain and improve skills acquired during regional training.

HEALTH EDUCATION

Background

The CCCD project's aim was to improve health education by increasing involvement of the local people in the project's activities. In 1987 the goal was to develop a coordinated strategy and a plan of operation for health education within the framework of CCCD activities. With the support of the CCCD project, health education served several functions, including recognizing symptoms of the targeted diseases, improving the treatment of fever and diarrhea at home, increasing awareness of the schedule for immunizations, and increasing attendance at health centers offering CCCD services.

Health education was one of the strongest components of the CCCD project in Rwanda. Through technical assistance, training, and logistical support, the project contributed to strengthening the training and research capabilities of Health Education Division officials, to the development and production of educational materials, to the training of primary care workers in promoting health messages and finally, to establishing methods for monitoring and evaluating programs.

By the end of the project, health education had become a strong contributor to the EPI and CDD programs, but the Malaria control program could not be developed to the same extent because of the delay on the part of the Rwandan staff in adopting the new treatment scheme.

The Health Education Division has gathered a significant collection of basic information on the knowledge, attitudes, and practices of health workers and of mothers regarding the three CCCD interventions. This data base offers considerable documentation for future research activities and for health education programs concerning child survival programs.

The 1988 CCCD end of project evaluation recommended:

- Introducing health education methods and strategies as an integral part of the training of workers and in their continued education (taking into account the results of the KAP surveys regarding the development of educational objectives and health messages), and
- Developing a health education project for the Malaria control program using the health messages and materials developed during the 1987 KAP survey and the newly developed plan for treating malaria. Every effort should be made to use the same promotion strategies used in the EPI mini-campaigns, so as to interest more health workers while also increasing the public's interest.

This sustainability study enables us to evaluate to what extent these recommendations have been taken into account and to what extent health education has continued to develop after the project's end.

Project Related Criteria Affecting Sustainability

Perceived Effectiveness

A The definition of the health education policy is part of the Déclaration de Politique Sanitaire (Health Policy Statement) dating back to 1973. Health education is an integral part of all the PHC programs and, due to the MOH's recognition of the importance of health education, it was raised from the status of a department to that of a division beginning in January 1992. The division prepared its first plan of action for 1993 during the last trimester of 1992 after a field based needs assessment was conducted.

B. Division staff conducted a large-scale survey in August and September 1992 to evaluate the impact and the perception of health education among administrators, health workers, and the populations served.

C. The division has not undertaken any operational research activities or special studies to measure the quality of health education since the end of the project.

D. Data collected during the August and September 1992 survey were the basis of the division's change to the community mobilization approach. The division has provided for the training of two community workers per subdivision, who are to be selected by the community and who will be responsible for community mobilization. Decentralization of training and supervisory programs at the regional health level, with support from the National Division is also planned.

E. The Health Education Division has a fair number of personnel at the national level, where ten professionals support the educational activities of twelve MOH projects and programs. They are assisted by the staff of the Reproduction Unit of the Ministry of Primary and Secondary Education's Teaching Department. The Division is represented by a health educator in each region. At the health center level, social workers or health care sub-professionals give educational talks. In all the health centers visited, the talks were organized daily, on a revolving basis, by personnel who seemed enthusiastic about her/his duty.

F. The public's perception of health education is positive, judging from the level of involvement in the immunization program, the extent to which ORS packets are being used, and heavy attendance at the health centers. The survey conducted by HED in August 1992 described the interests of the public, who discussed with the surveyors the relevance and usefulness of certain educational messages, as well as the construction of latrines and water supply schemes. The public also expressed its viewpoint about immunizations, which is given preference in the MOH strategy.

Integration and Institution Strengthening

A. The Health Education Division has not yet developed a supervisory strategy. In the health centers visited in the Kigali region, there was no evidence of any supervision of educational activities, even though there is a health educator at the regional level. The Division has demonstrated an ability for quick response to field needs during an epidemic. It should be noted, however, that the EPI supervisory guide includes a section on health education and social mobilization, but the Division does not use the information gathered from supervisory visits.

B. Health education is integrated into the health centers' activities at two levels: (1) At the health center level; where workers conduct 15 to 30 minute morning educational talks which follow a pre-established schedule. The program includes all aspects of prevention, including family planning, hygiene, and AIDS. Special topics are also covered and may address such subjects as the most common causes of sickness noted at the center level. At all the health centers visited, the team observed the routine practice of giving educational talks and regular use of audiovisuals on most of the prevention programs.

(2) Among the people; health education takes the form of community mobilization spearheaded by a political official who has been appointed the fourth member of each subdivision. This person is in charge of overseeing the 50 community mobilization squares and works closely with the heads of the health centers to ensure that children arrive on schedule for EPI activities.

Significant EPI achievements are largely due to the activities of these mobilizers, but their effectiveness is declining because of the establishment of a multi-party system in Rwanda. The result is that the local people feel less obligated to participate in EPI because they no longer fear reprisals. To maintain community mobilization, the National Health Education Division decided in its 1993 plan of action to adopt a system where community mobilizers are elected by the communities they represent.

C. Health education is well integrated at the national level into the administrative organization of the MOH. Concerned about effectiveness, the MOH has classified Health Education as a division in its organizational plan. This puts it on a par with the other divisions it is supposed to support. Moreover, a dozen projects and programs within the MOH request collaboration with the Health Education Division. In response to such demand, the MOH has assigned Division officials to these projects.

D. Support activities in general appear inadequate, considering the lack of efforts for operational research since the end of the CCCD project and failure to retrain public system workers. Moreover, the Health Education Division does not use the HIS, nor does it use supervisory assessments. It should be noted that the BUFMAR, non-MOH operated health education services, organizes health education training sessions for the staff of sectarian centers.

Thirty staff members received BUFMAR's training during the team's stay in Kigali. BUFMAR has planned a follow-up for these participants to take place at the health center level in order to strengthen their skills in health education.

E. There is no system of follow-up to the assessment of workers' health education skills at any level of the system. The team found no indication that information from the health education section found on the supervisory checklist was being used, nor did it find any indication of supervisory activities by the health educator within the Kigali health care region.

F. Health education officials have acquired strong skills in training research, the development of educational messages, and in monitoring and evaluation. They do not feel a need for external assistance, but they complain of a lack of resources to utilize their skills fully.

Local Financing, Community Participation, and Private Sector Provision of Services

A. The MOH financial contributions to health education are limited to paying staff salaries. The main part of health education activities is supported by UNICEF and other donors, who provide the financial, material, and logistical means to carry out health education activities.

B. The cost recovery system has not made provisions for funding educational activities in the public system, not even in the centers operating under the Bamako Initiative project.

C. Rwanda has the distinct feature of having an affiliated private sector offering training services and educational support for health education. The BUFMAR calls on the services of a GTZ technical assistant, who has helped in the development of all kinds of educational materials (31 educational topics on flannel boards, posters, and pictures boxes). These materials are produced within the Reproduction Unit of the BUFMAR and are resold at subsidized prices to affiliated (sectarian) health centers, and at a higher cost to public health centers. Sales to public health centers were started only in 1992.

D. The health education activities are supported by UNICEF, the GTZ, WHO, Franco-Belgian Bilateral Cooperation, The International Plan, and the BUFMAR. All these agencies cooperate with the Division on the specific projects they finance.

Strong Training Component

A. The BUFMAR has developed a health education training strategy designed for staff members of affiliated centers. In the public system, only the Family Health Project/WB has included health education training in its programs and has done so in the form of training of trainers. The health education training efforts launched by the CCCD project were not continued when the project ended.

B. The BUFMAR has developed an on-going training strategy. This strategy involves conducting practical follow-ups for its participants through affiliated centers six months after their

initial training. The Family Health Project/WB has also included health education in its system of on-going training. Health education is not included in the on-going training programs of the EPI division.

C. Already discussed above under Perceived Effectiveness.

D. Training needs assessments of departmental training needs have been quite poor, if one considers the lack of follow-up to health education activities by the National Division and by regional personnel.

E. The BUFMAR as well as the family health WB/project have adopted a strategy of training of trainers who are in charge of training health center heads. But, in addition, the BUFMAR is directly training workers in charge of health education at the departmental level.

F. The training activities are not integrated into the existing training structures of the MOH. One example of this is the lack of collaboration between the EPI division and the Health Education Division with regard to EPI personnel training. Moreover, even collaboration between the Health Education and Training Divisions is not evident.

Lessons Learned

The acquisition of skills by workers is not sufficient for ensuring the sustainability of programs if the workers do not have the necessary resources to continue their activities. Since the end of the Rwandan CCCD project, officials of the Health Education Division of the MOH have not been able to develop sufficient educational activities for the Malaria control program. It is important to note here that the immunization and CDD programs have enjoyed significant support from the Health Education Division, in spite of the fact that malaria is considered the primary cause of sickness and death in Rwanda.

Recommendations

1. The impact of educational activities conducted within the EPI and the CDD programs should be assessed in order to plan necessary corrective measures for these programs and then to train personnel for these purposes.
2. Health education activities should be developed within the Malaria control program in order to increase Rwandans' awareness of the prevention of and protective measures against malaria. To measure this activity's effectiveness, the KAP surveys conducted under the CCCD project should be re-initiated.

COST RECOVERY

Background

Cost recovery is a seasoned concept in Rwanda. A law was passed in 1986, setting fees for medical care in public and consolidated (sectarian) health facilities. The law specifically covered fees for external consultations and for daily hospitalization. The fee paid by the patient covered medication and treatment. Fees collected in public health facilities under this system were to be turned over to the communities for development activities including health. Government guidelines were established for this cost recovery approach as the government wanted the development of health centers to coincide with community development.

The discouraging results of this approach, however, and the chronic burden of lack of financial resources, particularly in public sector health facilities, led the Health Ministry to reassess the situation, and to adopt a new policy to accelerate primary health care in the country.

The subsequent cost recovery program had two objectives: the improvement of management of the national pharmaceutical sector and self-sufficiency in essential drug supply by implementing cost recovery, based on the sale of medications.

Community participation in cost recovery has been identified as a factor contributing to sustainability. One of the main strategies of the cost recovery program rests on its progressive implementation by the community, and depends on the community's desire to participate actively in health system management. In addition, the community supports the principal that income generated by health centers should be used to maintain these centers and should be allocated to community health activities defined by health center management committees.

Nevertheless, it must be emphasized that the development of the cost recovery system in primary health care is hampered especially by the country's general social and political circumstances and the armed conflict under way in the northwest since October 1990. Moreover, the main source of funds for the program, covering essential drugs and certain other operating expenses such as fuel for the cold-chain, provided by UNICEF, is to be withdrawn in 1994.

Meanwhile, prospects for the support of the Pharmaceutical Department in Rwanda (OPHAR) are uncertain. It is expected that a national supply association for essential drugs and medical material will be established, whose shareholders will include the Government of Rwanda, the health personnel union, and the Center for Training and Cooperative Research. The main goal of this association is to make essential material and drugs available and accessible to health institutions under the acceleration of the primary health care (PHC) program. The association shall also promote rational use of essential drugs, support self-organization, and promote other philanthropic activities it considers worthwhile.

The delay in adopting the bylaws of this association, its unknown financial status, difficulties found at the OPHAR (National Pharmacy) level, the lack of understanding of the cost recovery system in centers currently integrated along Bamako initiative lines, as well as the current social and economic crisis of the country, are all important factors effecting PHC in Rwanda. These factors, in the short term, could compromise PHC development and, in turn, its sustainability.

Strategies for cost recovery

Because the country's political crisis compelled the team to curtail its visit, it was not possible to proceed directly with an extensive field survey to assess health center operations in terms of costs and cost recovery. Nevertheless, the team did collect some information and data on the subject, through:

- various interviews with persons in charge of the operational support group to implement the Bamako Initiative as well as OPHAR, at health centers visited. First, it must be pointed out that only some Kigali health region centers were visited. This also limits the representative nature of data;
- interviews with directors of consolidated health centers (CS), mainly run by religious groups, and who already use the cost recovery system;
- different reports by the BI operational support team.
 - The Rwanda BI (1991-1994);
 - The report of the Eighth Medical and Paramedical Personnel Recycling Congress in Rwanda (12 to 15 September 1992). This report indicates current managerial problems in cost recovery, and provides a summary of the quarterly financial balance for seven health centers in the Rhengeri health region, in the northwest of the country; and
 - Instructions by the Ministry about management of public health centers (November 1992).

Therefore, the team provides some considerations on the Rwanda cost recovery system based on this relatively scattered data.

Fee setting

Two official documents define the fee system at country health facilities:

- Law no. 14/1986, of 10 June 1986, covering fees for medical care in public and consolidated health facilities. This law was in effect until the implementation of the PHC acceleration program. It covers fees for consultation and hospitalization. Medication is provided free. These fees, however, are low and are only accepted by consolidated public health facilities which are not integrated along BI lines.
- Ministerial Instruction No. 4681, of 22 December 1992, sets the price for medication in public health centers. Prices are set according to the number of prescribed medication units and minimum and maximum prices are set for each drug.

Organization

Total income from unintegrated health centers (i.e. not yet integrated along BI lines) is turned over to the administrative head of the community in charge. The community, in turn, decides on budgetary allocations for each health center. Often, experience shows, health loses out to other community priorities. In addition, small operating amounts are allotted by the ministry for health regions. The regions are responsible for dividing the allotment, equitably, among the health centers they manage.

Consolidated (sectarian) health centers are 60 percent financed by the cost recovery system. Government support is 21 percent and foreign assistance 19 percent. Another source provided the following breakdown for public health centers: recovery 69 percent, government 27 percent, and foreign four percent.

These figures show that recovery is not enough to cover the operations of public health centers. This situation led the government to implement a program of PHC acceleration in the country. An operational support team was formed in March 1989 to establish BI. To begin with, this team organized ten week regional seminars on community health organization. The seminars were attended by mayors, "préfets", "bourgmestres," and health facility directors. The intention was to make them more aware of the program. Subsequently, implementation strategies were defined and an information and "training the trainers" workshop was held in May 1990 with the participation of central Ministry of Health representatives and regional health directors. Integrated health center operation mechanisms and their management were defined. It was decided that all integrated health centers could keep their revenues. Revenues collected are placed in an account opened in a local bank, in the name of the health center. An agreement was signed to this effect, by the "bourgmestre," (community administrator), and the medical director of the respective health region, thereby linking the community where the health center is located, to the Ministry of Health.

Health center revenues are derived from:

- The sale of essential drugs
- External consultations, hospitalization, including delivery and other services, such as ambulance service
- Subsidies, fees
- Donations and grants
- Bank interest, if applicable.

Payments from these revenues are authorized by the management committee office for the purchase of essential drugs, supplies, maintenance material, as well as for the investment in equipment such as cars, ambulances, refrigerators, etc.

Financial analysis

The team was only able to find information on seven health centers, between Kigali and Ruhengeri to the northwest. It expected to compile data for two quarters of 1992 but information was not available except for three health centers (sometimes even this was incomplete.) The armed conflict may well explain these gaps in data. During its short stay, the team was only able to visit seven health centers in the Kigali health region. Three of these centers are integrated into the BI program.

Essential drugs

Regional health centers maintain a supply of 40 essential drugs. The list is expected to increase and rise to about 60 essential drugs. Regional warehouses are supplied by the BI operational support team.

The analysis of revenues from seven health centers during the first quarter of 1992 demonstrates that the pharmaceutical sector represents an average of 64 percent of total revenue. This percentage varies from 46 to 95 percent, thus clearly showing the role medication plays in cost recovery.

Expenses

An analysis of first-quarter expenses of the seven health centers leads to the following conclusions:

- a) Sixty-four percent of the quarter's revenue is spent on operations. In one health center expenses were as high as 79 percent of revenues.

- b) Salaries and bonuses are a burden on the system. They represent an average of 20 percent of expenses. In one health center this percentage is extremely low, around three percent, for reasons that could not be determined but it is very high in another health center (34 percent of expenses). It may be that the excessive burden of salaries and bonuses on the system has to do with the low level of wages and is also due to the indiscriminate recruiting of workers at health centers, paid by community financing.
- c) The paying parties, or health center clients who pay for treatment and essential drugs, represent an average of 60 percent of users of external consultations and hospitalizations. This percentage declines to 39 percent in one of the health centers, therefore reflecting a high degree of exemptions from payment. But the percentage rises to 98 percent in another health center (coincidentally, the same center where bonuses and salaries represented 34 percent of expenses). This could mean that if staff feels closely linked to revenues, there is a lower rate of exemptions.
- d) Non-payers (exemptions) constitute those "having rights," and their standing is not well defined. This apparently includes government employees and officials as well as indigents; the latter are normally identified by management committees. In reality, there is no selection criteria for these groups and no procedure to compensate health centers for the drop in earnings, which is very significant in some cases.
- e) Affordability of prescriptions in relation to the amounts paid for medication to health centers, compared to prescriptions issued, was at an average of 45 percent for the seven health centers. In one of the health centers, however, 100 percent of prescriptions during the quarter had been paid for while in another the figure was just 28 percent. Average cost of a prescription was RF 241.31, or US \$1.66 (exchange rate at the beginning of the mission was RF 145.67 per US \$1.00.)
- f) Average revenue per patient was RF 252.55 (US \$1.70) for all health centers. If this fee is carried over, however, only to those who are supposed to pay for all of the provisions, this average per patient is higher (RF 423.82, or US \$2.90) which indicates that the fee level is too high.
- g) Average cost per patient (health center expenses reported for all clients during the period) is RF 161.18 (US \$ 1.10.)

Lessons Learned

Cost recovery has improved attendance at health centers. In all visits, the number of consultations is two to three times higher than before the implementation of BI. Contact between the population and health services has improved and a better integration of care has also resulted.

Cost recovery has also improved community participation, even if the current role played by communities in management is not very effective. The setting of rates is done by management committees in cooperation with health center agents, based on instructions by the Ministry that define minimum and maximum prices for drugs. Meanwhile, there are no criteria on how to apply minimum or maximum charges to a patient. Also, the absence of management tools to assure management efficiency can be another negative factor mitigating against community participation, a key element in program sustainability.

Oral rehydration kits are not subject to cost recovery, like immunizations. The availability of ORS, however, depends largely on a health center's finances because all essential drugs are purchased by the cost recovery system. This means that any shortcoming can have a negative impact on a very well structured program like CCD.

In spite of the diversity of sources of health center revenue, essential drugs continue to be the key element representing, on the average, 64 percent of revenue.

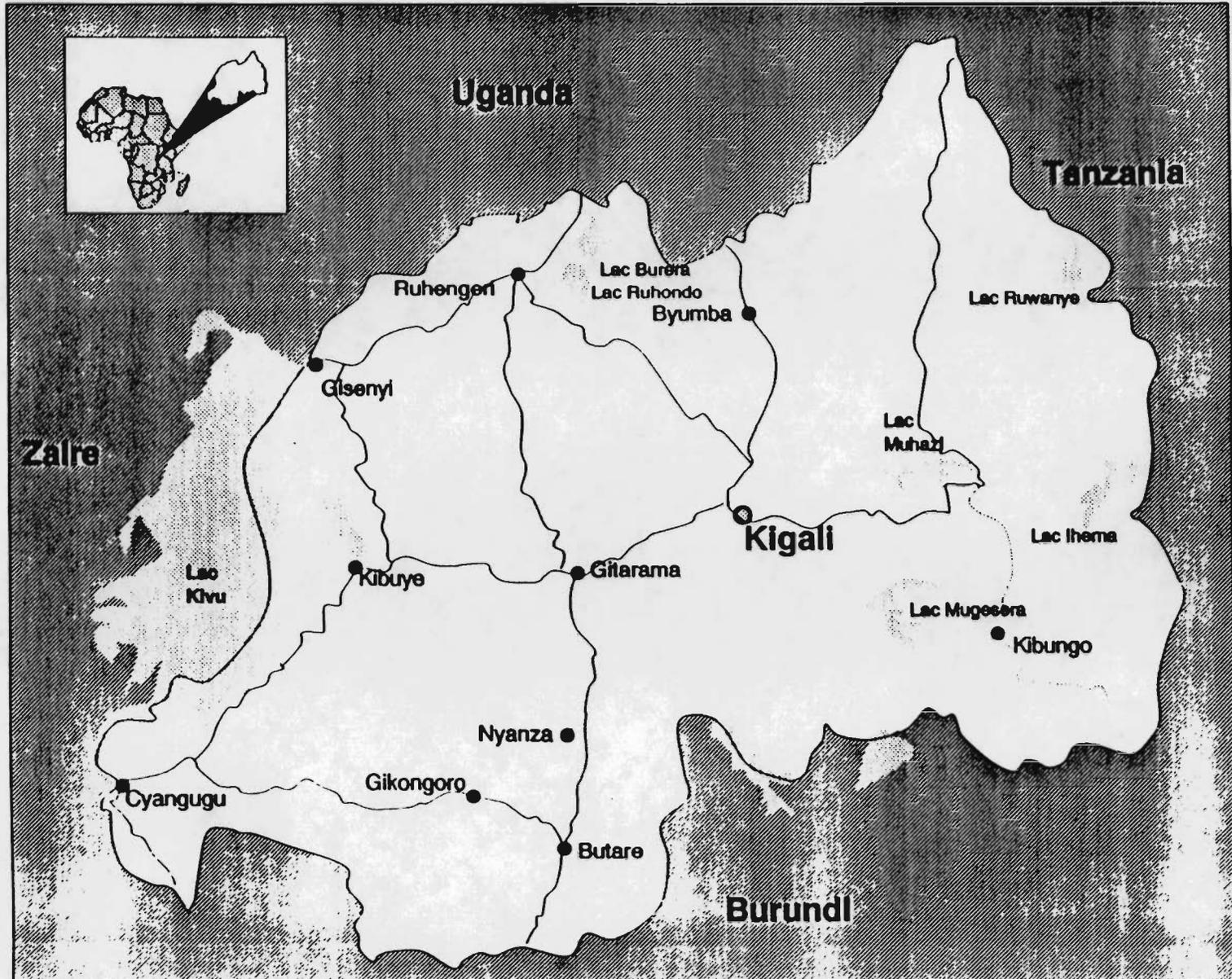
Recommendations

1. Since BI has been defined as the solution for a stable PHC program, sustainability efforts are required not only to accelerate PHC implementation in all areas in the country, but also to establish effective management conditions. In this respect, a detailed analysis of health center finances, the identification of appropriate management tools, as well as concrete follow-up by the community, is needed to improve BI administration.
2. With the expiration of UNICEF coverage of essential drugs set for 1994, and considering the primary importance of the impact of essential drugs on health center revenues, it is critical to begin considering other financing and supply sources immediately, especially for the public sector. The consolidated sector will probably continue to be supplied by the Office of Consolidated Medical Training for Rwanda (BUFMAR).
3. Examine the financial involvement of the state in a global analysis of costs for better distribution. Indeed, as already mentioned, salaries and bonuses are a heavy burden on revenues especially at health centers with limited financial capacities. This could incur the risk of insolvency, especially in health centers with difficulties.
4. Criteria for exemption should be the object of an in-depth study. The practice of having the community determine the indigent needs review. How matters are decided on this issue could heavily effect the potential of health center cost recovery. Certain health centers have more than 60 percent of "non-payers" (indigents and "those having the right" included).

APPENDIX E

MAP OF RWANDA

Rwanda



APPENDIX F

**MOH ORGANIZATIONAL
CHART**

CURRENT ORGANIGRAM OF THE MAIN SERVICES OF THE MINISTRY OF HEALTH, AUGUST 1992

