

AGENCY FOR INTERNATIONAL DEVELOPMENT  
**PROJECT DATA SHEET**

1. TRANSACTION CODE:  A = Add  C = Change  D = Delete  
 Amendment Number: Original  
 DOCUMENT CODE: 3

2. COUNTRY/ENTITY: BURUNDI

3. PROJECT NUMBER: 695-0109

4. BUREAU/OFFICE: AFRICA 06 BURUNDI COMMUNITY WATER AND SANITATION

5. PROJECT TITLE (maximum 30 characters)

6. PROJECT ASSISTANCE COMPLETION DATE (FACD): MM DD YY 06 30 86

7. ESTIMATED DATE OF OBLIGATION (Under "B" below, enter 1, 2, 3, or 4)  
 A. Initial FY 83 B. Quarter 4 C. Final FY 83

8. COSTS (\$000 OR EQUIVALENT \$1 = )

| A. FUNDING SOURCE       | FIRST FY <u>83</u> |         |          | LIFE OF PROJECT |         |          |
|-------------------------|--------------------|---------|----------|-----------------|---------|----------|
|                         | B. FX              | C. L/C  | D. Total | F. FX           | F. L/C  | G. Total |
| AID Appropriated Total  | 245.4              | 84.6    | 330      | 245.4           | 84.6    | 330      |
| (Grant)                 | (245.4)            | (84.6)  | (330)    | (245.4)         | (84.6)  | (330)    |
| (Loan)                  | ( )                | ( )     | ( )      | ( )             | ( )     | ( )      |
| Other U.S.              |                    |         |          |                 |         |          |
| 1. Host Country         |                    | 688     | 688      |                 | 688     | 688      |
| 2. Other Donors: UNICEF | 722.4              | 568.9   | 1,291.3  | 722.4           | 568.9   | 1,291.3  |
| TOTALS                  | 967.8              | 1,341.5 | 2,309.3  | 967.8           | 1,341.5 | 2,309.3  |

9. SCHEDULE OF AID FUNDING (\$000)

| A. APPLIC. PRIORITATION | B. PRIMARY PURPOSE CODE | C. PRIMARY TECH. CODE | D. OBLIGATIONS TO DATE |         | E. AMOUNT APPROVED THIS ACTION |         | F. LIFE OF PROJECT |         |
|-------------------------|-------------------------|-----------------------|------------------------|---------|--------------------------------|---------|--------------------|---------|
|                         |                         |                       | 1. Grant               | 2. Loan | 1. Grant                       | 2. Loan | 1. Grant           | 2. Loan |
| (1) PP                  | 513                     | 545                   | -                      | -       | 330                            | -       | 330                | -       |
| (2)                     |                         |                       |                        |         |                                |         |                    |         |
| (3)                     |                         |                       |                        |         |                                |         |                    |         |
| (4)                     |                         |                       |                        |         |                                |         |                    |         |
| TOTALS                  |                         |                       |                        |         | 330                            |         | 330                |         |

10. SECONDARY TECHNICAL CODES (maximum 2 codes of 3 positions each)

11. SECONDARY PURPOSE CODE

12. SPECIAL CONCERN CODES (maximum 7 codes of 4 positions each)

| A. Code | B. Amount | C. Code | D. Amount |
|---------|-----------|---------|-----------|
| BR      | 330       | PART    | 330       |

13. PROJECT PURPOSE (maximum 480 characters)

To improve the quality of water and its sanitary use by assisting the Government of Burundi in implementing its spring-capping program.

14. SCHEDULE OF EVALUATIONS

| Interim | MM | YY | MM | YY | Final | MM | YY |
|---------|----|----|----|----|-------|----|----|
|         |    |    |    |    |       | 01 | 86 |

15. SOURCE/ORIGIN OF GOODS AND SERVICES  
 000  911  Local  Other (Specify)

16. AMENDMENTS/SIGNATURE OF CHANGE PROPOSED (This is page 1 of a \_\_\_\_\_ page PP Amendment)

17. APPROVED BY: Signature [Signature]  
 Title \_\_\_\_\_  
 Date signed: MM DD YY 08 02 86

18. DATE DOCUMENT RECEIVED IN AID/W OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION  
 MM DD YY \_\_\_\_\_

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I. SUMMARY PROJECT DESCRIPTION

A. Project Title: Burundi Community Water and Sanitation  
(695-0109)

B. Cost of Project:

|        |      |                    |              |
|--------|------|--------------------|--------------|
| AID    | - \$ | 330,000            |              |
| UNICEF | - \$ | 1,291,300          |              |
| GRB    | - \$ | 688,000            | (equivalent) |
|        |      | <u>\$2,309,300</u> |              |

C. Period of Project Implementation: Three (3) years, from July 1983 to June 1986.

D. GRB Executing Agency: Department of Rural Hydrology and Electrification, Ministry of Rural Development.

E. Summary Project Description: This project will assist the Government of Burundi (GRB) in implementing its on-going spring-capping program, which is primarily financed by UNICEF. Funds will be provided for the procurement of construction materials and related equipment which are necessary to cap an estimated 1,250 spring sources in the rural areas. As an average of 100 Burundi are served by a spring source, it is estimated that at least 125,000 persons (approximately 25,000 rural families) will gain access to safe water from capped springs. In addition, that target group will also be exposed to improved sanitation and hygiene practices related to the use of safe water. Sanitation and hygiene education is presently provided on the communal level by a number of extension agents: the fontainier (spring technician), who supervises the installation of the capped spring; the animateur/animateur (social work aide) in rural community social centers; and health workers in MOH and Mission health centers and dispensaries. To reinforce the effectiveness of their extension "message," funds will also be provided for the in-service training of communal administrators, who are generally responsible for supervising these agents, in the importance and uses of safe water from capped springs and in the protection of spring sources. The fontainier's work will also be supported by the production and publication of a manual on the construction and maintenance of capped springs.

The AID project funds will be supplemental to the UNICEF project funds for the GRB's spring-capping program. UNICEF has financed and institutionalized the spring-capping program on the communal level since its initiation in 1978. To date, 1,780 springs have been capped, and UNICEF funding for the period 1983-1985 will finance the capping of an additional

1,750 springs. During the three-year period of the project, then, a total of 3,000 springs will be capped: 1,250 with AID project funds and 1,750 with UNICEF project funds. With the phase-out of both UNICEF and AID support by mid-1986, an estimated total of 4,780 springs will have been capped under the GRB program.

The most attractive feature of the GRB's spring-capping program is its reliance on community participation for successful implementation. In a "bottom-up" approach to development, communes request the capping of specific springs, and the Burundi who will be served by the springs provide the requisite on-site labor under the supervision of a fontainier. Once trained and following his initial year on-the-job, the fontainier is then employed and paid by the commune. By 1986, an estimated 120 fontainiers will be working in Burundi's 114 communes, representing an institutional capacity to cap at least 1,000 springs a year.

F. Statutory Checklist: Satisfied (see Annex C)

G. Project Issues: None

H. Eligible Geographic Code Source: Code 941 Countries and Burundi

I. Project Waivers Required: None

J. Project Paper Design Team:

D. Blanc, Project Officer, REDSO/ESA

D. Light, Engineer, REDSO/ESA

C. Barnes, Social Analyst, REDSO/ESA

F. Awantang, Sanitary Engineer and Specialist

in Environmental Sanitation/Health Education, WASH

D. Cowles, Supply Management Officer, REDSO/ESA

P. Scott, Regional Legal Advisor, REDSO/ESA

## II. PROJECT RATIONALE AND DETAILED DESCRIPTION

### A. Project Rationale

With an average annual rainfall varying between 36-80 inches, Burundi is fortunate in having adequate groundwater resources for its population of 4.5 million. The most convenient access to water in Burundi's mountainous terrain is from the thousands of natural springs flowing from the steep hillsides. Prior to independence in 1962, about 10,000 springs

were capped by the Belgian Fonds du Bien-Etre Indigene. Since 1978, when the GRB's spring-capping program was initiated with UNICEF technical and financial assistance, another 10,000 springs have been identified for capping. Burundi is therefore in a favored position to respond positively to the mandate of the International Drinking Water Supply and Sanitation Decade (1981-1990): to provide clean water and sanitation for the world's population by 1990.

Health problems and disease patterns in Burundi are similar to those of many other developing countries. Using Ministry of Health statistics as a rough indicator, it appears that parasitic and infectious diseases are the primary cause of mortality for all age groups: for more than a third of the adult population and for almost half of infants and children in the two to five age group (source: GRB "Public Health Policy," May 1982). Although no nation-wide epidemiological studies on the prevalence of water-related diseases have been done in Burundi, some information is known about a few of these diseases. A 1978 cholera epidemic claimed hundreds of lives. In addition to cholera, contaminated water often carries hook-worm and parasitic amoebas and is the primary cause of bacillary dysentery, the current prevalence of which is indicative of another epidemic. These health problems are especially serious when weaning children onto foods containing contaminated water. In addition, gastro-intestinal diseases decrease the absorption of nutrients in a diet which is already of mediocre nutritional quality. Although difficult to quantify, debilitating water-borne diseases are known to increase absenteeism and contribute to lower agricultural productivity.

According to the GRB/UNICEF 1983-1985 Action Plan, the Government's long-term objectives are to:

- reduce the incidence of sanitation problems related to water;
- improve the standard of living of the population, especially for women and young girls who have the arduous task of collecting water for the household;
- reduce the incidence of epidemic diseases in Burundi, especially cholera (and now also bacillary dysentery) by the proper use of clean water; and
- encourage the rural development self-help efforts of the population.

In the area of rural water supply, the GRB is concentrating its limited investment budget on the spring-capping program and gravity-fed water systems to service health centers and dispensaries. UNICEF has been the lead donor in financing and implementing both programs. The Ministry of Rural Development's Department of Rural Hydrology and Electrification, established in 1980, is responsible for the programs, but lacks in-house technical and administrative expertise. This institutional weakness is compensated for, however, by the innovative UNICEF implementation model which focuses on active, communal-level participation and a technical design which minimizes requirements for imported construction materials and recurrent maintenance.

The organizational structure of the spring-capping program is based on the recruitment, training and supervision of the communal fontainier (spring technician). Candidates for the position of fontainier, identified by the communal administrators, are trained in groups of 20 at least once a year by the UNICEF National Officer (Marundi "deputy" to the UNICEF Project Manager) with the assistance of chefs de chantier and moniteurs (water supply foremen) and animatrices (social work aides). During the four-week training course, the fontainiers are trained by the foremen in spring-capping and masonry and by the animatrices in techniques of mobilizing and maintaining community participation in collecting local materials (sand, clay, gravel, stones) and providing the labor for the actual construction of the spring cap. UNICEF has trained 93 fontainiers to date, and this cadre has capped 1,780 springs throughout the country since 1979 (50 in 1979; 480 in 1980; 590 in 1981; and 660 in 1982).

In the area of sanitation and hygiene education, reliance is on the extension work of the Ministry of Health's health technicians, who work in dispensaries, assistant health technicians, who work in the health centers, and the Ministry of Social Affairs' animatrices, who work in the social centers (foyers sociaux). Within serious budgetary limitations, they are provided with health education materials, posters and audio-visual aids available from CARITAS and INADES. The most serious constraints to an effective sanitation education program (which would illustratively include promotion of the uses of safe water in the household for cooking, washing and personal hygiene, construction of latrines and environmental sanitation) include a lack in the number of trained personnel in both ministries, minimal budgetary resources for either increasing the cadres or providing in-service training and

support, competing functions of these cadres in the rural setting and a general lack of understanding of the extension "message."

The PID for this project proposed a sanitation education component which would have provided short-term, in-service training in water use and general sanitation/hygiene education to the health technicians, assistant health technicians and animateurs/animatrices. A sanitary engineer specializing in environmental sanitation/health education, recruited from WASH, participated on the Project Paper (PP) team to design this component. On the basis of meetings between and among the PP team, the Ministry of Rural Development, the Ministry of Social Affairs and the Ministry of Public Health, however, AID/Burundi (AID/B) decided that the most appropriate use of project funds would be concentration on the spring-capping program without a discrete sanitation/hygiene education component.

This programmatic decision reflects (a) attention which will be given to sanitation and health education with the AID/B's portfolio of on-stream and proposed projects in the health sector, (b) the difficulty in coordinating a sanitation education component among the various ministries at this time and (c) the probable limited impact of such a component appended to the spring-capping program.

AID/B's program strategy, presented in the FY 1985 Country Development Strategy Statement, is focussed on three interdependent objectives: increasing food availability to the rural poor, particularly in densely populated areas; increasing energy availability to the rural and urban poor while reducing soil and environmental degradation; and improving the delivery and effectiveness of health and family planning services to the rural poor. AID/B will undertake a two-pronged approach in implementing its health strategy. To focus the Ministry of Health's planning for provision of universal primary health care, an operational research program to demonstrate "community medicine" will be jointly undertaken by the University of Burundi's Faculty of Medicine/Department of Community Medicine and Columbia University's Faculty of Medicine/Center for Population and Health. Integrated maternal and child health/family planning services will be provided by a "community health worker," and included in his/her training will be environmental sanitation and health education. This research program will, in turn, reinforce the activities which will be initiated under AID/B's proposed Family Health Initiatives project. The focus of this project will be the delivery of integrated family health services to the rural

poor. The concept of family health counselling includes sanitation and health education. AID/B is confident, therefore, that a more structured, institutionalized approach to strengthen sanitation/health education through the Ministry of Public Health will be more effective and efficient than a small-scale effort linked specifically to the GRB's spring-capping program. The WASH consultant's report includes specific recommendations on incorporating sanitation and health education concerns into the two AID/B health projects. The report is attached as Annex E.

### B. Project Objectives

The program goal, or broader objective to which this project will contribute, is to improve the basic living conditions and health of Burundi's rural population. The project purpose, which in concert with AID/B's other projects in the health sector will impact on the program goal, is to improve the quality of water and its sanitary use by assisting the GRB in implementing its spring-capping program. According to public health experts, the provision of safe water is of prime importance to public health. WHO, in particular, considers that provision of a safe and convenient water supply is the single most important activity that can be undertaken to improve the health of people living in rural areas (Village Water Supply, a World Bank Paper, March 1976).

UNICEF has been the lead donor in assisting the GRB in establishing its spring-capping program, and the results over the past four years have been impressive. Ninety-three fontainiers are now working in most of Burundi's 114 communes. By the end of 1983, it is realistically estimated that this cadre, increased by twenty, ~~will~~ be able to cap ~~at least~~ 1,000 springs a year. The primary constraint in maintaining this capacity will be the phase-out of UNICEF project funds for the purchase of construction materials and related equipment to support the work of the fontainiers. To continue program momentum, AID project funds will be phased in, as indicated in the following table:

GRB Spring-Capping Program: Annual Targets

|                   | 1979 | 1980 | 1981 | 1982 | 1983  | 1984 | 1985  | Total |
|-------------------|------|------|------|------|-------|------|-------|-------|
| With UNICEF funds | 50   | 480  | 590  | 660  | 1,000 | 750  | -     | 3,530 |
| With AID funds    |      |      |      |      | -     | 250  | 1,000 | 1,250 |

In addition to providing project funds to cap approximately 1,250 springs, additional project outputs include (a) the in-service training of an estimated 120 communal administrators in sanitation and hygiene related to the use of safe water and (b) reinforcement of fontainier training in the construction and maintenance of capped springs by the production, publication and distribution of a spring-capping manual. Both of these secondary outputs will further strengthen the effectiveness of this successful GRB program.

By the end of the project, which will be implemented over three years, it is estimated that the AID funds will specifically result in at least 125,000 additional Burundi (approximately 25,000 rural families) having access to safe water from capped springs. This same beneficiary group will also be exposed to improved sanitation and hygiene practices related to the use of safe water. This will be accomplished only indirectly, however, by anticipating that communal administrators can play an increasingly important role in extending the sanitation/health education "message" in the communes. With a greater understanding of sanitation and hygiene concepts, the communal administrator will be able to reinforce more effectively the extension work currently performed by the health and social workers in the rural areas.

### C. Project Elements - Inputs

#### 1. AID Contribution (\$330,000)

As previously discussed, one of the most attractive features of the GRB's spring-capping program is its management at the communal level. The communal administrator coordinates this management process and can also play an important role, assisted by communal-level Party officials, in integrating the benefits of safe water from capped springs with the delivery of sanitation education. Not all communal administrators, however, are able to function with the same degree of effectiveness. Much depends on the personal dynamism and interest of the administrator as well as his understanding, in this case, of the uses of safe water for household sanitation and personal hygiene. In-service, refresher training for communal administrators will therefore be offered. ~~by UNICEF.~~ AID funds will cover per diem for up to 120 administrators, plus the costs of transportation between hostel accommodations and the conference site. Three-day seminars for four to six groups of 20-30 administrators will be held at the Centre de Perfectionnement et de Formation in Bujumbura. Operated by the Ministry of Public Administration, the center

UNICEF will provide the technical resource personnel for the seminars,

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currently provides pre- and in-service training to communal administrators. The seminars on sanitation and hygiene will be scheduled in conjunction with the on-going training programs, thereby minimizing operating costs. ~~The seminars will be directed by the UNICEF National Officer~~ with staff assistance from the Ministry of Rural Development, the Ministry of Public Health and the Ministry of Social Affairs.

Funds will also be provided for an observation tour to Malawi to study the GOM's very successful rural piped water program. The visit will be useful for program personnel from a technical point of view but, more importantly, as an opportunity to study an approach for mobilizing community participation and integrating sanitation and health education with water supply. Costs will include two round-trip airfares from Bujumbura to Lilongwe and per diem for a two-week visit.

About 65 percent of total project funds (\$212,500) will be used to procure construction materials and related equipment to cap approximately 1,250 springs. Construction materials include polyvinyl chloride (PVC) pipe, galvanized steel pipe, plastic sheeting and cement. A set of the necessary tools and equipment to install the spring cap are issued every three years to the fontainier and include a trowel, spade, level, pick, hoe, hammer, crow bar, rubber boots, hacksaw, folding rule and machete. A tool kit (new or replacement) for each fontainier will be procured. The source of procurement will be Code 941 Countries. Procurement procedures for these commodities are discussed in Section IV., D., Procurement Plan. A procurement list, including current prices, is included in the Technical Analysis, Annex F.

To increase the fontainier's mobility and coverage within the commune, and also to reward sustained good performance, about 25 bicycles will be purchased. ~~The most practical bicycle, manufactured in Japan, is sold in Bujumbura. With wide wheels, a strong frame and bar brakes, this bicycle is sturdy enough to manoeuvre the rough, steep roads and trails in the communes. Spare parts are also readily available in local markets.~~ *a bicycle is received*

As a training aid and handy reference, a spring-capping manual will be produced and published with project funds. Although the fontainiers will use the manual on a day-to-day basis, a sufficient supply will be published for distribution also to the communal administrators and Ministry of Public Health personnel, especially the sanitarians. The UNICEF project staff will prepare the content and lay-out for the

manual. Project funds would finance the services of an artist/designer and the printing costs.

Lastly, AID will share the costs of operating the UNICEF vehicle fleet, which includes two seven-ton trucks, three pick-ups, one Landrover and one Volkswagen Combi. The operating costs, prorated for the delivery of construction materials and equipment for 1,250 spring caps from Bujumbura to the communes, include POL, insurance, spare parts, depreciation and drivers' salaries.

## 2. UNICEF Contribution (\$1,291,300)

The UNICEF project to assist the GRB's spring-capping program will continue through CY 1985. Inputs, which have largely been provided throughout the implementation period, since mid-1978, include:

-- the services of the UNICEF Project Manager (a geologist/engineer) and the UNICEF National Officer (a Marundi water engineer);

-- the continuation of pre- and in-service training for fontainiers. Within the three-year period, UNICEF will train about 30 new recruits, bringing the total number of fontainiers working in Burundi's 114 communes to about 120 by the phase-out of assistance. In UNICEF's judgement, this number is adequate and realistically reflects the recurrent cost burden, represented by the fontainier's salary and allowances, which can be borne by a commune. In addition, UNICEF will provide in-service, refresher training for all fontainiers to sharpen their technical skills and ability to mobilize community participation. In addition to reviewing the technology of capping new springs, fontainiers will learn to repair old spring caps (primarily those installed about 20 years ago) and to construct washing slabs next to spring caps;

-- construction materials to cap 1,750 springs;

-- water-testing supplies and equipment (primarily millipor kits) for periodic monitoring of capped-spring water quality and for evaluation;

-- 25 bicycles for fontainiers (sharing the cost with AID of providing a total requirement of 50 bicycles);

-- payment of fontainier salaries and allowances (family, social security) for the initial year of employment.

As discussed above, employment of the fontainier is assumed by the commune beginning with his second year of work. Of the 93 fontainiers now working, UNICEF will pay the salaries of 36 in 1983 and 36 in 1984;

-- vehicle operating costs prorated for the delivery of construction materials and equipment for 1,750 spring caps from Bujumbura to the communes; and

-- administrative overhead, including administrative staff (two animatrices, accountants, secretary, mechanics), office supplies and equipment, freight charges for commodity purchases and miscellaneous operating expenses.

### 3. GRB Contribution (equivalent of \$688,000)

The GRB's contribution to the spring-capping program is both cash and in-kind:

-- paid from the commune's operating budget, the fontainier's salary and allowances beginning with his second year of work. Communes will assume the employment costs of 79 fontainiers in 1983, 93 in 1984 and 120 (the total requirement) in 1985;

-- in-kind communal self-help labor. Included in this input is the value attached to labor (a) to collect and carry local construction materials (gravel, sand, etc.) from the quarry to the spring site and (b) to assist the fontainier in constructing the spring cap. Tasks include digging the pipe and drainage trenches and the circumferential protective gutter; clearing bush; mixing cement; and carrying the construction materials from the communal administrative post to the spring site. The value attached to labor is the minimum daily wage of FBu 90. Calculations are also based on the level of effort to cap 3,000 springs, i.e., the 1,250 to be financed with AID funds and the 1,750 to be financed with UNICEF funds within three years; and

-- administrative overhead, including rent and utilities for the program headquarters (offices and adjoining warehouse) in Bujumbura, salaries of non-professional staff (guards, messengers, etc.) and purchase of miscellaneous local materials (wood for scaffolding as required, etc.).

### III. COST ESTIMATES AND FINANCIAL PLAN

#### A. Summary Cost Estimate

Total project costs are estimated at \$2,309,300. The following table indicates cost estimates for the AID, UNICEF and GRB contributions to the project.

The AID contribution represents 14 percent of the total cost of the project. AID expenditures will be approximately 74 percent in foreign exchange and 26 percent in local currency. The equivalent value of the GRB contribution which is attributable to the AID-financed costs of capping 1,250 springs is estimated at 46%.

#### SUMMARY COST ESTIMATE

|        | <u>Foreign Exchange</u> | <u>Local Currency</u> | <u>Total</u>       | <u>Percentage</u> |
|--------|-------------------------|-----------------------|--------------------|-------------------|
| AID    | 245,400                 | 84,600                | 330,000            | 14                |
| UNICEF | 722,400                 | 568,900               | 1,291,300          | 56                |
| GRB    | -                       | 688,000               | 688,000            | 30                |
|        | <u>\$967,800</u>        | <u>\$1,341,500</u>    | <u>\$2,309,300</u> | <u>100</u>        |

#### B. The Source and Use of Funds

The source and use of funds are indicated in the following table. Budgetary details and unit cost estimates are attached as Annex H.

It should be noted that the budgetary figures for the UNICEF contribution to the spring-capping program include an allocation of funds from the U.N. Capital Development Fund (UNCDF). UNCDF funds have been provided since 1982 for the purchase of construction materials and miscellaneous operating expenses. Because the funds are allocated to, and managed by, UNICEF, it is appropriate to attribute them to the UNICEF contribution to the program.

GRB SPRING-CAPPING PROGRAM, 1983-1985/6: FINANCIAL PLAN  
(\$000)

| INPUT  | AID   |      | UNICEF |        | GRB |         | TOTAL |         |
|--|-------|------|--------|--------|-----|---------|-------|---------|
|  | FX*   | LC*  | FX     | LC     | FX  | LC      | FX    | LC      |
| <u>TECHNICAL SERVICES</u>  |       |      |        |        |     |         |       |         |
| UNICEF Project Manager   | -     | -    | 320    | -      | -   | -       | 320   | -       |
| UNICEF National Officer  | -     | -    | -      | 100    | -   | -       | -     | 100     |
| <u>PARTICIPANT TRAINING</u>  |       |      |        |        |     |         |       |         |
| For fontainers   | -     | -    | -      | 39     | -   | -       | -     | 39      |
| -- initial   |       |      |        | (21)   |     |         |       |         |
| -- refresher   |       |      |        | (18)   |     |         |       |         |
| For communal administrators  | -     | 5    | -      | -      | -   | -       | -     | 5       |
| Observation tours for program personnel  | 4.5   | -    | -      | -      | -   | -       | 4.5   | -       |
| <u>COMMODITIES</u>   |       |      |        |        |     |         |       |         |
| Imported construction materials for 3,000 capped springs (AID-1,250; UNICEF-1,750) | 212.5 | -    | 297.5  | -      | -   | -       | 510   | -       |
| Fontainer tool kits (120)  | 8.4   | -    | -      | -      | -   | -       | 8.4   | -       |
| Water-testing equipment  | -     | -    | 4.2    | -      | -   | -       | 4.2   | -       |
| Bicycles   | -     | 7    | -      | 7      | -   | -       | -     | 14      |
| <u>OTHER COSTS</u>   |       |      |        |        |     |         |       |         |
| Production/publication of spring-capping manual                                    | -     | 5    | -      | -      | -   | -       | -     | 5       |
| In-kind communal self-help labor   | -     | -    | -      | -      | -   | 256.3   | -     | 256.3   |
| Fontainer salaries   | -     | -    | -      | 57.9   | -   | 234.8   | -     | 292.7-- |
| -- initial year  |       |      |        | (57.9) |     | (-)     |       |         |
| -- subsequent years  |       |      |        | (-)    |     | (234.8) |       |         |
| Vehicle operating costs  | -     | 45   | -      | 64     | -   | -       | -     | 109     |
| Administrative overhead  | -     | -    | 50     | 203    | -   | 107.2   | 50    | 310.2   |
| Sub-Total  | 225.4 | 62   | 671.7  | 470.9  | -   | 598.3   | 897.1 | 1,131.2 |
| Inflation/Contingency  | 20    | 22.6 | 50.7   | 98     | -   | 89.7    | 70.7  | 210.3   |
| GRAND TOTAL  | 245.4 | 84.6 | 722.4  | 568.9  | -   | 688.0   | 967.8 | 1,341.5 |

\* Foreign Exchange  
\*\* Local Currency

#### IV. IMPLEMENTATION PLAN

##### A. AID Responsibilities

AID project management will be the responsibility of the Office of the AID Representative in Bujumbura, with periodic monitoring assistance from REDSO/ESA (Nairobi). A REDSO/ESA engineer will liaise with the GRB Ministry of Rural Development and UNICEF to assure that the technical criteria and standards for spring-capping are maintained. The Regional Finance and Management Center (RFMC) (Nairobi) will provide assistance and guidance in the use and management of various AID financing mechanisms to procure commodities and equipment (see Procurement Plan below) and to finance local currency costs. Locally available technical services for the production and publication of the spring-capping manual will be procured through a host country contract with an individual or a firm. REDSO/ESA's Supply Management Officer and Regional Contract Officer will assure that the procurement of goods and services is consistent with AID's competitive procedures and that host country contracting procedures meet AID standards. Legal services will be provided by the Regional Legal Advisor and will include preparation of the Project Authorization and Grant Agreement as well as review and approval of GRB documents which satisfy Conditions Precedent and AID/B-issued Project Implementation Letters.

##### B. GRB Responsibilities

The Department of Rural Hydrology and Electrification of the Ministry of Rural Development (MORD) will be the implementing agency for the project. As discussed in the Administrative Analysis (Section VI., E., below), UNICEF has established a quasi-independent relationship with the MORD for implementation of the GRB's spring-capping program. The AID contribution to the program, channelled through this project, will rely on the present effectiveness and efficiency of this relationship. A GRB policy decision concerning the permanent institutionalization of the spring-capping program, either within the Department of Rural Hydrology and Electrification or through the establishment of a new department, will probably be made within the three-year timeframe of this project. Either option, however, will not disrupt the program which is most strongly dependent on communal administration.

The Department of Rural Hydrology and Electrification will, however, be jointly responsible with UNICEF for disbursements from a project local currency account which will be established

to finance the local currency costs of vehicle operation and the seminars for communal administrators. Using double signatures, the GRB and UNICEF will draw funds from this local currency account for AID's prorated share of the vehicle operating costs and other local expenses (See also Section V., Monitoring Plan). The Department will likewise enter into any contracting arrangement for the production and publication of the spring-capping manual.

### C. UNICEF Responsibilities

The GRB's spring-capping program is most directly implemented under the supervision of the UNICEF Project Manager and his National Officer. UNICEF will continue this function during the life of this project. UNICEF's operational responsibilities include training and retraining fontainiers, payment of fontainier salaries during the first year of employment and assignment to the communes, procurement and delivery to the communes of the construction materials and supplies for the spring-capping program, periodic technical supervision and program monitoring by site visits, chemical testing of water samples from capped springs and contact with the communal administrators. UNICEF/Burundi is also responsible for programming the UNICEF (and UNCDF) contribution to their project and assuring the GRB contribution to the spring-capping program. The UNICEF East Africa Regional Office (Nairobi) is responsible for general project administration and procurement. UNICEF's Regional Advisor on Water and Sanitation is responsible for technical supervision of the Project Manager.

Coordination between UNICEF and AID will be assured by periodic meetings, both between AID/B and UNICEF/Burundi and between REDSO/ESA and UNICEF/Nairobi. Both UNICEF offices have been involved in the design of this project.

### D. Procurement Plan

Procurement actions will follow the procedures outlined below.

(1) twenty-five bicycles: will be purchased, <sup>either</sup> ~~by~~ <sup>by</sup> AID/B ~~in~~ <sup>in</sup> ~~September-October 1983~~ <sup>by</sup> AID/B under the shelf-item rule. ~~or by REDSO/ESA in Nairobi.~~

(2) fontainier tool kits: AID/B will issue a PIO/C in September-October 1983 for the necessary numbers and types of tools in each kit. The purchase of 120 tool kits has been budgeted. The PIO/C will name REDSO/ESA as the authorized agent. REDSO/ESA will then procure the tools from Code 941 sources.

(3) spring-capping construction materials: AID/B will issue a PIO/C for all materials, naming REDSO/ESA as the authorized agent. The PIO/C will call for a staggered delivery schedule for cement purchases which will be shipped to Bujumbura in increments of 60 tons. REDSO/ESA will procure the materials from Code 941 sources for arrival in Bujumbura no later than June-December 1984.

A REDSO/ESA Supply Management Officer will discuss the details of these procedures with AID/B and UNICEF during one of his periodic visits to Burundi. AID/B will finalize the specifications for all equipment and materials in consultation with UNICEF.

#### V. MONITORING PLAN

An implementation schedule is presented below. From the technical side, there are no issues. As previously discussed, however, it should be noted that REDSO/ESA engineers routinely visit Burundi on at least a quarterly basis to back-stop the AID/B program portfolio and, when required, will perform "touch-base" monitoring functions for this project. Program management by the Ministry of Rural Development will be reinforced by regularly scheduled meetings with MORD, UNICEF and AID/B personnel.

Progress reports will be required from the MORD's Department of Rural Hydrology and Electrification three times a year, in January, May and September. A Project Implementation Letter will be issued detailing the format and content of a progress report, including actual and proposed quantifiable targets for training and spring-capping. The format and content will be harmonized with the existing reporting requirements and procedures followed under UNICEF's monitoring system. The reports will also describe:

- (a) problems encountered and/or foreseen;
- (b) planned solutions to implementation problems; and
- (c) specific identification of AID, UNICEF or GRB actions or assistance which are required to resolve these problems.

The MORD will be advised to notify the AID Representative whenever any major implementation problem is identified or anticipated. The MORD will also be requested to share with AID any monitoring reports from UNICEF.

Progress financial implementation reports will also be required from the MORD Department of Rural Hydrology and Electrification. The Department will account on a cumulative basis for disbursements from a separate project local currency account. Estimated local currency requirements for the next sixty days will be included in the report. On the basis of this report, AID/B will arrange for periodic cash advances for deposit in the account.

A Project Implementation Letter will discuss all reporting requirements.

IMPLEMENTATION SCHEDULE

| <u>CY</u>   | <u>MONTH</u> | <u>ACTION</u>   | <u>RESPONSIBILITY</u> |
|-------------|--------------|---|-----------------------|
| <u>1983</u> | March        | Procurement of water-testing equipment  | UNICEF                |
|             | April        | Training session for 20 new <u>fontainiers</u>  | GRB, UNICEF           |
|             | May          | Local purchase of 25 bicycles   | UNICEF, GRB           |
|             | Jun-Jul      | Training session for 20 new <u>fontainiers</u>  | UNICEF, GRB           |
|             | July         | Project Paper approved by AID/B with REDSO/ESA concurrence (and UNICEF clearance)   | AID/B, REDSO          |
|             | August       | Project Agreement signed  | AID/B, GRB, UNICEF    |
|             | August       | Project Implementation Letter No. 1 issued with instructions on satisfying Conditions Precedent and on reporting requirements | AID/B, REDSO, GRB     |
|             | September    | Local purchase of 25 bicycles   | AID/B, GRB            |

|                          |  |                           |
|--------------------------|--|---------------------------|
| Sep-Oct                  | Placement of procurement order for 120 <u>fontainier</u> tool kits   | AID/B, UNICEF             |
| November                 | First training session for 30 communal administrators  | GRB, UNICEF, AID/B        |
| Con-<br>tinuous          | Payment of salaries for 36 <u>fontainiers</u> (for one year only)  | UNICEF                    |
| Con-<br>tinuous          | Payment of salaries for 79 <u>fontainiers</u> , plus gradual assumption for payment of salaries for 36 <u>fontainiers</u> after completion of first year of employment | GRB/communes              |
| Multiple                 | Procurement orders for spring-capping construction materials (a total of 540 tons of cement will be ordered in increments of 60 tons)                                  | AID/B, UNICEF, GRB, REDSO |
| late 1983-<br>early 1984 | Observation tour to Malawi for program personnel (10 days)   | AID/B, UNICEF, GRB        |
| <u>1984</u><br>Jan-Feb   | GRB contract let for technical services to design/produce the spring-capping manual  | AID/B, GRB, UNICEF        |
| Feb-Mar                  | Design/production of spring-capping manual   | GRB, UNICEF               |
| February                 | Second training session for 30 communal administrators   | GRB, UNICEF, AID/B        |

|                 |   |  |                    |
|-----------------|---|--|--------------------|
| April           | Third training session for 30 communal administrators               | GRB, UNICEF, AID/B                                 |                    |
| June            | Fourth training session for 30 communal administrators              | GRB, UNICEF, AID/B                                 |                    |
| Jun-Jul         | Publication of spring-capping manual                                | GRB, AID/B, UNICEF                                 |                    |
| Con-<br>tinuous | Capping of 250 springs (with AID project funds)                     | UNICEF, GRB  |                    |
| Con-<br>tinuous | Capping of 750 springs (with UNICEF project funds)                  | UNICEF, GRB  |                    |
| Con-<br>tinuous | Payment of salaries for 115-120 <u>fontainiers</u>                  | GRB/Communes                                       |                    |
| after September | Four refresher training sessions for <u>fontainiers</u> (1984-1985) | UNICEF, GRB  |                    |
| <u>1985</u>     | Con-<br>tinuous   | Capping of 1,000 springs (with AID project funds)  | UNICEF, GRB        |
|                 | Con-<br>tinuous   | Payment of salaries for 115-120 <u>fontainiers</u> | GRB/communes       |
|                 | December  | Completion of UNICEF project                       | UNICEF, GRB        |
| <u>1986</u>     | January   | AID project evaluation                             | GRB, AID/B, UNICEF |
|                 | June  | Completion of AID project                          | AID/B, GRB         |

## VI. SUMMARY OF ANALYSES

Detailed technical and social analyses have been undertaken in the design of the project. They are summarized below and annexed. The financial, economic, administrative and environmental analyses are presented in full in the following sections.

### A. Summary Technical Analysis

The least complicated and most practical design variables for improving springs - intended benefits and uses, lifting and distribution requirements, size and variability of discharge, flow control, construction and maintenance requirements and water quality - have been chosen for the GRB's spring-capping program so that the consumers may more easily participate. A free, improved source of water with non-moving, durable components and the lowest possible maintenance requirements is offered in exchange for volunteer labor and provision of locally available materials. By capitalizing on popular participation through communal organization, this model is particularly suitable for conditions among Burundi's rural poor.

The technology of capping a spring is within the capability of a trained fontainier. Before capping a spring, however, the fontainier assures that the following social and technical criteria are met:

- (1) the local population must use the spring for collecting water and must have requested the capping;
- (2) the spring is located near a center of social activity;
- (3) the measured minimum flow is 0.05 liters per second and is adequate for the water requirements of the population using the spring;
- (4) the spring flows continuously through the dry season; and
- (5) the capping is technically feasible.

Once capped, the spring is periodically monitored by the fontainier for construction faults. A well-constructed spring cap, however, should not deteriorate and should last without major repair for more than 20 years.

Although spring-capping does not shorten the distance required to collect water for daily household requirements, it does provide access to protected, safe water with an adequate, reliable flow. The visible improvement in water quality (especially clarity) and cleaner conditions at the collection point have set new standards for water use and acceptability

among the local population. Laboratory analyses of water samples collected both before and after spring-capping have demonstrated significant decreases in bacteriological counts.

Requirements for imported construction materials are minimal: polyvinyl chloride (PVC) pipe, galvanized steel pipe, plastic sheeting and cement. Based on current prices, the cost of construction materials for a spring cap is approximately \$170.00. Other components used to estimate the cost of installing a spring cap include: the fontainier's salary (\$80.40), the fontainier's tool kit (\$2.33), overhead (GRB and UNICEF administrative costs, \$260.00), the local contribution of self-help labor (\$85.42), transportation (\$36.30) and the fontainier's bicycle (\$9.33). The total unit cost is \$643.78, or \$6.44 per capita for 100 consumers and \$8.05 per capita for 80 consumers.

A detailed discussion of the spring-capping program is included in the WASH Field Report No. 24, "Community Water Supply and Sanitation in Burundi, Report of an Evaluation Team" (October 1981). This evaluation report provides valuable background information and several recommendations which have been incorporated in the design of this project. The report is available in AID/Burundi and REDSO/ESA-Nairobi.

The GRB's spring-capping program is effective and well-organized. Introducing no new technology, this project will rather support a proven technological package which combines appropriate materials and sound, basic engineering concepts with effective organization and community involvement. The program is achieving its goal of providing safe water to the rural poor on a countrywide basis. The spring-cap design and specifications have been reviewed, and completed spring caps have been inspected by the REDSO/ESA engineer and other members of the PP design team. No technical issues have been raised. Although technical problems may occur, spring-capping must be evaluated as an improvement over former water sources in terms of water quality and reliability. The GRB's implementation target to cap 1,000 springs per year (1,250 with AID project funds) is realistic within the existing organizational structure.

## B. Financial Analysis

As indicated in the Financial Plan, the GRB contribution is most importantly comprised of the salaries of the fontainier, budgeted and paid by the communes, plus the value of communal self-help labor. Based on experience, the MORD and UNICEF have estimated that this contribution can be up to 30 percent of the total cost of installing a spring cap.

At the present time, recurrent expenditures are a particular burden for the GRB. The operating budgets for all ministries have been reduced from prior year levels. In UNICEF's Action Plan for its "Water Supply Program in Burundi, 1983-1985" (September 1982), the GRB's contribution was negotiated at \$121,200 in 1983, \$127,800 in 1984 and \$135,600 in 1985. Components of this contribution included personnel salaries, purchase of local materials and supplies, rental of office and warehouse buildings and port charges. The GRB's 1983 contribution, however, has been drastically decreased to \$35,750, or about 30 percent of the planned allocation. The Ministry of Rural Development is now in the process of laying-off unessential staff, including eight nonprofessional employees assigned to the spring-capping program. It is therefore especially appropriate that the UNICEF model for the spring-capping program relies on its primary institutionalization on the commune level. Recurrent costs for headquarters staff salaries can remain minimal without jeopardizing implementation of the program in the rural areas. It is also a measure of the effectiveness of the program that communes, in all cases, have requested, and willingly budgeted the costs of supporting, the assignment of fontainiers.

The approach for reinforcing sanitation and hygiene education - through seminars for communal administrators - will impose no financial or recurrent cost burden on either the Ministry of Rural Development or the Ministry of Public Health. During the life of the project, the MORD will have an opportunity to decide whether or not to continue offering sanitation/health education in the on-going inservice training program for communal administrators. Basic requirements would be instructors and lodging costs. As an alternative, if the project were introducing a new cadre of sanitation/health education worker to be eventually taken onto either the MORD or MOH payroll, the budgetary implications would be substantial. The approach suggests that the constraints within the current sanitation and hygiene education program are not technical but rather organizational and financial. According to the MORD, the MOH and the Ministry of Social Affairs, the technical knowledge is in the field but some stimulation is needed on the process by which that knowledge reaches and benefits the rural population.

### C. Economic Analysis

The project does not lend itself to a cost/benefit analysis which can be quantified in terms of an internal rate of return. The difficulty, obviously, rests in attempting to

place monetary values on the various benefits (social, health and economic) of providing safe water to rural areas. It can be shown, however, that the technology used in the project requires the least amount of initial capital costs compared to alternative water systems and, further, the least amount of recurrent expenditure to maintain in satisfactory operating condition.

Throughout Burundi various types of water supply systems are used, including springs, cisterns and wells in the plains and drier areas. UNICEF's assistance to the GRB's rural water supply program has focused on spring-capping, spring-fed gravity distribution systems for dispensaries and schools and rain-catchment cisterns. The spring-capping program utilizes by far the fewest resources per capita served, as indicated in the table below. Spring-capping also requires the shortest time period for completion (4-6 weeks), only basic technical skills, minimal maintenance and maximum user participation.

Costs of Alternative Water Systems in Burundi  
(U.S. Dollars)

| <u>System</u>                | <u>Unit Cost</u> | <u>\$/Capita</u>                                     |
|------------------------------|------------------|--|
| Spring-capping               | 200-400          | 2-10   |
| Gravity distribution         | 35,000           | 50-100 (extremely variable depending on km distance) |
| Cisterns/roof catchment*     |                  |  |
| (a) roof improvements        | 13,000           | 50-350   |
| (b) gutters and cistern only | 314              | 3  |
| Wells                        | 11,000           | 50-100   |

\*Implies using roofs of several buildings in a social complex.  
Source: "Community Water Supply and Sanitation in Burundi," WASH Field Report No. 24, October 1981.

To date, the GRB has not instituted user charges for water supplied to rural areas. Instead, the spring-capping model requires in-kind payment, with potential users supplying and transporting locally available materials and providing all unskilled labor. This is setting a valuable precedent for communal self-help resources development.

Maintenance of the standard capped spring is also least-cost, requiring no more than the periodic removal of vegetation and sediment from the area and resloping of the adjacent hillside to prevent seepage, erosion, clogging and

standing water. The first task is performed by one or more of the users, designated by the fontainier, and the second by the fontainier himself as part of his job.

Social, health and economic benefits cannot be quantified. Social benefits are limited to a reduction in the incidence of certain water-related diseases, more reliable forest/watershed protection (e.g., communal awareness of the importance of protecting the catchment area directly above the spring) and communal satisfaction that self-help efforts can bring about tangible results. Health benefits are also qualitative: again, a reduction in the incidence of diseases (a) carried by insects breeding in or near water, (b) transmitted by direct contact with water, (c) transmitted by consumption of contaminated water and (d) transmitted by inadequate use of water. Economic benefits from the use of safe water include potentially fewer days lost from labor or school because of an improved level of health, less disposable income spent on health care and possibly greater agricultural production. It should be noted that there is no direct benefit in terms of time and energy saved in using a capped spring since the source and quantity of water is the same.

#### D. Summary Social Soundness Analysis

The project will meet an expressed need of Burundi's rural population. The progress to date indicates that the spring-capping program has strong local support. Areas around capped springs are well-maintained, and residents report women walking several kilometers from other communities to obtain safe water from capped springs. Furthermore, around capped springs it has been observed that users have been taught to clean containers and hands before drawing water.

The spring-capping program has been designed so that requisite skills and materials for constructing a spring cap are accessible to the communities. Also, a capped spring can be easily maintained and requires little or no periodic repair. The number of hours of self-help labor required to construct a capped spring is not onerous. The relatively high population density facilitates popular participation on such a communal activity.

To ensure that health education is directly targeted to the communities which receive improved water supplies, the fontainiers and communal administrators will be trained to communicate key messages. It is more feasible to focus on verbal transmission of information than on dissemination of

written materials. Because of the low level of literacy in the rural areas, posters and written messages are not very appropriate means of communication. The communal administrators are influential persons who oversee a number of activities and development programs. They supervise subordinate staff from several ministries. Any problems which might arise, such as enforcement of protection of a spring source, is within their jurisdiction. Through these administrators, the chefs de zone, who are in weekly contact with communities, can be instructed to transmit essential health education messages. It is both feasible and desirable to involve the local administration in sanitation and hygiene extension since it has the most direct contact with the beneficiary communities drawing safe water from capped springs.

The extent to which good hygiene practices are followed in the household is not known. In general, women cover storage jars. They also are aware of the importance of washing hands before eating. AID/Burundi's other projects in the health sector will investigate these and other practices which require improvement and/or further reinforcement. The types of messages which will be relayed through the communal administrator include the importance of (1) protecting the water source; (2) washing hands and container before drawing water from a spring; (3) not covering the water container with a contaminated item when carrying it away from the spring; (4) safe water storage and (5) preventing animals from approaching or grazing near a spring.

This project should have an impact on communities and other types of communal activities because of its simple design and labor requirements. Capped springs serve as a source of pride in communities since they reflect an accomplishment and material gain achieved through popular participation with minimal external assistance. Additive technical skills, in the person of the fontainier, have also been brought to the commune.

#### E. Administrative Analysis

Although directed by the Ministry of Rural Development's Department of Rural Hydrology and Electrification, the GRB's spring-capping program is implemented quasi-independently by UNICEF and in collaboration with the Ministries of Interior, Public Health and Social Affairs. Primary contact with these ministries is at the commune level, and its coordination with the other ministries' programs is the responsibility of the communal administrator, an appointee of the Ministry of Interior. The operational

responsibilities of the communal administrator include selection of springs to be capped, day-to-day supervision of the fontainier(s), warehousing the construction materials and certification of completion of a spring cap. This organization is an effective approach for working within a basically weak and heavily bureaucratic government system on the national/central level. The spring-capping program has, in effect, institutionalized itself at the communal level by providing fontainiers for about 90 communal administrations. A major feature is that the program has been able to install a fontainier within an existing supervisory framework without requiring additional middle-management personnel on the national level. Because this level of personnel is largely lacking within the Ministry of Rural Development, the implementation decision to work through the communal administrators appears to be particularly appropriate and sound.

The communal administrator's most important and difficult task in implementing a spring-capping program in his commune is to mobilize effectively the population to be served by an improved source of safe water. He is assisted in assuring community mobilization by the UPRONA Party structure, which has a profound influence on both political and social life in Burundi. Any effort at population mobilization must depend on Party initiative and support, which has been effectively demonstrated at every level from the President of UPRONA (also the President of Burundi) to the First Secretary on the sous-collines.

The management relationships on the commune level are simply illustrated:

Communal  
Administrator

Party  
Structure

Administrative  
Structure

Self-Help Mobilization/Participation

Fontainiers

An outstanding issue is institutionalization of the spring-capping program on a permanent basis within the Ministry of Rural Development. There is speculation that, upon completion of the UNICEF project, the continued implementation

of the spring-capping program will be transferred from the Department of Rural Hydrology and Electrification to a new department. This decision is both bureaucratic and political and should be made by the GRB during the life of this project. It should, however, have no detrimental effect on the spring-capping program which, as discussed above, is most importantly institutionalized on the commune level. As long as the Ministry of Rural Development will include a budgetary allocation for the purchase of required imported construction materials, the program will continue. Given (a) a core trained staff (including the Marundi National Officer for the UNICEF project) already in place, (b) the marginal cost of construction materials per spring (\$170.00) compared to costs for other water supply systems and (c) the success of the program to date with its allied political mileage, one can be relatively optimistic of its institutionalization on the national level.

#### F. Environmental Analysis

An Initial Environmental Examination, attached to the PID, analyzed potentially adverse effects of spring-capping on agricultural lands, surface water quantity and surface water quality. Effects on the biological and social environments are also analyzed. The summary conclusion stated "no significant adverse environmental effects are expected as a result of the project and therefore a negative determination is recommended." This recommendation was approved concurrent with approval of the PID.

#### VII. CONDITIONS AND COVENANTS

Other than the standard Conditions Precedent and standard covenant regarding evaluation, there will be no special conditions and covenants provided for in the Project Grant Agreement.

#### VIII. EVALUATION ARRANGEMENTS

Given the three-year timeframe for implementation of the project, only a final, summative evaluation has been scheduled. It is recommended that it be undertaken about six months prior to the end of the project, or about January 1986. One component will be an analysis of the extent to which the project outputs have been achieved leading to conditions to indicate accomplishment of the project purpose. The other component will be analysis and evaluation of the institutionalization of the GRB's spring-capping program on

both the commune and national levels. Based on a judgment of the evaluation team, a recommendation can then be made on the desirability of an extension of the project over a longer timeframe. The evaluation will take approximately 2-3 weeks, including discussions with the Ministry of Rural Development, other ministries, site visits and preparation of the evaluation report. It is anticipated that an engineer, a social scientist and either an evaluation officer or project officer provided by REDSO/ESA and/or AID/Washington will constitute the evaluation team.

Within the context of project monitoring, it is also recommended that the feasibility of more specifically integrating sanitation and hygiene education in the GRB's spring-capping program be reexamined. If an activity, or activities, in sanitation/health education specifically linked to the use of safe water is judged promising and could benefit from supplemental financial support, AID/B could consider requesting an increase in project funding. This "reconnaissance study" should be undertaken about mid-term in project implementation by a REDSO/ESA project officer and social scientist and a consultant in environmental sanitation and health education.

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D TAGS:

O SUBJECT: EURUNDI COMMUNITY WATER AND SANITATION (695-2149)

R  
1. THE PROJECT WAS REVIEWED AND APPROVED BY AN HCP2 FIELD ON JANUARY 11.

2. HEALTH FUNDS ARE AVAILABLE FOR THE PROJECT. AFR/CA AND AFR/EP WILL REQUEST FUNDS FROM PPC.

3. THE ICIR CONCURS IN THE RECOMMENDATION THAT YOU ATTEMPT TO INSTITUTIONALIZE THE HEALTH EDUCATION EFFORTS THROUGH MASS MEDIA AND/OR PARTICIPATION BY PRIMARY SCHOOLS.

4. THE PROJECT DESIGN SHOULD CONSIDER THE POTENTIAL FOR PRIVATE SECTOR PARTICIPATION IN THE MAINTENANCE AND REPAIR OF CAPPED SPRINGS, THE PROVISION OF PARTS AND EQUIPMENT, AND THE DEVELOPMENT AND PROVISION OF EDUCATIONAL MATERIALS.

5. THE PP MUST PROVE THE AVAILABILITY OF POST PROJECT FUNDING FOR MAINTENANCE AND TRAINING.

6. BOTH FOREIGN EXCHANGE AND LOCAL CURRENCY COSTS MUST BE REFLECTED IN THE PP.

7. A CONGRESSIONAL NOTIFICATION IS REQUIRED PRIOR TO OBLIGATION OF FUNDS. SHULTZ

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PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

(INSTRUCTION: THIS IS AN OPTIONAL FORM WHICH CAN BE USED AS AN AID TO ORGANIZING DATA FOR THE PAR REPORT. IT NEED NOT BE RETAINED OR SUBMITTED.)

Life of Project: \_\_\_\_\_  
From FY \_\_\_\_\_ to FY \_\_\_\_\_  
Total U.S. Funding: \_\_\_\_\_  
Date Prepared: \_\_\_\_\_

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Project Title & Number: BURUNDI COMMUNITY WATER AND SANITATION

PAGE 1

| NARRATIVE SUMMARY  | OBJECTIVELY VERIFIABLE INDICATORS   | MEANS OF VERIFICATION   | IMPORTANT ASSUMPTIONS   |
|--|---|---|---|
| <p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>To improve the basic living conditions and health of Burundi's rural population/poor.</p> | <p>Measures of Goal Achievement:</p> <p>Reduction of water-related diseases among the rural population as indicated by (a) a decrease in infant and child mortality and morbidity rates and (b) increased growth rates in the 0-3 year age group.</p> | <p>National health statistics and health surveys, e.g., well-baby clinic records, cholera and dysentery, etc.</p> | <p>Assumptions for achieving goal targets:</p> <ol style="list-style-type: none"> <li>1. A positive correlation between improved Burundi's and the availability of safe water combined with exposure, and knowledge of, improved health/sanitation practices</li> <li>2. The GRB is committed to the goal of the International Drinking Water Supply and Sanitation Decade (1981-1990)</li> </ol> |

20

Title & Number: \_\_\_\_\_

| NARRATIVE SUMMARY   | OBJECTIVELY VERIFIABLE INDICATORS  | MEANS OF VERIFICATION  | IMPORTANT ASSUMPTIONS  |
|---|--|--|--|
| <p>Purpose:<br/>improve the quality of water and its sanitary use assisting the GRB in implementing its spring-capping program.</p> | <p>Conditions that will indicate purpose has been achieved: End of project status.</p> <ol style="list-style-type: none"> <li>At least 125,000 additional Burundi (approximately 25,000 rural families) will have access to safe water sources from capped springs (with AID funding only).</li> <li>At least 125,000 additional Burundi will be exposed to improved sanitation and hygiene practices related to the use of safe water.</li> </ol> | <ol style="list-style-type: none"> <li>Inspection reports and site visits.</li> <li>Periodic inspection of completed, capped springs.</li> <li>AID evaluation.</li> <li>GRB-UNICEF records and reports.</li> </ol> | <p>Assumptions for achieving purpose:</p> <ol style="list-style-type: none"> <li>UNICEF continues its support to the GRB's spring-capping program.</li> <li>Communal administrators are effective agents in reinforcing the communication of sanitation and hygiene concepts to the target group.</li> </ol> |

Project Title & Number: BURUNDI COMMUNITY WATER AND SANITATION

| DESCRIPTIVE SUMMARY   | OBJECTIVELY VERIFIABLE INDICATORS  | MEANS OF VERIFICATION   | IMPORTANT ASSUMPTIONS  |
|---|--|---|--|
| <p><u>Outputs:</u></p> <p>Rural spring sources capped.</p> <p>Communal administrators trained in sanitation and hygiene related to the use of safe water.</p> <p><u>Fontainier</u> training in the construction and maintenance of capped springs reinforced.</p> | <p><u>Magnitude of Outputs:</u></p> <p>1. An estimated 3,000 springs capped, of which 1,250 with AID project funds.</p> <p>2. An estimated 120 communal administrators trained.</p> <p>3. Production, publication and distribution to <u>fontainiers</u> of a spring-capping manual.</p> | <p>1. GRB-UNICEF records and AID evaluation.</p> <p>2. AID project monitoring including site visits and interviews.</p> | <p><u>Assumptions for achieving outputs:</u></p> <p>UNICEF continues its implementation support to the GRB's spring-capping program.</p> |

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Line of credit  
From FY \_\_\_\_\_ to FY \_\_\_\_\_  
Total U.S. Funding \_\_\_\_\_  
Date Prepared: \_\_\_\_\_

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Project Title & Number: BURUNDI COMMUNITY WATER AND SANITATION

Page

| NARRATIVE SUMMARY   | OBJECTIVELY VERIFIABLE INDICATORS         | MEANS OF VERIFICATION | IMPORTANT ASSUMPTIONS             |
|---|---|-----------------------|-----------------------------------|
| Inputs:   | Implementation Target (Type and Quantity) |                       | Assumptions for providing inputs: |
| 1. <u>AID Component</u>                                     | (1983-1985)                               |                       |                                   |
| In-service training for communal administrators             | \$ 5,000                                  |                       |                                   |
| Observation tours for program personnel                     | \$ 4,500                                  |                       |                                   |
| Construction materials & tool kits for 1,250 capped springs | \$220,900                                 |                       |                                   |
| Production and publication of a spring-capping manual       | \$ 5,000                                  |                       |                                   |
| <u>Bicycles for fontainiers</u>                             | \$ 7,000                                  |                       |                                   |
| Vehicle Operating Costs                                     | \$ 45,000                                 |                       |                                   |
| Sub-Total   | <u>\$287,400</u>                          |                       |                                   |
| Inflation/Congingency                                       | <u>\$ 42,600</u>                          |                       |                                   |
| Total   | <u>\$330,000</u>                          |                       |                                   |
| 2. <u>UNICEF Component</u>                                  |   |                       |                                   |
| Supervisory technical services                              | \$420,000                                 |                       |                                   |
| <u>Fontainier pre- and in-service training</u>              | \$ 39,000                                 |                       |                                   |
| Construction materials for 1,750 capped springs             | \$297,500                                 |                       |                                   |
| Water-testing equipment for research and evaluation         | \$ 4,200                                  |                       |                                   |
| <u>Bicycles for fontainiers</u>                             | \$ 7,000                                  |                       |                                   |
| <u>Fontainier salaries for initial year of employment</u>   | \$ 57,900                                 |                       |                                   |
| Vehicle operating Costs                                     | \$ 64,000                                 |                       |                                   |
| Administrative overhead                                     | <u>\$253,000</u>                          |                       |                                   |
| Sub-Total   | <u>\$1,142,600</u>                        |                       |                                   |
| Inflation/Contingency                                       | <u>\$148,700</u>                          |                       |                                   |
| Total   | <u>\$1,291,300</u>                        |                       |                                   |

Project Title & Number: \_\_\_\_\_

| NARRATIVE SUMMARY   | OBJECTIVELY VERIFIABLE INDICATORS         | MEANS OF VERIFICATION | IMPORTANT ASSUMPTIONS             |
|---|---|-----------------------|-----------------------------------|
| Inputs:   | Implementation Target (Type and Quantity) |                       | Assumptions for providing inputs: |
| <u>GRB Component</u>  |   |                       |                                   |
| <u>Fontainier</u> salaries after initial year of employment | \$234,800                                 |                       |                                   |
| In-kind communal self-help labor                            | \$256,300                                 |                       |                                   |
| Administrative overhead                                     | \$107,200                                 |                       |                                   |
| Sub-Total   | \$598,300                                 |                       |                                   |
| Inflation/Contingency                                       | \$ 89,700                                 |                       |                                   |
| Total   | \$688,000                                 |                       |                                   |

## 5C(2) PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A. includes criteria applicable to all projects. Part B. applies to projects funded from specific sources only:

- B.1. applies to all projects funded with Development Assistance Funds,
- B.2. applies to projects funded with Development Assistance loans, and
- B.3. applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY  
CHECKLIST UP  
TO DATE? HAS  
STANDARD ITEM  
CHECKLIST BEEN  
REVIEWED FOR  
THIS PROJECT?

A. GENERAL CRITERIA FOR PROJECT

1. FY 1982 Appropriation Act  
Sec. 523; FAA Sec. 634A;  
Sec. 653(b); Second CR FY 83,  
Sec. 101(b)(1).

- (a) Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project;
- (b) Is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that amount)?
- (c) If the proposed assistance is a new country program or will exceed or cause the total assistance level for the country to exceed assistance amounts provided to such country in FY 82, has a notification been provided to Congress?

- (a) A Congressional Notification will be sent to the Congress prior to the obligation of funds.
- (b) Yes.
- (c) Not applicable.
- (d) Not applicable.

(d) If the proposed assistance is from the \$85 million in ESF funds transferred to AID under the Second CR for FY 83 for "economic development assistance projects", has the notification required by Sec. 101(b)(1) of the Second CR for FY 83 been made?

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be  
(a) engineering, financial or other plans necessary to carry out the assistance and  
(b) a reasonably firm estimate of the cost to the U.S. of the assistance?

(a) Yes.  
(b) Yes.

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?

No GRB legislative actions will be required.

4. FAA Sec. 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973?

To the extent applicable, the intent of Sec. 611(b) has been met. See the economic (Section VI.C.), social (Section VI.D.) and environmental (Section VI.F.) analyses in the Project Paper.

5. FAA Sec. 611(c). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's

Not applicable.

capability effectively to maintain and utilize the project?

6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.

The project may be considered multilateral because the funds will be supplemental to UNICEF project funds for the GRB's spring-capping program.
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

One of the most attractive features of the GRB's spring-capping program is its reliance on volunteer community participation for implementation. Private initiation is thereby fostered. The program does not lend itself to implementation through private enterprise.
8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

The project is not expected to significantly affect U.S. private trade, although U.S. suppliers will be considered for procurement of technical services and equipment. The quantities involved, however, are marginal.
9. FAA Sec. 612(b), 636(h); FY 1982 Appropriation Act Sec. 507. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services,

The GRB will contribute approximately 30% of the total cost of the project, or the equivalent of \$688,000 in local currency.

and foreign currencies owned by the U.S. are utilized in lieu of dollars.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? No.
11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? Yes.
12. FY 1982 Appropriation Act Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? No commodities will be produced for export through this project.
13. FAA 118(c) and (d). Does the project comply with the environmental procedures set forth in AID Regulation 16? Does the project or program take into consideration the problem of the destruction of tropical forests? An Initial Environmental Examination (PID, Annex C.) concluded that "no significant adverse environmental effects are expected as a result of the project." Tropical forests will not be affected in this project.

14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)?

Not applicable.

15. FAA Sec. 128; Second CR FY 83, Sec. 101(b)(2). Has an attempt been made to finance productive facilities, goods, and services which will expeditiously and directly benefit those living in absolute poverty under the standards adopted by the World Bank?

Yes.

FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(b), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation

(a) The project will support the self-help efforts of the rural poor to gain access to safe water through the application of an appropriate technology. The poor will be the beneficiaries of the capped springs on a sustained basis.

of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103A, 104, 105, 106. Does the project fit the criteria for the type of funds (functional account) being used?

c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?

(b) and (c) This project is based on the support of rural self-help efforts channelled through the communal administrations.

(d) Not applicable, although women may be considered to be the primary participants and beneficiaries of capped springs.

(e) Not applicable.

b.  
This project will be funded from Sec. 104(c), Health and Disease Prevention, funds and fully meets the requirements of that section. Its purpose is to improve the quality of water and its sanitary use. The program goal, on which this project may impact, is to improve the basic living conditions and health of Burundi's rural population/poor.

c. Yes. Spring-capping in Burundi is the least-cost and most technically appropriate means to provide safe water.

d. Yes.

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

e. Not applicable.

f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

f. One of the benefits of the use of safe water is a reduction in the incidence of water-related diseases which, in turn, will lead to an increase of productive capacities.

g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in government processes essential to self-government.

g. The project will fully support self-help efforts to meet the need for safe water.

2. Development Assistance Project Criteria (Loans only)

Not applicable.

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

c. ISDCA of 1981, Sec. 724 (c) and (d). If for Nicaragua, does the loan agreement require that the funds be used to the maximum extent possible for the private sector? Does the project provide for monitoring under FAA Sec. 624(g)?

d. Second CR FY 83, Sec. 134. If the recipient country has an annual per capita gross national product greater than \$795 but less than \$1,285, will the loan be repayable within 25 years following the date on which funds are initially made available? If it has an annual per capita GNP greater than or equal to \$1,285, within 20 years?

3. Economic Support Fund  
Project Criteria

Not applicable.

a. FAA Sec. 531(a). Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

- b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities?
- c. FAA Sec. 534. Will ESF funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such use of funds is indispensable to non-proliferation objectives?
- d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?
- e. Second CR FY 83, Sec. 101(b)(1). If ESF funds to be utilized are part of the \$85 million transferred to AID under the Second CR for FY 83 for "economic development assistance projects", will such funds be used for such projects and not for non-development activities including balance of payments support, commodity imports, sector loans, and program loans?

5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable generally to FAA funds, and criteria applicable to individual fund sources: Development Assistance and Economic Support Fund.

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 481; Second CR FY 83 Sec. 133. Has it been determined that the government of the recipient country has failed to take adequate steps to prevent narcotic drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully? No
  
2. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) the debt is not denied or contested by such government? No

3. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? No
4. FAA Sec. 532(c), 620(a), 620(f), 620D; FY 1982 Appropriation Act Secs. 512 and 513. Is recipient country a Communist country? Will assistance be provided to Angola, Columbia, Cuba, Laos, Vietnam, Syria, Libya, Iraq, or South Yemen? Will assistance be provided to Afghanistan or Mozambique without a waiver? No
5. ISDCA of 1981 Secs. 724, 727, 728 and 730. For specific restrictions on assistance to Nicaragua, see Sec. 724 of the ISDCA of 1981. For specific restrictions on assistance to El Salvador, see Secs. 727, 728 and 730 of the ISDCA of 1981. N.A.
6. FAA Sec. (20(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property? No

7. FAA Sec. 620(1). Has the country failed to enter into an agreement with OPIC? No
- (b) If so, has any deduction required by the Fishermen's Protective Act been made.
8. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, Sec. 5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters? No
- (b) If so, has any deduction required by the fishermen's Protective Act been made?
9. FAA Sec. 620(q); FY 1982 Appropriation Act Sec. 517. No
- (a) Has the government of the recipient country been in default for more than six months on interest or principal of any AID loan to the country? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the appropriation bill appropriates funds?
10. FAA Sec. 620(s). If N.A.
- contemplated assistance is developed loan or

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from Economic Support Fund, has the Administrator taken into account the amount of foreign exchange or other resources which the country has spent on military equipment? Reference may be made to the annual "Taking into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB". This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

11. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? No
12. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? Paid up
13. FAA Sec. 620A; FY 1982 Appropriation Act Sec. 520. Has the country aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed an act of international terrorism? No

Has the country aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed a war crime?

14. FAA Sec 666. Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA? No
15. FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device, after August 3, 1977? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan). No
16. ISDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Session of the General Assembly of the U.N. of Sept. 25 and 28, 1981, and failed to disassociate itself from the communique issued? If so, has the President taken it into account? Yes  
Yes

17. ISDCA of 1981 Sec. 721. N.A.  
See special requirements for  
assistance to Haiti.

B. FUNDING SOURCE CRITERIA FOR  
COUNTRY ELIGIBILITY

1. Development Assistance  
Country Criteria

- a. FAA Sec. 116. Has the No  
Department of State  
determined that this  
government has engaged in  
a consistent pattern of  
gross violations of  
internationally recognized human  
rights? If so, can it be  
demonstrated that contemplated  
assistance will directly  
benefit the needy?

2. Economic Support Fund  
Country Criteria

- a. FAA Sec. 502B. Has it N.A.  
been determined that the  
country has engaged in a  
consistent pattern of  
gross violations of  
internationally recognized  
human rights? If so, has  
the country made such  
significant improvements  
in its human rights record  
that furnishing such  
assistance is in the  
national interest?

- b. ISDCA of 1981, Sec. 725(b). N.A.  
If ESF is to be furnished to  
Argentina, has the President  
certified that (1) the Govt. of  
Argentina has made significant  
progress in human rights; and  
(2) the provision of such  
assistance is in the national  
interests of the U.S.?

c. ISDCA of 1981, Sec. 726(b).  
If ESF assistance is to be  
furnished to Chile, has the  
President certified that (1)  
the Govt. of Chile has made  
significant progress in human rights;  
(2) it is in the national interest of  
the U.S.; and (3) the Govt. of  
Chile is not aiding international  
terrorism and has taken steps to  
bring to justice those indicted in  
connection with the murder of  
Orlando Letelier?

N.A.

TECHNICAL ANALYSISA. Spring-Capping: Plan of Operation

The GRB's approach to spring-capping, based on the UNICEF model which has been implemented in other developing countries, follows a set of simple procedures. A request for a capped spring is prepared by the potential users and submitted to the communal administrator. The administrator then discusses the request, or multiple requests, with Party officials and his administrative staff at weekly and trimesterly meetings. Upon his approval of the request, the administrator then monthly forwards a tabular listing of all pending spring-capping requests and commodity requirements to the Ministry of Rural Development. The administrator directs the communal fontainier to visit the spring site and determine whether or not the spring meets the necessary social and technical criteria for capping (see Section B. below). If so, the fontainier, with the support of the communal administrator and Party officials, organizes and mobilizes a local volunteer work force to provide labor and the local materials. The fontainier surveys the site, lays out the excavation above and below the spring and determines the quantity of stone, gravel, clay and sand required to complete the initial construction. These materials are then located, dug and carried in loads to the spring site by the local labor. Concurrently local labor also carries to the site the donor-financed, imported material - piping, cement and plastic sheeting. Stored at the communal headquarters, these materials are delivered periodically from the GRB-UNICEF warehouse in Bujumbura.

Fontainiers are primarily supervised by the communal administrator and secondarily by the UNICEF Project Manager and National Officer on regular field visits. His performance is also checked on the basis of the communal administrator's monthly report on the number of springs which have been capped in the commune, registers of commodities which have been received and requests for replenishment of materials and equipment. It is estimated that a fontainier can complete a spring-capping in 4-6 weeks and averages about 10 spring caps per year.

Construction tasks for community labor include digging the trench and circumferential protective gutter above the spring, clearing brush from the area surrounding the spring and mixing the cement.

Motivation for popular participation in spring-capping is the felt need of most population groups for fresh, accessible water. Although convenience is the most frequently expressed criterion for using a particular spring, there are instances in which a contaminated or dirty spring, or one whose flow diminishes markedly during the dry season, is not used in preference for a less convenient but fresher and more reliable spring source. Aspirations for a clean, reliable, accessible source of water have been further stimulated by on-going health education efforts in schools, social centers, dispensaries, clinics and on the national radio. Statistics also indicate that requests for spring-capping multiply following the assignment of a fontainier to a commune.

Springs are used for all purposes although not as the exclusive source of water. For convenience and/or privacy, bathing is often done in unprotected surface waters when returning home from the fields or at the rugo after chorès are completed.

A more detailed discussion of the spring-capping plan of operation is included in the WASH Field Report No. 24, "Community Water Supply and Sanitation in Burundi, Report of an Evaluation Team" (October 1981). This evaluation report provides valuable background information and several recommendations which have been incorporated in the design of this project. The report is available in the Office of the AID representative in Bujumbura and in REDSO/ESA in Nairobi. Much of the information in this Technical Analysis has been drawn from the WASH report.

#### B. Spring Cap Design

In general, several designs are used to improve springs for potable water supplies. Variations in design depend on the following factors:

- intended benefits and uses
- lifting and distribution requirements
- size and variability of discharge
- flow control
- excavation, source protection, durability and maintenance requirements
- water quality (potability, corrosivity, sediment loads)

The least complicated and most practical of these variables have been chosen for the GRB's spring-capping program so that

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the consumers may more easily participate. A free, improved source of water with non-moving, durable components and the lowest possible maintenance requirements is offered in exchange for volunteer labor and provision of locally available materials. By capitalizing on popular participation through communal organization, this model is particularly suitable for conditions among Burundi's rural poor.

The technology of capping a spring is within the capability of the trained fontainier. Before capping a spring, however, the fontainier checks to assure that the following social and technical criteria are met:

- (1) the local population must use the spring for collecting water and must have requested the capping;
- (2) the spring is located near a center of social activity;
- (3) the measured minimum flow is at least 0.05 liters per second and is adequate for the water requirements of the population using the spring;
- (4) the spring flows continuously through the dry season; and
- (5) the capping is technically feasible.

Once capped, the spring is periodically monitored by the fontainier for shearing, slippage of the surface soil layer or protective plastic sheeting and undermining of the impermeable clay layer. A well-constructed spring cap, however, should not deteriorate and should last without major repair for more than 20 years.

Although spring-capping does not shorten the distance required to collect water for daily household requirements, it does provide access to protected, safe water with an adequate, reliable flow. The visible improvement in water quality (especially clarity) and cleaner conditions at the collection point have set new standards for water use and acceptability among the local population. Laboratory analyses of water samples collected both before and after spring-capping have demonstrated significant decreases in bacteriological counts.

Routine maintenance tasks, performed by either the fontainier or a consumer designated by the fontainier, include resloping and clearing vegetation from the spring drainage and watershed diversion trenches. These measures prevent root and

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sediment clogging of the spring flow, surface seepage, erosion and standing water.

### C. Technical Training of Fontainiers

Implementation of the spring-capping program is based on the performance of the fontainier (communal). UNICEF has also trained chefs de chantier, moniteurs (foremen and supervisors) and animatrices (social work aides) to train the fontainiers and to work on the UNICEF-financed gravity-fed water distribution schemes. The animatrices instruct the fontainiers in techniques of mobilizing the local population to provide labor and local construction materials.

Fontainiers are nominated by the communal administrators and then trained in groups of up to 20 in four-week seminars. The training includes one week of theory and three weeks of practical work in which laying the pipe, making maximum use of the slope, doing the masonry work and capping the spring are first demonstrated to and then undertaken by the fontainier in the field situation. As mentioned above, the animatrices provide training in communications skills and group dynamics.

Most of the trainees are men who speak only Kirundi. Some have worked in the past with the Fonds du Bien-Etre Indigene (FBI) or with its successor engineering organization, the International Agency for Rural Development (AIDR). Qualifications include the fontainier's perceived competence and his respect among the local population.

According to the WASH evaluation report, "the training seems to be the most appropriate type, minimizing the theoretical and emphasizing hands-on, job-specific skills." The publication and distribution of a spring-capping manual will reinforce the effectiveness of this training.

Upon completion of his training, the fontainier is assigned back to his commune to implement the spring-capping program. For his initial year of employment, the fontainier's salary is paid with UNICEF project funds; after the first year, the commune assumes this cost. The average salary for a fontainier is FBu 6,000 (\$67.00) per month:

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|  |           |
|--|-----------|
| Base salary  | FBu 4,500 |
| Lodging allowance  | 1,125     |
| Family allowance (FBu 300 for wife and FBu 150 for each child) | 750       |
| Employer's social security contribution                        | 253       |
| <hr/>  |           |
| Gross monthly salary   | 6,628     |
| Tax  | -249      |
| Employee's social security contribution                        | -169      |
| <hr/>  |           |
| Net monthly salary   | FBU 6,210 |

D. Spring-Capping Construction Materials

Requirements for imported construction materials are minimal: polyvinyl chloride (PVC) pipe, galvanized steel pipe, plastic sheeting and cement. These materials can be procured in Kenya or in other Code 941 countries. The fontainier's tool kit includes a trowel, level, folding rule, backsaw and blades (10), shovel, pick, hoe, hammer, string, machete, wedge, crowbar, 6 concrete bars and a pair of rubber boots. If not manufactured in Burundi, these supplies can also be procured in Kenya or in other Code 941 countries. The fontainier is issued a replacement tool kit every three years. Sturdy, wide-tired bicycles with bar brakes, made in Japan, can be procured off-the-shelf in Burundi.

The specifications and estimated cost of construction materials for 1,000 spring caps follows:

| <u>Item</u>                                | <u>Unit</u>  | <u>Quantity</u> | <u>Unit Price Kenya (US\$)</u> | <u>Total Cost (US\$)</u> |
|--|--------------|-----------------|--------------------------------|--------------------------|
| PVC PN 6 or PN 10 Pipe                     |              |                 |                                |                          |
| Ø 1-1/4" or 40 mm.                         | 6 m.         | 450             | 7.30                           | 3,285                    |
| Ø 1-1/2" or 50 mm.                         | 6 m.         | 750             | 9.25                           | 6,937                    |
| Ø 2" or 63 mm.                             | 6 m.         | 300             | 15.00                          | 4,500                    |
| Galvanized pipe<br>(0.5 m. per spring cap) | 6 m.         | 85              | 57.00                          | 4,845                    |
| Cement<br>(7 sacks/cap+5% loss)            | 50 kg. sacks | 7,350           | 135.00                         | 99,225                   |

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|  |             |       |       |                  |
|--|-------------|-------|-------|------------------|
| For washing block<br>(60 kg/cap+5% loss)   | sacks       | 1,260 | 13.50 | 17,010           |
| Plastic Sheeting, 0.2 mm.<br>thickness, in 6x2 m.<br>sheets<br>(12 m <sup>2</sup> x 2.1 kg./cap) | kg.         | 2,100 | 2.55  | 5,355            |
|  | Sub Total   |       |       | <u>\$141,157</u> |
| Inflation - 15%  |             |       |       | <u>21,173</u>    |
|  | GRAND TOTAL |       |       | \$162,330        |
|  | Rounded to  |       |       | \$170,000        |

Cost of construction materials for one spring cap: \$170.00

E. Unit Cost of Capping a Spring

The following calculation is based on the detailed cost estimates for the project (Annex II.) and UNICEF project budget figures.

| <u>Cost Component</u>         | <u>Cost</u>     |
|-------------------------------|-----------------|
| Fontainier's salary           | \$80.40         |
| \$804 per year                |                 |
| 10 spring caps per year       |                 |
| Construction materials:       | 170.00          |
| Fontainier's tool kit         | 2.33            |
| \$70 per kit                  |                 |
| 30 (10 caps/yearx3-year life) |                 |
| Overhead                      | 260.00          |
| Local Contribution (Labor)    | 85.42           |
| Transportation                | 36.30           |
| Fontainier's bicycle          | 9.33            |
| \$280                         |                 |
| 30 (10 caps/yearx3-year life) |                 |
| Total                         | <u>\$643.78</u> |

Cost for 100 consumers: \$6.44

Cost for 80 consumers: \$8.05

F. Conclusion

The GRB's spring-capping program is effective and well-organized. Introducing no new technology, this project will rather support a proven technological package which

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combines appropriate materials and sound, basic engineering concepts with effective organization and community involvement. The program is achieving its goal of providing safe water to the rural poor on a countrywide basis. The spring-cap design and specifications have been reviewed, and completed spring caps have been inspected by the REDSO/ESA engineer and other members of the PP design team. No technical issues have been raised. Although technical problems related to drainage and infiltration of flood flows may occur, spring-capping must be evaluated as an improvement over former water sources in terms of water quality and reliability. The GRB's implementation target to cap 1,000 springs per year (1,250 with AID project funds) is realistic with the existing organizational structure.

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## SOCIAL SOUNDNESS ANALYSIS

A. Socio-Cultural Context

Ninety percent of the population lives in rural areas. The highest population densities are found in the north and central regions of the country and in the Bujumbura area. While the latter group is located on an alluvial plain and adjacent highlands, the others are in the well-watered highlands. The lowest population densities are found along the east and southeast side of the country. The regions of low population densities correspond to those where there are few natural springs. Whereas the average density is 154 persons per square kilometer, there are extremes from 3 to over 350 per km<sup>2</sup> in the rural areas.

Although rural homesteads are scattered rather than grouped into villages, in the areas with relatively high population densities the homesteads are very close together. The average distance between homesteads is 235m, and there is an average of 24 homesteads per square kilometer. Homesteads are usually located on the hillsides or hilltops, and valley bottoms are used for cultivation and grazing livestock.

The relatively low level of rural infrastructure and the small number of development personnel in rural areas, combined with the hilly nature of most of the country, results in homesteads being more isolated than the rural population density figures would suggest. There is one health facility per estimated 20,000 rural people, and on average it is 12 km. from a homestead. The educational structure is highly skewed, with less than 10 percent of school students receiving more than a primary education. Many primary schools do not offer upper-grade classes. Less than 25 percent of the primary school age children attend school.

A study conducted in three areas - Minago, Murago and Burambi - provides information on household income and expenditures. Both Burambi and Murago are coffee-producing areas, whereas palm oil is the main cash crop in Minago. Food crops represented some 33 percent of the average cash income of FBu 34,635 (\$386.77). At the same time, 22 percent of the expenditures were for food. An average of FBu 733 (\$8.18) was spent for medical care and FBu 1,610 (\$17.97) for personal care/hygiene.

With regard to health-related standards, malaria and bilharzia are common, but in specific regions. The first outbreak

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of cholera was reported in 1978 in the Lake Tanganyika area. During the outbreak, 8,297 were officially reported as ill and 248 were reported as having died. Another outbreak occurred in 1980. In late 1982 and early 1983 there was a severe outbreak of bacillary dysentery. Local administrators have been instrumental in spreading messages about good health and hygiene practices and encouraging the building of latrines.

Although most Burundi still believe in traditional medicines, this belief is combined with belief in the efficacy of modern medicines. In fact, Western medicine is often seen as a preventor or detainer of magical powers which cause illnesses.

### B. Beneficiaries

Approximately 125,000 Burundi will directly benefit through the provision of safe water. Also, they will have the opportunity to improve their knowledge about good health and sanitation practices. These people will be in communities throughout Burundi. The health and sanitation messages will be transmitted through communal administrators and fontainiers. Some 120 communal administrators will participate in project-financed seminars. These seminars will focus on enhancing the knowledge base of the communal administrators so they can more effectively supervise fontainiers and, through lower-level administrators, inform the rural population of the importance and uses of safe water. Also they will learn more about protection of water sources.

Some 120 fontainiers will directly benefit through training and access to manuals which will assist them in better performing their work. Also bicycles will be provided. The training will increase the skill level, and hence marketability, of the fontainiers.

### C. Participation

The spring-capping program is based on the participation of local people and involvement of local administrators and Party leaders. The progress to date in the program testifies to the strong local support. People within the local communities participate by assisting in the selection of the springs to be capped. Moreover, they provide labor for clearing the area around the springs; finding and carrying local materials - sand, clay, gravel and stones - to the site; digging the trenches; and constructing the masonry base. The total number of hours required depends to some extent on distance to the local materials which have to be transported (on head) to the site. In general, a group of 10 people working full-time could complete the job in one week.

However, the workload is normally spread over a one-month period so that it does not conflict with other labor demands, especially on homesteads. After the spring is capped, usually the local chef de colline or fontainier appoints at least one person to be responsible for cleaning the area around the spring. Often this is a person unable to participate fully in the Saturday communal work-day. The plan of operation, from all observations and reports, works well.

Further, local support is exemplified in those communes which are paying the salaries of the fontainiers after the first year. The communal income for the salaries is derived from local market taxes.

In addition to the participation of communities, the program is based on active involvement of communal administrators and, under him, the chefs de zone and chefs de colline. Also Party leaders are involved. This group provides a supervisory structure for the fontainiers. Moreover, in the course of their periodic meetings with the local communities, they stress the need for capped springs and maintenance of those completed, as well as deliver health education messages.

#### D. Socio-Cultural Feasibility

The project will meet an expressed need of Burundi's rural population. The progress to date indicates that the spring-capping program has strong local support. Areas around capped springs are well-maintained, and residents report women walking several kilometers from other communities to obtain safe water from capped springs. Furthermore, around capped springs it has been observed that users have been taught to clean containers and hands before drawing water.

The spring-capping program has been designed so that requisite skills and materials for constructing a spring cap are accessible to the communities. Also, a capped spring can be easily maintained and requires little or no periodic repair. The number of hours of self-help labor required to construct a capped spring is not onerous. The relatively high population density facilitates popular participation on such a communal activity.

To ensure that health education is directly targeted to the communities which receive improved water supplies, the fontainiers and communal administrators will be trained to communicate key messages. It is more feasible to focus on verbal transmission of information than on dissemination of written materials. Because of the low level of literacy in the rural

areas, posters and written messages are not very appropriate means of communication. The communal administrators are influential persons who oversee a number of activities and development programs. They supervise subordinate staff from several ministries. Any problems which might arise, such as enforcement of protection of a water source, is within their jurisdiction. Through these administrators, the chefs de zone, who are in weekly contact with communities, can be instructed to transmit essential health education messages. It is both feasible and desirable to involve the local administration in sanitation and hygiene extension since it has the most direct contact with the beneficiary communities drawing safe water from capped springs.

The extent to which good hygiene practices are followed in the household is not known. In general, women cover storage jars. They also are aware of the importance of washing hands before eating. AID/Burundi's other projects in the health sector will investigate these and other practices which require improvement and/or further reinforcement. The types of messages which will be relayed through the communal administrator include the importance of (1) protecting the water source; (2) washing hands and container before drawing water from a spring; (3) not covering the water container with a contaminated item when carrying it away from the spring; (4) safe water storage and (5) preventing animals from approaching or grazing near a spring.

#### E. Impact

This project should have an impact on communities and other types of communal activities because of its simple design and labor requirements. Capped springs serve as a source of pride in communities since they reflect an accomplishment and material gain achieved through popular participation with minimal external assistance. Additive technical skills, in the person of the fontainier, have also been brought to the commune.

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ANNEX H

DETAILED COST ESTIMATES

The following calculations have been used as the basis for the project budget:

A. Fontainier Salaries

Detailed salary components are included in the Technical Analysis, Annex F.

FBU 6,000 per month  
x 12 months  
FBU 72,000 per year = \$804.00

UNICEF will pay:  
36 fontainiers in 1983  
36 " in 1984  
72 total

\$804.00 x 72 = \$57,888 = \$57,900

GRE will pay:  
79 in 1983  
93 in 1984  
120 in 1985  
292 total

\$804.00 x 292 = \$234,768 = \$234,800

B. Fontainier tool kits

One complete set of tools (itemized in Technical Analysis, Annex F.) costs \$70.00

C. Fontainier bicycles

Off-the-shelf procurement in Bujumbura, <sup>by NAWCA</sup> Japanese manufacture.

Cost: \$210.00  
+ 70.00 for spare parts  
\$280.00 (UNICEF estimate)

\$280.00 x 25 bicycles = \$7,000, budgeted for both AID and UNICEF.

D. Construction materials

\$170.00 per spring cap. See Technical Analysis, Annex II.

E. Transportation

Project budget: \$45,000 - AID  
43,000 - UNICEF  
21,000 - UNICEF/UNCDF  
\$109,000 - total

\$109,000  
3,000 spring caps = \$36.30 per spring cap

1,250 spring caps x \$36.30 = \$45,375

F. Administrative overhead

UNICEF Project Manager and National Officer: \$420,000  
UNICEF administration: 253,000  
GRB administration: 107,200  
\$780,200

3,000 spring caps = \$260.00 per spring cap

GRB administration: FBu 3.2 million/year x 3 years = FBu 9.6 million  
FBu 9.6 million = \$107,200

G. Local Contribution

To collect and carry: \$35.17 per spring (FBu 3,150)  
Construction labor: 50.25 per spring (FBu 4,500)  
\$85.42

\$85.42 x 3,000 springs = \$256,260

Cost of labor: minimum daily wage of FBu 90.

Requirements:

(a) to collect and carry - 35 man-days x FBu 90 = FBu 3,150  
(b) Construction - 50 man-days x FBu 90 = FBu 4,500  
FBu 7,650

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