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9/90 - 8/94

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PLAN/BANAMBA CHILD SURVIVAL PROJECT

SEPTEMBER 1, 1990 - AUGUST 31, 1993

BANAMBA, REPUBLIQUE DU MALI

#OTR-0500-A-00-0110-00  
9/1/90 - 8/31/94

FINAL EVALUATION

JUNE 1994

Harry Godfrey

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## I. EXECUTIVE SUMMARY

The final evaluation of PLAN/Mali's Child Survival Project in the Cercle (District) of Banamba, Mali was conducted May 16 through June 8, 1994. The non-participatory\* evaluation was carried out by six surveyors, three supervisors, two secretaries, one logistics person, four drivers - all contracted by PLAN/Banamba with a local Malian private firm called Kûnafoni - and an expatriate public health consultant.

The evaluation team conducted two 30-cluster vaccination coverage surveys to compare coverage between the entire district (pop 120,000) and Plan's 63 pilot villages (special attention villages) with a total population of 30,000. Please note, though, that all vaccination activities in the district are supported by PLAN (fuel, vehicles, per diem, vaccine conservation [cold-chain] support) and carried out by the Ministry of Health. (see table 1)

The team also surveyed five of ten test-villages where the names, vaccination and nutritional status of children are maintained in registers and home visits by VHW or member of VHC are made if child is delinquent for care.

Vaccination coverage in the District of Banamba is very good. The Project surpassed most of its vaccination objectives as revised in the mid-term evaluation. The percentage of children 12 to 23 months old having a BCG vaccination scar was 84% as opposed to the objective of 94%; but DPT/polio-3 was over 55% as opposed to the objective of 45%. Preliminary data indicate measles objective of 50% was surpassed by more than 5%. Only 58% of women of child-bearing-age (15 - 44 years old) received two anti-tetanus vaccinations according to their vaccination card, but 75% received two vaccinations if history of vaccination is taken into consideration. The objective was 80%.

The team also prepared questionnaires to evaluate the knowledge, attitude and practices of village health committees, volunteers and mothers regarding vaccinations, nutrition, malaria, diarrhea disease control and child spacing. It was encouraging to learn that over 60% of the mothers knew that vaccinations were to prevent rather than to treat diseases; that over 70% of mothers with children between 12 and 24 months of age were still breast feeding; and that 70% of mothers would seek help if their child were dehydrated or had fever or malaria. (see table 4)

On the other hand it was disappointing to find that only 39% of mothers began breastfeeding their newborn immediately; that nearly half of the target children had diarrhea within the past 15 days; and that over 75% of the mothers didn't know what caused malaria. (

Child survival activities have continued since the end of the Project and will probably continue into the foreseeable future with PLAN funds. Though vaccination services cannot be sustained without external assistance, PLAN's IEC interventions are activities that communities can sustain.

*\*Limited participation of persons involved in execution of Project activities*

## II. SOMMAIRE

L'évaluation finale du Projet Suivie de l'Enfant/Mali dans le cercle (District) de Banamba, Mali, a été faite du 16 mai au 8 juin, 1994. L'évaluation de la non-participation\* a été effectuée par une équipe de 6 surveillants, 3 superviseurs, 2 secrétaires, 1 personne chargée de la logistique, 4 chauffeurs - tous contractés à travers un GIE local privé au Mali appelé KUNAFONI - et un consultant expatrié en Santé publique.

L'équipe d'évaluation a fait deux enquêtes de 30 grappes chacune sur la couverture vaccinale afin de faire une comparaison entre la couverture vaccinale dans le district entier (pop. 120 000) et les 63 villages pilotes (villages prioritaires) avec une population totale de 30 000. Notez bien que toutes les activités de vaccination dans le cercle sont supportées par le PLAN (carburant, véhicules, perdiem, support de conservation du vaccin) et sont effectuées par le Ministère de la Santé.

L'équipe a aussi recensé cinq des dix villages-tests où les noms, le statut de vaccination et de nutrition des enfants sont notés dans les registres et visités à la maison si c'est nécessaire.

La couverture vaccinale dans le district de Banamba est très bien. Le projet a dépassé la plupart de ses objectifs de vaccination comme révisé par l'évaluation à moyen-terme. Les enfants âgés entre 12 et 23 mois portant les cicatrices de la vaccination du BCG était de 84% ainsi opposé à l'objectif de 94%. , mais le DTCoq/polio3 était plus de 55% ainsi opposé à l'objectif de 45%. L'objectif de la rougeole de 50% a été dépassé de plus de 5%, mais peu diminuerait avec l'analyse du programme COSAS à l'ordinateur. Seulement 58% des femmes à l'âge de procréer (15 -44 ans) ont reçu deux vaccinations anti-tétaniques selon leur carte de vaccination, mais 75% d'elles ont reçu deux vaccinations selon l'histoire. L'objectif était de 80%. (voir tableau 1)

L'équipe a aussi préparé les questionnaires pour évaluer les connaissances, attitudes et pratiques (CAP) des comités et volontaires de santé villageoises et des mères sur les vaccinations, nutrition, paludisme, la lutte contre les maladies diarrhéiques et l'espacement des naissances. Il a été encourageant d'apprendre que 60% des mères savaient que les vaccins devaient prévenir et non guérir; que plus de 70% des mères ayant des enfants âgés entre 12 et 24 mois devraient continuer l'allaitement maternel; et que 70% des mères chercheraient assistance si leur enfant était déshydraté ou atteint de fièvre ou de paludisme.

D'autre part c'était décevant de trouver que seulement 39% des mères commençaient à allaiter les nouveaux-nés immédiatement après la naissance; que plus de la moitié des enfants cibles avait la diarrhée pendant les 15 derniers jours; et que 75% des mères ignoraient la cause du paludisme. (voir Tableau 4)

Les activités de la Survie de l'Enfant ont continué depuis la fin du projet (Août 1993) et elles continueront avec des fonds du PLAN.

\* une participation limitée des personnes actives dans le Projet

PLAN/BANAMBA CHILD SURVIVAL PROJECT

FINAL EVALUATION- JUNE 1994

COMPARISON OF MOTHERS' RESPONSES TO 17 KEY USAID CHILD SURVIVAL INDICATORS

| MOTHERS W/ CHILD 12-23 MONTHS OLD<br>(10)*RESPONDED TO AID INDICATORS AS FOLLOWS:                                     | BANAMBA*<br>DISTRICT                                     | PILOT (63)<br>VILLAGES** | TEST<br>VILLAGES** |
|---|--|--------------------------|--------------------|
| 1.% of children <24 mos old breastfed<br>within first 8 hours after birth?  | 39%  | 38%                      | 25%                |
| 2.% of infants <4 mos old fed only breastmilk?  | not asked  | not asked                | not asked          |
| 3. % of infants between 4-6 mos received<br>food supplement?  | 32%  | 29%                      | 21%                |
| 4. % of children to continue breastfeeding<br>until 24 mos of age?  | 42%  | 47%                      | 28%                |
| 5. % of mothers who continue nursing<br>child with diarrhea?  | 70%  | 69%                      | 72%                |
| 6. % of mothers who increase liquids<br>during episodes of child's diarrhea?  | 62%  | 52%                      | 83%                |
| 7. % of mothers who increase foods<br>during episodes of child's diarrhea?  | 62%  | 52%                      | 83%                |
| 8. % of mothers who seek help when child<br>is dehydrated? (this was substituted for ORS)                             | 79%  | 61%                      | 59%                |
| 9. Pneumonia control  | Acute Resp. Dis. not included in PLAN/Banamba CS Project |                          |                    |
| 10. % of children with access to vacc? (card)   | 85%  | 81%                      | 92%                |
| 11. % of children who received OPV-3? (card)  | 59%  | 55%                      | 68%                |
| 12. % of children who received measles<br>vaccine? (card)   | 59%  | 56%                      | 62%                |
| 13. % of dropouts between OPV-1 and 3 (card)  | 17%  | 20%                      | 38%                |
| 14. % of mothers with either maternal<br>card or vaccination card?  | 64%  | 63%                      | 51%                |
| 15. % of mothers who received 2 doses TT<br>before birth of last child?   | 48%  | ?                        | ?                  |
| 16. Pre-natal visits?   | not asked  | not asked                | not asked          |
| 17. % of mothers who could cite a method of<br>contraception? (Family Planning or an<br>intervention in PLAN/Banamba) | 16%  | 13%                      | .7%                |

\* 236 mothers responded; \*\* 233 mothers responded; \*\*\* 29 mothers from 5 villages

### III. ACRONYMS

|           |  |
|-----------|--|
| BCG       | Bacillus Calmette-Guerin (tuberculosis vaccine)    |
| CDD       | control of diarrheal diseases                      |
| CTS       | community tracking system                          |
| DTP-P     | diphtheria, tetanus, pertussis -polio              |
| HAs       | health animators                                   |
| HMIS      | health management information system               |
| IEC       | information, education, communication              |
| KAP       | knowledge, attitude and practice                   |
| MOH       | Ministry of Health                                 |
| ORS       | oral rehydration solution                          |
| ORT       | oral rehydration therapy                           |
| PEV (EPI) | Programme Elargi de Vaccination                    |
| TT        | tetanus toxoid                                     |
| USAID     | United States Agency for International Development |
| VHC       | village health committee                           |
| VHW       | village health worker                              |

#### IV. SCOPE OF WORK

The main purpose of this Scope of Work is to conduct an effectiveness assessment during the final evaluation of Child Survival Project activities undertaken in conjunction with and from the US Agency for International Development (USAID) Matching Grant, contract # OTR-0500-A-00-0110-00.

The main ingredient of this assessment is the implementation of a standardized survey to a representative sample of mothers of children aged 12-23 months. This survey is to be carried out using the methods recommended by USAID/BHR/PVC and Johns Hopkins University.

The survey does not include weighing or measuring the height of the children.

The consultant's responsibilities are:

- To organize and carry out the training of the interviewers and supervisors selected by the field office.
- To select the sample units (clusters).
- To supervise the data collection.
- To process and analyze the data using EPI-INFO.
- To write the report.

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- To conduct a sustainability study according to USAID guidelines.
- To write the sustainability study report.

#### V. METHOD OF EVALUATION

The final evaluation of PLAN/Mali's Child Survival Project in the Cercle (District) of Banamba, Mali was conducted May 16 through June 8, 1994. The non-participatory evaluation was carried out by six surveyors, three supervisors, two secretaries, one logistics person and four drivers -- all contracted by Plan/Banamba with a local Malian private firm called Kûnafoni - and an expatriate public health consultant.

The public health consultant, before arriving in Mali, was briefed at PLAN International Headquarters in Rhode Island on May 9, 1994. He was briefed by Dr. Luis Tam, Plan's Child Survival Coordinator, and Karla Steele, PLAN's USAID Grants Coordinator.

- After arriving in Mali, the consultant assisted Kûnafone in the final selection of surveyors, supervisors and secretaries. One of the supervisors was selected to assist the consultant in training the field workers and to help manage the surveys.

Prior to going to Banamba on May 23, selected members of the evaluation team prepared a list of all the Banamba District villages and their populations to be randomly selected for the vaccination coverage and KAP surveys. Survey instruments, maps and an abbreviated (4-page) guide for the surveyors were also prepared.

Upon arriving in Banamba the team received three days survey training, including field trials. The team then conducted two 30-cluster vaccination coverage surveys to compare coverage between the entire district (pop 120,000) and PLAN's 63 pilot villages with a total population of 30,000. (Pilot villages are those that received additional health education/mobilization support from PLAN/Banamba funded health animators (6) and health facility based health workers.)

The team surveyed five of ten test-villages where the names, vaccination and nutritional status of children are maintained in registers. (Registered children who are delinquent for vaccinations or nutritional follow-up receive reminder visits by member(s) of the village health committee (VHC) to bring them up to date.)

Using a two-page questionnaire (28 questions) the team evaluated the knowledge, attitude and practices of mothers regarding vaccinations, nutrition, malaria, diarrheal disease control and child spacing.

Nineteen village health workers (VHWs) were interviewed to assess their knowledge of the health education messages that they were promoting in the villages. (see table 5)

The three remaining health animators (originally there were six) were asked the same 13 questions asked of the village health workers.

Members of 24 village health committees were interviewed to assess committee activities, involvement and commitment.

The team exploited the results of the survey manually in Banamba, and left a cursory first draft summary of survey findings in English with PLAN/Banamba and the District Health Department. A debriefing was held June 3 in Banamba with PLAN's Bamako Director of Projects, Mr. Terence McCaughan, Mr. Amadou Bocoum, Program Head, PLAN/Banamba, and Dr. Lassana Keita, Medical Director of the Banamba District Health Department. The remaining five members of the team then returned to Bamako to begin preparing the written report.

Members of the evaluation team were:

Dolo, Tidiani - Counterpart to external consultant  
(5th year medical student)

Sidibé, Bana - Logistics/Surveyor  
 Koné, Aminata - Surveyor  
 Traoré, Ibrahima - Surveyor  
  
 Diarra, Sidiki - Supervisor/Surveyor  
 Sow, Amadou - Surveyor  
 Touré, Habsétou - Supervisor/Surveyor  
 Diallo, Mamadou - Surveyor  
 Traoré, Modibo - Surveyor  
 Samaké, Mansa - Surveyor  
 Cissé, Alhassane - Surveyor  
 Diallo, Fatoumata - Surveyor  
 Doumbia, Sekou - Surveyor/Secretary  
 Ouattara, Aly - Surveyor/Secretary  
 Maricol, Salif - Chauffeur  
 Coulibaly, Moussa - Chauffeur  
 Diallo, Dramane - Chauffeur  
 Maiga, Mohamane - Chauffeur  
 Godfrey, Harry - External Public Health Consultant, responsible for  
 and writer of this report

## VI. BACKGROUND OF PROJECT

### 1. PLAN/Banamba

PLAN has been supporting community development and amelioration of conditions for the poor in the District of Banamba since 1976. Banamba was chosen because of its socio-economic need and the poor health conditions that exist in these communities, which worsened after the 1976 drought. Priority for PLAN'S community development activities, including assistance in agriculture/irrigation, improvement of water sources, sanitation and education, are aimed at the least endowed areas of the district.

PLAN/Banamba became more directly involved in health when it launched its first Child Survival Project (1986-1989) assisting primarily in vaccinations for women and children. Prior to PLAN's involvement, the undocumented vaccination coverage rate was judged to be very low.

PLAN's second CS Project, which is the subject of this evaluation, expanded to include control of diarrheal diseases (CDD) by oral rehydration therapy (ORT) and nutrition activities. The Malaria component was added later.

Though PLAN assists the District Health Department to provide vaccinations for women and children throughout the entire district, certain villages (63) referred to as pilot villages receive extra attention to help them with community committees, village health workers, health education, etc.

Other villages referred to as test-villages (10) receive the same kind of attention plus a community tracking system. This system was initiated to register children and record their vaccination and nutrition status so that they can be followed more closely and visited if they become delinquent in their follow-up.

The three-year CS budget (September 1, 1990 - August 31, 1993) totalled \$830,460 of which PLAN contributed \$445,163 and AID/Washington contributed \$385,297. Thirty-five percent (35%) of the budget was for immunizations, 35% for CDD and 30% for nutrition.

## 2. District of Banamba

The District of Banamba, with 200 villages and a population of 123,000, is divided into 6 arrondissements (sub-districts) and covers an area of 7,500 square kilometers. Except for the main town of Banamba with 8000 inhabitants, the district is rural.

The area is not electrified and many of the villages are accessible only by narrow tracks which become impassable to motor vehicles in the rainy season.

## 3. Health Data

Mali, (pop. approx. 8,000,000) has one of the highest mortality rates in the world. The mortality rate for children under five years of age was nearly 30% as recorded by the last national census in 1987. Infant mortality rate in Mali is approximately 17% (1989), but the MOH estimates that infant mortality in Banamba is over 17% due to related factors of diarrheal disease, malaria, measles, and malnutrition.

The 1989 World Development Report provides the following data for Mali:

- 17% of babies are born with low birth rates <sup>weights</sup>
- infant mortality rate is 17%
- children under 5 years of age mortality rate is 30%

- daily caloric supply per capita is 2074
- crude birth rate is 51 per 1000 population
- crude death rate is 20 per 1000 population
- total fertility rate is 7.0
- life expectancy at birth is 47 years

The 1989 Child Survival Baseline Survey for Banamba indicated that 40% of the population had an illness within the previous two weeks of the survey. The basic causes were:

- malaria..... 44%
- acute respiratory infections..... 31%
- measles..... 2.5%

The latest annual Health Statistics Analyses (1992) published by the MOH in August 1993 listed the 10 primary causes of mortality for all Mali children under five years of age:

|   | <u>Total Deaths</u> |
|---|---------------------|
| 1. fever with convulsions.....                  | 253                 |
| 2. cough (less than 15 days duration).....      | 82                  |
| 3. cough (more than 15 days + asthma).....      | 50                  |
| 4. prematurity.....                             | 35                  |
| 5. fever, asymptomatic.....                     | 31                  |
| 6. anemia and illnesses of the blood.....       | 24                  |
| 7. other illnesses including Vit-A deficiency.. | 22                  |
| 8. kwashiorkor.....                             | 22                  |
| 9. marasma, infantile.....                      | 15                  |
| 10. congenital malformation.....                | 8                   |
|   | 520                 |

Please note that infant mortality (deaths under one year of age) is reportedly 17% or over 50,000 per year. With such small numbers of deaths being reported above (520 for the ten leading causes of death under five years of age), it is not possible to measure the real impact of the CS Project on childhood mortality. The same is true for childhood morbidity.

The ten primary causes of mortality among children under five years of age in the Region of Koulikoro, to which the District of Banamba belongs, is very similar to the national statistics shown above. Two important differences are: 1) asymptomatic fever, which is assumed to be largely caused by malaria, is the second most important cause of death in the Region of Koulikoro; and 2) diarrhea with dehydration is the seventh most important cause of death.

## VII. OBJECTIVES (as revised during mid-term evaluation)

### 1. Immunizations: Immunize 45% of children before their first birthday

Immunize 80% of women of child-bearing age (15-44 years) against tetanus with at least two injections of tetanus toxoid

### 2. Nutrition: Reduce acute malnutrition rate from 28% to 20% in children 6-23 months of age in 30 pilot villages - by growth monitoring, counseling of mothers, and follow-up of malnourished children

Distribute vitamin-A supplement to 70% of the high risk children 12-23 months of age

### 3. Diarrh. Dis: Thirty-five percent of diarrhea cases in children 0-23 months old living in intervention villages will be treated with ORS packets, sugar-salt solutions or cereal-based ORS, plus the continuation of feeding and/or breast-feeding

### 4. Malaria: All children 0-5 years old in pilot villages to receive nivaquine

Pregnant women to receive malaria chemoprophylaxis

## VIII. FINDINGS

### 1. Immunizations

#### A. Children

Vaccination coverage in the District of Banamba is very good. Although some objectives were not met, the fact that the District has been able to maintain a high rate of coverage over the years is commendable. (see table 1)

Vaccination coverage was measured in 30 of the 63 pilot villages; in five of the ten test-villages; and in 30 of the 200 villages district-wide.

Coverage was best in the test-villages where names of children and their vaccination and nutritional status are maintained in a register. Those children delinquent for vaccinations receive reminder visits from member(s) of the health committee.

Coverage, though, in the pilot villages where IEC sessions are conducted by health animators or clinic based health personnel is not as good as the remaining villages in the district. This may be explained by the fact that the pilot villages were chosen because they were the least endowed of all the villages and therefore the most difficult to serve.

The following vaccination results are for the entire District of Banamba:

District-wide, the percentage of children 12-23 months old completely vaccinated (confirmed by their vaccination card) was 42%. The objective was 45%

The percentage of children with BCG scars was 84% while the objective was 94%

Measles vaccination coverage, 59%, surpassed the objective of 50%. However, the results were hand tabulated and premature vaccinations may have been counted as valid vaccinations

DTP/Polio-3 coverage, 59%, surpassed the objective of 45%.

Only 59% of women from 15 to 44 years of age received their second injection of tetanus toxoid according to their vaccination cards. If one includes history of vaccination, coverage increases to 74%. The objective was 80%.

Access to vaccination services is very high as confirmed by the high percentage of children receiving both BCG and DTP/polio-1. Over 80% of children received BCG and DTP/polio-1 according to their vaccination cards and around 90% if history of vaccination is included for those who did not have a card.

This brings up another vaccination indicator which is the drop-out rate between DTP/polio-1 and 3. There remains considerable room for improvement since the rate is 28%. But Banamba has come a long way since the base-line study in 1989 when the drop-out rate was 67%.

PLAN/BANAMBA/CS - COMPARISON OF EPI OBJECTIVES & RESULTS, JUNE 1994

TABLE 1 CHILDREN 12 - 23 MONTHS OF AGE

|  | 1989<br>BASELINE<br>SURVEY | 1992<br>REVISED<br>OBJECTIVES | 1994<br>DISTRICT-<br>WIDE | 1994<br>PILOT (63)<br>VILLAGES | 1994<br>TEST (10)<br>VILLAGES |
|--|----------------------------|-------------------------------|---------------------------|--------------------------------|-------------------------------|
| CHILDREN<br>WITH CARDS                 | 57%                        | 85%                           | 86%                       | 84%                            | 92%                           |
| BCG                                    | 57%                        |                               | 85% CARD<br>91% HIST.     | 81% CARD<br>91% HIST.          | 92% CARD<br>95% HIST.         |
| BCG SCAR                               | 75%                        | 94%                           | 84%                       | 75%                            | 94%                           |
| DPT/POLIO-1                            | 54%                        |                               | 82% CARD<br>87% HIST.     | 76% CARD<br>89% HIST.          | 92% CARD<br>95% HIST.         |
| DPT/POLIO-3                            | 18%                        | 45%                           | 59% CARD<br>64% HIST.     | 55% CARD<br>60% HIST.          | 68% CARD<br>70% HIST.         |
| MEASLES                                | 35%                        | 50%                           | 59% CARD<br>63% HIST.     | 56% CARD<br>65% HIST.          | 62% CARD<br>68% HIST.         |
| COMPLETELY<br>VACCINATED               | 15% CARD                   |                               | 52% CARD                  | 46% CARD                       | 54% CARD                      |
| COMPLETELY<br>VACCINATED<br>< 1 YR OLD |                            | 45%                           | 42% CARD                  | 37% CARD                       | 30% CARD                      |
| RECEIVED<br>VITAMIN-A AT<br>LEAST ONCE |                            | 70%                           | 28%                       | 21%                            | 24%                           |

ANTI-TETANUS VACCINATIONS AMONG WOMEN 15-44 YEARS OF AGE \*

| CARD/YES   |     |     | 64%                   | 63%                   | 51%                   |
|------------|-----|-----|-----------------------|-----------------------|-----------------------|
| TET.TOX. 1 |     |     | 62% CARD<br>83% HIST. | 58% CARD<br>82% HIST. | 51% CARD<br>70% HIST. |
| TET.TOX. 2 | 55% | 80% | 59% CARD<br>74% HIST. | 58% CARD<br>76% HIST. | 49% CARD<br>62% HIST. |
| TET.TOX. 3 |     |     | 42% CARD<br>50% HIST. | 51% CARD<br>61% HIST. | 43% CARD<br>51% HIST. |
| TET.TOX. 4 |     |     | 25% CARD<br>29% HIST. | 34% CARD<br>38% HIST. | 32% CARD<br>38% HIST. |
| TET.TOX. 5 |     |     | 11% CARD<br>14% HIST. | 16% CARD<br>19% HIST. | 8% CARD<br>19% HIST.  |

\*ALMOST HALF OF THE NEWBORNS WERE PROTECTED AGAINST NEO-NATAL TETANUS

A final observation on children's vaccinations: The rate for children completely vaccinated was highest among those in the 10 test-villages. This would be expected since there is close follow-up of children delinquent in their vaccination status. However, the rate for children completely vaccinated before one year of age was lowest among those in the test-villages. This would imply then that follow-up is being done -- but not on a timely basis.

Felicitations to the district health personnel responsible for vaccine conservation and to PLAN/Banamba for making it possible. Their refrigerator equipment was functioning well and the temperature records were available and up to date to bear this out. Vaccine outages occurred in the district but were infrequent and of short duration.

B. Women, Child-bearing age (15-44 years)

The objective of 80% of child-bearing age women to receive two injections of tetanus toxoid (TT) vaccine was a reasonable target. Though only 59% received two or more injections according to their vaccination card, 74% received two or more injections if history of vaccination is considered. (55% were reported to have received their 2nd TT during the 1989 baseline survey)

It is interesting to note that only 62% of the women received their first TT injection. One would suppose that if 85% of the children had access to vaccination services (85% of children received BCG vaccinations), women would have similar access. Perhaps there was access but women didn't take advantage. Perhaps also, tetanus toxoid vaccinations were not always associated with childhood immunizations. On the positive side, nearly as many women received their second TT as their first. Their dropout rate was admirably low at 5%. Another plus, 47% of Banamba's newborns were protected against neo-natal tetanus.

To help put vaccination coverage into perspective, the following tables compare results of the last national vaccination survey which was done in 1990 with the 1994 Banamba survey:

TABLE 2 VACCINATION OF CHILDREN 12 - 23 MONTHS OLD

|                       | BCG | DTP-P1 | DTP-3 | MEASLES | CHILDREN COMPLETELY VACCINATED |
|-----------------------|-----|--------|-------|---------|--------------------------------|
| NATIONAL SURVEY, 1990 | 78% | 66%    | 29%   | 47%     | 22%                            |
| BANAMBA SURVEY, 1994  | 84% | 82%    | 59%   | 59%     | 52%                            |

TABLE 3

## WOMEN VACCINATED AGAINST TETANUS

|   | TT-1 | TT-2 | TT-3 | CHILDREN PROTECTED |
|---|------|------|------|--------------------|
| NATIONAL SURVEY, 1990<br>(PREGNANT WOMEN)       | 41%  | 30%  | 2%   | 18%                |
| BANAMBA SURVEY, 1994<br>(WOMEN 15-44 YEARS OLD) | 62%  | 59%  | 42%  | 47%                |

Before ending the vaccination component of this report, the writer would like to take issue with the policy of vaccination centers offering daily vaccination services and the policy of opening a vial of vaccine to administer one vaccination. This is WHO policy. However, the writer thinks it is often misinterpreted in the field. (Or perhaps the writer misinterprets the policy.)

This is a good policy for vaccination centers in large urban areas where one or more vials of vaccine is used per day. And whenever it is necessary to open a vial of vaccine (20 doses for example) to vaccinate the last child of the day, it is reasonable to do so. This eliminates the risk of the child going unprotected while the wastage factor remains supportable (47.5%) because at least one vial of vaccine has been completely used. Wastage diminishes with additional vials.

In a rural area such as Toukoroba, Banamba (pop. <2,000) vaccinations often average less than two per day, which is the rule and not the exception in such areas. With a population of 2,000 there are 100 target children annually (under one year of age). They will visit the center 4 or 5 times per year. Thus, the center performs 400 or 500 vaccinations per year averaging less than two vaccination per day. With one or two children presenting for vaccination per day, the wastage factor (90-95%) becomes prohibitive.

This practice has not as yet been the solution to increasing vaccination coverage in rural areas. It is often counter-productive. When it is publicized that vaccinations are available on a daily basis and, in reality, often times they are not, the vaccination program loses credibility. When the practice is enforced, vaccine outages frequently occur at one or more levels of the supply line and again the program loses credibility.

A more appropriate solution to increasing vaccination coverage would be to schedule vaccination sessions according to demand, (e.g., one would not schedule weekly outreach vaccinations to villages with 5 children under one year of age) publicize the sessions adequately, and above all, respect the schedule as publicized.

It is becoming more and more difficult for UNICEF to meet the vaccine needs of the developing countries. Therefore, if sustainability is a genuine concern, excessive wastage of vaccine must also become a genuine concern.

Table 4 PLAN/BANAMBA CHILD SURVIVAL PROJECT  
 FINAL EVALUATION-JUNE 1994-COMPARISON OF MOTHERS' KAP ANSWERS BY STRATEGIES

| PERCENT OF MOTHERS W/ CHILD 12-23 MOS<br>OLD WHO KNEW ANSWERS TO THE FOLLOWING: | BANAMBA *<br>DISTRICT | PILOT (63)<br>VILLAGES ** | TEST (10) *<br>VILLAGES ** |
|---|-----------------------|---------------------------|----------------------------|
| Purpose of vaccinations?  | 60%                   | 62%                       | 72%                        |
| No. of visits needed to vac. child?   | 34%                   | 20%                       | 24%                        |
| Minimum age for measles vaccination?  | 19%                   | 9%                        | 19%                        |
| Purpose of tetanus vac. for women?  | 49%                   | 39%                       | 48%                        |
| More than one vac. for tetanus neces?   | 57%                   | 57%                       | 66%                        |
| Child nursed w/o delay after birth?   | 39%                   | 38%                       | 25%                        |
| Child still nursing?  | 76%                   | 71%                       | 62%                        |
| Child to continue nursing til 24 mos?   | 42%                   | 47%                       | 28%                        |
| Food supplement at 4-6 months?  | 32%                   | 29%                       | 21%                        |
| Did your child have diarrhea within<br>past 15 days?                            | 52% yes               | 46% yes                   | 38% yes                    |
| Increase liquids/foods during diarrhea?   | 62%                   | 52%                       | 83%                        |
| Continue nursing child w/ diarrhea?   | 70%                   | 69%                       | 72%                        |
| Describe one sign of dehydration?<br>Describe two signs of dehydration?         | 52%<br>17%            | 49%<br>21%                | 55%<br>17%                 |
| Seek help when child is dehydrated?   | 79%                   | 61%                       | 59%                        |
| Malaria drugs available in your village?  | 43% yes               | 37% yes                   | 21% yes                    |
| Seek help when child has malaria/fever?   | 80%                   | 65%                       | 66%                        |
| Take malaria prophlaxis when pregnant?  | 52%                   | 44%                       | 28%                        |
| Malaria proph. for child in rainy season?                                       | 30%                   | 40%                       | 41%                        |
| How does one get malaria?   | 17%                   | 20%                       | 38%                        |
| Cite one way to avoid mosquito bites?<br>Cite two ways to avoid mosquito bites? | 48%<br>28%            | 43%<br>32%                | 45%<br>21%                 |
| Do you understand contraception?  | 38%                   | 31%                       | .7%                        |
| Cite 1 method of contraception?<br>Cite 2 methods of contraception?             | 16%<br>13%            | 13%<br>10%                | .7%<br>.3%                 |
| Did you ever <u>not</u> receive health services<br>because you had to pay?      | 19% yes               | 21% yes                   | 25% yes                    |

\* 236 mothers responded; \*\* 233 mothers responded; \*\*\* 29 mothers responded from 5 villages

-TABLE 5

## PLAN/BANAMBA CHILD SURVIVAL PROJECT

## FINAL EVALUATION-JUNE 1994-COMPARISON OF VHWS' KAP ANSWERS BY STRATEGIES

| PERCENTAGE OF VILLAGE HEALTH WORKERS (VHWS) WHO KNEW ANSWERS TO FOLLOWING: | BANAMBA • DISTRICT | PILOT (63) VILLAGES ** | TEST (10) * VILLAGES ** |
|--|--------------------|------------------------|-------------------------|
| Purpose of vaccinations?   | 100%               | 95%                    | 100%                    |
| No. of visits needed to vac. child?  | 67%                | 12%                    | 0%                      |
| Minimum age for measles vaccination?                                       | 89%                | 69%                    | 0%                      |
| Purpose of tetanus vac. for women?   | 78%                | 87%                    | 100%                    |
| More than one vac. for tetanus necess?                                     | 100%               | 95%                    | 100%                    |
| Food supplement at 4-6 months?   | 89%                | 68%                    | 0%                      |
| Increase liquids/foods during diarrhea?                                    | 100%               | 79%                    | 100%                    |
| Child w/ diarrhea continue nursing?  | 33% yes            | 35% yes                | 100% yes                |
| Describe two signs of dehydration?   | 83%                | 55%                    | 100%                    |
| Seek help when child is dehydrated?  | 67%                | 50%                    | 100%                    |
| Seek help when child has malaria/fever?                                    | 94%                | 29%                    | 100%                    |
| How does one get malaria?  | 89%                | 89%                    | 100%                    |
| Cite two ways to avoid mosquito bites?                                     | 89%                | 89%                    | 100%                    |

\* 7 VHWS; \*\* 15 VHWS; \*\*\* 2 VHWS

TABLE 6

## RESULTS OF VILLAGE HEALTH COMMITTEE INTERVIEWS

|  | BANAMBA • DISTRICT | PILOT ** VILLAGES (63) | TEST VILLAGES (10) *** |
|--|--------------------|------------------------|------------------------|
| Average # members per committee          | 9                  | 5                      | 6                      |
| Percent of members elected by villagers  | 78%                | 42%                    | 100%                   |
| Percent existing since 1992              | 11%                | 38%                    | 100%                   |
| Percent meeting each month               | 12%                | 25%                    | 100%                   |
| Percent met last month                   | 22%                | 46%                    | 100%                   |
| % of committees keeping minutes          | 44%                | 23%                    | 100%                   |
| % of committees resolving problems       | 67%                | 62%                    | 50%                    |
| % of committees feeling need to continue | 100%               | 92%                    | 100%                   |

\* 9 Committees interviewed; \*\* 13 Committees interviewed; \*\*\* 2 Committees interviewed

## 2. Nutrition

Since it was not in the scope of work to weigh babies during the survey, it was not possible to measure the objective of reducing acute malnutrition from 28% to 20% among babies 6-23 months of age.

A nutrition survey that was done in mid-1992 found that one-half of children 12-23 months of age were malnourished. This is the same result that was found in a survey three years before in 1989.

In posing child-nutrition related questions to mothers during this 1994 vaccination coverage survey, responses in general were less than satisfactory: (see Table 4, page 14)

- less than 40% of mothers started nursing newborn without delay
- less than 50% of mothers planned to nurse child until 23-24 months of age (some as long as 36 months and some as little as 12 months)
- less than 35% of mothers knew to begin food supplement for child between 4 - 6 months of age

On the positive side, over 70% of mothers were still nursing their child (12-23 months old).

Vitamin-A was to be administered to 70% of the high risk children 12-23 months of age. Results of this survey indicated that 28% of the target children received at least one treatment of vitamin-A.

It may be more appropriate in some child survival programs where personnel are in short supply and overworked that routine growth monitoring of all children within a certain age range be discontinued (especially if there is no follow-up when needed). Instead, health workers should be on the lookout for clinically malnourished children (rusty and/or thin hair, swollen abdomens, emaciation, etc) in any child-age group and take whatever action is possible at their level when indicated. This would require routine follow-up including weighing. The mother should be advised of what she can do; and if malnutrition clinics or other appropriate services are available in the area, the mother and child should be referred without delay.

### 3. Control of Diarrheal Diseases

Thirty-five percent of diarrhea cases in children 0-23 months old living in intervention villages were to have been treated with ORS packets, sugar-salt solutions or cereal-based ORS, plus the continuation of feeding and/or breast-feeding.

In order to measure this objective, mothers of children 12-23 months old were asked several KAP questions on diarrhea and dehydration. Concerning diarrhea, the questions were directed not toward the administration of a specific rehydration solution but more toward the importance of knowing to increase liquids and food during a diarrheal episode.

As with the knowledge and practice of immunizations, mothers in the test-villages responded best, overall, to the diarrhea questions. Mothers in the pilot villages responded the poorest.

District-wide, 62% of the mothers knew to increase liquids and food during their child's bout with diarrhea and 70% knew to continue nursing.

Concerning dehydration, 79% of the mothers knew to seek help when the child is dehydrated and 52% could describe at least one sign of dehydration.

Disappointing is the fact that the incidence of diarrhea may be worse today (over 50% for children 12 -23 months old) than it was five years ago during the base line survey (37% for children 0-59 months old). More emphasis needs to be placed on preventing diarrhea. Hygiene is still not well understood in the villages.

### 4. Malaria

All children 0-5 years old in pilot villages were to receive nivaquine and pregnant women were to receive malaria chemoprophylaxis.

Mothers in pilot villages indicated that 40% of their children took malaria chemoprophylaxis during the rainy season.

Malaria prophylaxis for children under five years of age is not MOH policy. Therefore the practice should be discontinued. It is not realistic to expect comprehensive coverage of children under five, nor is it possible to guarantee that a child will remain on prophylaxis until the age of five. And if it were, two major questions arise: how vulnerable does a child become when prophylaxis is discontinued either before or after the age of five years; and what effect does wide-spread and uncontrolled prophylaxis have on drug resistance. It would be much more worthwhile to discontinue chemoprophylaxis for children under-five and make malaria drugs available to treat all people each time they have malaria or suspect malaria, i.e., fever.

The mid-term evaluation did not quantify the objective for pregnant women taking malaria prophylaxis but during PLAN's first CSIII Project the objective was 50% of pregnant women in 27 villages.

Results of this evaluation indicate that, district-wide, 52% of mother took malaria prophylaxis when they were pregnant. Only 28% of the mothers in the test-villages said they took malaria prophylaxis when they were pregnant. In the pilot villages 44% took prophylaxis.

It was good to learn the mothers (80%) respond that they seek help when their child has malaria or fever. However, only 38% of the mothers in the test-villages knew the cause of malaria; and a mere 17% of mothers throughout the district knew.

##### 5. Health Management Information System (HMIS)

HMIS in PLAN/Banamba's CS Project was never fully developed. Submission of monthly reports from the health animators (HAs) was well respected and for the most part timely. A large part of the reporting was in narrative (which isn't necessarily bad) but, with the exception of vaccinations performed, not enough quantifiable progress reporting was done on standardized reporting forms. The team got the impression that the reports were not read much - especially after the Project completion date. The place on the folder for comments on monthly reports was checked four times out of a possible thirty-two. It is not surprising then that not much feedback occurred after Project completion date.

Now that health animators will no longer be available to help manage, supervise, and report activities at the community level, the continuation of CS activities in Banamba compels the existence of a simple but effective reporting system. Though many VHWs are not literate, a mechanism must be found to know about the CS activities in the communities. Some options are:

- require reports only from villages with literate VHWs
- identify villagers who can assist illiterate VHW with report
- outreach health workers from health posts report on village CS activities
- outreach health workers assist illiterate VHW with report
- teach VHWs to read and write sufficiently to submit reports
- create a report form that doesn't require literacy
- appropriate combinations of any of the above

The team has drafted a proposal for a brief, one-page, activity report form which could be submitted from each participating village. To better facilitate the task, the report should be a 4-copy NCR (no carbon required) form for submission by the VHW and/or village health committee (VHC) to the medical chief of the arrondissement on a monthly basis. One copy remains in the village, three copies to the arrondissement health facility of which two to be forwarded to the District level -- one for the Health Department and one for PLAN/Banamba. (see tables 7 and 8 - draft proposals)

TABLE 7

BANAMBA DISTRICT  
MONTHLY VILLAGE HEALTH REPORT

| (Village)   | (Arrondissement) | (Month) |
|---|------------------|---------|
| (make marks in this column)   |                  |         |
| Number of births during month   |                  |         |
| Number of deaths during month   |                  |         |
| Suspected cause(s) of death<br>(to be filled in by health facility personnel)                           |                  |         |
| Number of persons treated for malaria or fever  |                  |         |
| Number of persons treated for diarrhea  |                  |         |
| Number of persons referred to health facility   |                  |         |
| Number of children 9 months old or older<br>who need vaccination against measles                        |                  |         |
| Number of children with symptoms of malnourishment<br>(distended abdomen, thin and/or rusty hair, etc.) |                  |         |
| Number of Community Health Committee meetings   |                  |         |
| Number of supervisory visits from health facility   |                  |         |

MEDICAL KIT INVENTORY

| ITEM          | RECEIVED | ON HAND | DISTRIBUTED | BALANCE |
|---------------|----------|---------|-------------|---------|
| chloroquine   |          |         |             |         |
| aspirin       |          |         |             |         |
| ORS packets   |          |         |             |         |
| anti-parasite |          |         |             |         |
| vitamin-A     |          |         |             |         |
|               |          |         |             |         |
|               |          |         |             |         |
|               |          |         |             |         |

\_\_\_\_\_  
(Name of village health worker)

\_\_\_\_\_  
(Date)

BANAMBA DISTRICT

TABLE 8 (VILLAGE REPORT)

DUGU KENEYA KUNAFONI SEBE KALOLA

| (Dugu)  | (Arrondissement) | (Kalo) |
|---|------------------|--------|
| (kala ti ni sira kônô)  |                  |        |
| Banké diaté kalokônô  |                  |        |
| Saya diaté kalokônô   |                  |        |
| Saya sababouw<br>(dokotoroso dokotoro de kakan ka bolonô da ni jorola)                  |                  |        |
| sumaja bakatô ani saji bakatô munuw fura kéra   |                  |        |
| Kônôbôlibakatô munuw fura kéra  |                  |        |
| Dugu dokotoro je banabakatô haké min bila kata dokotorosola                             |                  |        |
| Deminséni haké munu si bé kalo kônôtôla wali o kôfé ni njoni boloti ka kan ka ké ula    |                  |        |
| balokodjukuja tamasere bé deminséni munu la (kônôbaraba, ani/walima kunsiki blén, etc.) |                  |        |
| Dugu kénéya comite je ladjé djoli ké  |                  |        |
| Dokotorosow mokow ye koloshili djoliké  |                  |        |

FURA DIATEMINE

| Fura            | MIN SÔRÔLA | MIM BE BOLOKORO | LADIENSENI | BALANCI |
|-----------------|------------|-----------------|------------|---------|
| chloroquini     |            |                 |            |         |
| aspirini        |            |                 |            |         |
| ORS foroko      |            |                 |            |         |
| banakisékélélan |            |                 |            |         |
| vitamini-A      |            |                 |            |         |
|                 |            |                 |            |         |
|                 |            |                 |            |         |
|                 |            |                 |            |         |

(Dugu dokotoro tókô)

(Dôn)

IX. SUSTAINABILITY

A. Status



A.I.D. funding for the PLAN/Banamba Child Survival (CS) Grant ended August 31, 1993. CS activities are still ongoing nearly 10 months after the grant ended. PLAN's intentions are to continue CS activities as long as they maintain a presence in the District of Banamba.

Major project responsibilities and control of the Banamba CS Project have been shared by PLAN throughout this grant with the District Health Department. PLAN intends to continue this relationship while proceeding with CS activities.

B. Estimated Recurrent Costs and Projected Revenues

Banamba' vaccination coverage rate is recognized throughout public health circles as one of the best in the country as well as one of the best maintained over the years. PLAN intends to help the District Health Department sustain this level of vaccination coverage.

Another key CS activity that PLAN feels is effective and wants to sustain and expand is community development through village health committees (VHCs) and village health workers (VHWs).

Approximate recurrent costs per year for the next three years (and beyond) will be:

VACCINATIONS

- maintenance of vehicles (10% of purchase price).....\$5,000
- fuel (1 4x4 pickup, 20 mobylettes, 6 frigos).....\$5,000
- per diem (\$4.00 per day x 600 person days).....\$2,400

TRAINING and SUPERVISION of VHCs & VHWs

- training of VHC members and VH workers.....\$6,000
- supervision of VH workers (by MOH staff).....\$6,000
- consultant and/or local ONG fees.....\$6,000

TOTAL ESTIMATED RECURRENT COSTS PER YEAR     \$30,400

PLAN recognizes that in addition to the above recurrent costs that from every three to five years it will be necessary to replace the vehicles made available to the District Health Department.

PLAN also proposes to absorb the initial cost of providing medical kits for VHWS once they have been appropriately trained. Recurrent costs for replenishing the kits will be covered by fees for services in the villages. PLAN's objective is to provide medical kits in 34 villages before the end of 1994.

The recurrent costs for providing vaccination services are reasonable. Nevertheless, given the unfavorable socio-economic conditions in the District, it is not reasonable to expect the beneficiaries to be able to absorb a significant portion of these disease prevention costs in the near future.

Cost recovery for curative services (replenishing medical kits) is likely if competent management of receipts can be achieved.

PLAN has already provided funds for the continuation of CS activities and plans to continue funding in the foreseeable future. With the exception of fees for services for the replenishment of the medical kits, no other revenues are anticipated.

Without UNICEF's participation in Mali's Immunization Program, vaccine costs would not be sustainable. Without PLAN's (or someone else's) assistance in delivery of vaccinations in Banamba, that too would not be sustainable.

An important lesson from PLAN's CS activities is that supporting the local MOH in the delivery of vaccination services permits the MOH to perform its duties which, without external help, would not likely be possible; it also eliminates the more costly and redundant procedure of an NGO engaging its own personnel and supplanting an already existing, capable service.

### C. Sustainability Plan

The external consultant talked with five Project staff plus six Project support staff and four collaborative MOH staff. The Health Coordinator of the PLAN/Banamba Field Office played the major role in the Project design, implementation and monitoring. His replacement as Program Head took over CS activities in the District after the Project completion date. The replacement had no involvement in the Project during the A.I.D. funding phase. PLAN/Mali's Director of Projects, which included the CS Project, played a role in Project monitoring, especially after the A.I.D. funding phase. Two health animators and their supervisor (the other four animators have left CS activities and were not interviewed) played major roles in implementing and monitoring the Project.

The Project's sustainability strategy as described in the Detailed Implementation Plan (DIP) is to support community organizations, as per Malian government policy. "PLAN will encourage the health committees to become more autonomous, to articulate their needs, and implement their decisions effectively. They will train the VHWS, who are selected by the communities, to provide needed primary health care (PHC) in the various CS interventions, and ensure that they get the supplies and backup support which they need."

"This CS program will follow the same strategy as our other development programs, mainly increasing information to the people to make them aware of existing problems and promoting the organization of the villages to deal with them."

"Although financial sustainability of the program is theoretically possible, the poverty of the people, and the chronic financial crisis in government agencies, makes sustainability unrealistic in the short run.....as a general development agency PLAN is in good position to contribute to community level improvements in living standards through income-generating activities, educational programs, and water supply."

PLAN's community development program which includes assisting villages to establish village health committees (34), training village health workers (150) and promoting health information, education and communication (IEC) activities in the villages (200) were sustainability-promoting activities. Sponsoring training and refresher courses in nutrition education, immunization services, oral rehydration therapy, and malaria treatment for 65 MOH personnel were also sustainability-promoting activities.

Some of the village health committees are not functioning as planned but training and/or retraining of 76 committee members for seven days was going on during this evaluation. Another 52 members are scheduled for training from June 3-9, 1994, and yet another 45 members are scheduled from June 12-18, 1994. In all, 38 villages are represented.

In an attempt at cost recovery the MOH and PLAN/Banamba initiated fees for service in the fixed health facilities to help support non-government health workers ("matrones" and "aide soignants") who provide IEC and other outreach services to the villages. Though the fee appeared to be minimal (approximately \$1.00) it was evidently too high for the less endowed pilot villages and, as a result, attendance at the facilities dropped off significantly. The end result was fees-for-services were dropped and the workers were provided per diem for outreach services.

Income-generating activities were mentioned in the brief description above of the Project's plan for sustainability but were not initiated.

Possibly an unplanned positive result of the CS Project was the emphasis on sustainability in PLAN/Mali's Programme Strategy FY94-96. Section Two, which is Programme Principles, and Section Three, which is Programme Strategy, are essentially all about sustainability:

"PLAN/Mali's ideal is to enable communities to take charge of their own development."

"...PLAN must be careful not to disable communities through misplaced generosity or an underestimation of what they are capable of doing for themselves."

"In the period FY94-96 sustainability will be an important consideration in project support."

"An emphasis on community participation is the realisation of PLAN/Mali's concern with community empowerment. Communities must share significantly in every stage of the project action...."

During the design of the Project, no counterpart institutions such as the MOH or local NGO made a financial commitment to sustain Project benefits.

#### D. Monitoring and Evaluation of Sustainability

Indicators PLAN used to track achievements in sustainability outputs and/or outcomes were the numbers of VHCs established (34 of 55 targeted), VHWS trained (150), villages that received IEC activities (200), and MOH personnel (65) that received training in CS activities.

IEC aspects of PLAN's CS is an activity that communities can sustain and have so demonstrated in one degree or another. Some mothers are well informed on vaccination practices, malaria treatment, diarrheal disease treatment, and nutrition education as observed during the KAP part of this evaluation.

Qualitative data indicating change in the sustainability of Project policy and benefits is probably best manifested in PLAN's FY94-96 Programme Strategy for Mali as mentioned in "uplanned results" four paragraphs previous to this one.

The following in-country agencies assisted with the mid-term evaluation:

- Save The Children USA/CS Project in Kolondiba, Mali
- MOH/National Immunization Center - Bamako
- MOH/Banamba District

To assist with the final evaluation, the consulting agency Kûnafoni in Bamako provided a team of six interviewers, three supervisors, two secretaries, a logistics person and four drivers. Though no other in-country agencies were involved in the design, implementation or analysis of this final evaluation, the evaluation team consulted frequently with the Banamba District Health Officer. The team also consulted with the MOH/National Immunization Center in Bamako, The MOH/Malaria Program in Bamako, The MOH/Director of the Division of Epidemiology, The MOH/Nutrition Program, and UNICEF/Bamako. The team visited the Regional Health Office in Koulikoro before going to the field in Banamba.

PLAN evidently received feedback and recommendations from the DIP review and carried out those recommendations. Reference to this effect is made in PLAN/Banamba's Third Annual CS Report: "All recommendations made at the DIP review have been implemented." The evaluation team, however, was unable to locate a DIP review document. Nor was the team able to locate a document, or any reference to a document, on a technical review of the Project Proposal.

Overall, PLAN carried out the recommendations of the mid-term evaluation - perhaps the most important of which was to continue CS activities under PLAN sponsorship with or without A.I.D. funding.

Little progress was made on the community-cost-sharing recommendations. However, within the mid-term recommendations it was recognized and stated that the people of Banamba "will need time to recognize and accept responsibility to protect their children's health through their own actions."

PLAN also reconsidered and therefore did not implement construction of a large clinic because "the mid-term evaluation specifically questioned the value of further clinic construction."

#### E. Community Participation

Members of 24 village health committees including some village chiefs were interviewed during the course of the evaluation.

Approximately 500 mothers of children 12-23 months of age were interviewed as well. Village health workers (24) and health animators (3) were also interviewed.

Community members and leaders perceived all the CS activities as being effective at meeting current health needs. Vaccination was probably considered the most important with control of diarrheal diseases and malaria also considered priorities. Whether the malaria prophylaxis policy is good or bad, the fact that 40% of children between 12-24 months of age took malaria prophylaxis during the rainy season demonstrates mothers' concern about malaria.

Activities which PLAN carried out to enable the communities to better meet their basic needs and increase their ability to sustain effective child survival project activities were:

- assisting villages to establish village health committees

- training village health workers

- promoting health information, education and communication (IEC) activities in the villages

- Sponsoring training and refresher courses in nutrition education, immunization services, oral rehydration therapy, and malaria treatment for MOH personnel

No evidence was seen to indicate that communities participated in the design of CS activities. Communities did participate in the implementation and evaluation of CS activities by establishing health committees, electing or appointing VHWS, conducting IEC in the villages and assisting the final evaluation team to conduct the vaccination coverage/KAP survey.

There are 34 functioning health committees in the Project area. Only 12% of the committees meet each month in the non-pilot areas. Twenty-five percent

(25%) of the committees meet monthly in the pilot villages. Both (100%) of the test-village committees interviewed meet at least once per month. (see table 6)

With the training and retraining of committee members that is now going on, at least one member of all the committees is female.

Two significant issues that are currently being addressed by health committees are:

mobilization of village women and children to attend vaccination sessions

problem of some women waiting too long before responding to child's diarrhea.

All villages with health committees and VHWS contribute human resources which encourages continuation of Project activities after donor funding ends. Some villages have also constructed birthing huts to improve conditions for the delivery of babies.

Contribution of human resources has not been a problem in PLAN's Project area probably because the villagers understand and appreciate the need for CS interventions. The contribution of fees for services has been a problem in PLAN's priority areas precisely because the areas were chosen where the population is least able to afford health services.

#### F. Ability/Willingness of Counterpart Institutions to Sustain Activities

BECIS, a local NGO under contract with PLAN, conducted health related studies in three Project villages. Globe-Contact another local NGO has assisted PLAN with education and training at the village level. Kûnefone a local consulting agency in Bamako provided the personnel to conduct this evaluation.

A long, close and successful relationship exists between the District Health Department and PLAN/Banamba in the conduct of vaccination services. PLAN provides funding for operational costs and the Health District provides the human resources. This linkage has expanded its pooling of resources to conduct IEC and training activities in the villages.

PLAN may continue to engage BECIS and Globe-Contact to help sustain Project activities.

As with PLAN and members of the communities, the local MOH perceives all CS interventions to be effective with vaccination services being the most pronounced.

PLAN supported training of MOH staff in community development and CS interventions. PLAN has engaged and supported non-government health personnel in fixed centers to conduct CS outreach activities at the village level.

The local MOH has human resources that could help sustain some Project activities after funding ends. However, financial and material resources that are presently being provided by UNICEF and PLAN would not otherwise be available in the District of Banamba. Local NGOs would also have to identify material and financial resources.

G. Project Expenditures

See Annex 5, Project Pipeline Analysis.

H. Attempts to Increase Efficiency

PLAN/Banamba has been undergoing staff reductions in the field during the past year to reduce program costs. Supporting local MOH personnel to provide improved vaccination services increases Project productivity and efficiency. Supporting local non-government health personnel to conduct CS activities including training and IEC in the villages is considered cost effective, productive and efficient.

This strategy is judged to be successful because, in this instance, it makes sense.

It would seem that if not already the case, NGOs involved in CS activities elsewhere would be well advised, if conditions are favorable, to promote the same strategy of NGO and MOH collaboration as that found in Banamba.

I. Cost Recovery Attempts

As mentioned under Section C. the MOH and PLAN/Banamba initiated fees for service in the fixed health facilities to help support non-government health workers ("matrones" and "aide soignants" who provide IEC and other outreach services to the villages. Though the fee appeared to be minimal (approximately \$1.00) it was evidently too high for the less endowed pilot villages and, as a result, attendance at the facilities dropped off significantly. The end result was fees for services were dropped and the workers were provided per diem for outreach services.

The dollar amount of cost recovery obtained during the trial period was minimal compared to overall project costs. The cost recovery mechanism did not generate enough money to justify the effort and funds required for implementation.

The cost recovery attempt probably did not damage PLAN's reputation. However, in the very recent past PLAN was expected to pay for community projects with minimal community contribution. This image is beginning to change.

Rather than the cost recovery effort causing inequity of service, attendance dropped off instead. When mothers were asked if they ever did not receive health services because they had to pay, 20% responded yes.

J. Household Income Generation

The Project did not implement any household income-generating activities.

K. Summary of Sustainability

PLAN's accomplishments in enabling the communities to meet their basic needs and in promoting sustainability of effective child survival activities were:

assisting villages to establish 34 village health committees

training 150 village health workers

promoting health information, education and communication (IEC) activities in 200 villages

Sponsoring training and refresher courses in nutrition education, immunization services, oral rehydration therapy, and malaria treatment for 65 MOH personnel

PLAN, in the beginning of its CS efforts in the late 1980s, was not concerned with sustainability. Nor was it overly concerned about sustainability when preparing its 2nd CS Project Proposal. However, following the progression of the 2nd CS Project as is necessary during a final evaluation, one sees the transition in PLAN's thoughts, actions and competence in carrying out its sustainability promoting activities.

The culmination of this change is no better expressed than in PLAN's own Programme Strategy document for FY 1994 through FY 1996:

"PLAN/Mali's ideal is to enable communities to take charge of their own development."

"....PLAN must be careful not to disable communities through misplaced generosity or an underestimation of what they are capable of doing for themselves."

"In the period FY94-96 sustainability will be an important consideration in project support."

"An emphasis on community participation is the realisation of PLAN/Mali's concern with community empowerment. Communities must share significantly in every stage of the project action...."

Child survival activities have continued since the end of the Project in August 1993 and will continue, with changes in strategy and funding (PLAN assuming all funding), well into the foreseeable future. PLAN's support to the vaccination program will probably continue as long as PLAN is in Banamba.

To imagine that vaccination services might be sustainable in developing countries such as Mali without help from international agencies such as UNICEF, PLAN International, USAID, Rotary and others is not reasonable.

However, the information, education and communication (IEC) aspects of PLAN's CS is an activity which communities can sustain. Informing villagers about how diseases are spread and what they can do to prevent them, teaching villagers correct nursing and nutritional practices to make their children healthier, and helping them organize their own literacy classes so that they themselves can become better informed are activities which can be sustained and reasonable to assume so. These activities, when properly pursued, are of themselves self-sustaining.

Evaluation team members and the writer of this report are listed in the METHODOLOGY section, pages 5 and 6, of this final evaluation.

## X. LESSONS LEARNED

1. Perhaps the most important observation or lesson learned from this Project is the excellent return per dollar spent in PLAN's assisting the Banamba District Health Department to deliver vaccination services district-wide for approximately \$20,000 (perdiem, fuel, vehicle maintenance and replacement costs) per year. Of the approximate 6,000 infants and 24,000 child-bearing-age women targetted for vaccination services, well over 80% of each group received one or more vaccinations. In addition to UNICEF's costs for vaccines and MOH's personnel costs, PLAN/Banamba contributed about \$3 each to have 2,520 children completely vaccinated before their first birthday and \$1 each to have 14,160 child-bearing-age women receive two tetanus toxoid vaccinations.

2. As in most developing countries, most of Mali's very limited Ministry of Health budget goes to personnel support and very little toward functioning costs. Therefore, PLAN/Banamba's strategie of providing equipment, supplies, and operating funds to MOH/Banamba helps expand and improve health services while keeping PLAN's personnel costs to a minimum. The people of Mali reap the benefits.

3. PLAN/Banamba attempted to initiate fees for service in the fixed health facilities to help support non-government health workers ("matrones" and "aides soignant") who provide IEC and other outreach services to the villages. Though the fee appeared to be minimal (approximately \$1.00) it was evidently too high for the less endowed pilot villages and, as a result, attendance at the facilities dropped off significantly. As a solution, fees for services were dropped and the workers were provided perdiem for outreach services.

## XI. RECOMMENDATIONS:

1. PLAN should continue to provide vaccination assistance to the District Health Department of Banamba.
2. PLAN should carry on its support to the Banamba District Department of Health in its continuation of other Child Survival activities. As with PLAN's vaccination support, PLAN should continue to support Ministry of Health (MOH) and non-government personnel in fixed health facilities (mobyettes, fuel, perdiem) so that they can train, assist and supervise village health workers (VHWs) in surrounding villages.
3. All PLAN's health activities should be coordinated with the Banamba District Medical Officer and his staff and any PLAN related health reports, no matter who generates them, should be shared by both parties.
4. PLAN should assist MOH develop a simple, one-page activity report (4-copy NCR [no carbon required]) form to be submitted by the VHW and/or village health committee (VHC) to the medical chief of the arrondissement on a monthly basis. One copy remains in the village, three copies to the arrondissement health facility of which two are to be forwarded to the District level -- one for the Health Department and one for PLAN/Banamba. (see tables 5 & 6)
5. PLAN should promulgate more actively the Ministry of Health's official policy of promoting: 1) breast-feeding of newborns as soon after birth as possible; 2) exclusive breastfeeding of infants up to four months of age whenever possible; 3) beginning weaning of infants between four and six months; 4) and continued breastfeeding with food supplement up to 24 months of age.
6. Infants vaccinated against measles before nine months of age should be revaccinated at nine months or older with a minimum of one month interval between vaccinations.
7. PLAN should continue and expand, if possible, the community tracking system (CTS). Persons responsible for the registers should be taught vaccination schedules, time intervals between vaccinations, and correct ages for vaccinations in order to know when children need follow-up visits.
8. With the provision of medical kits to villages, village health workers must be well trained, supervised and periodically tested to assure competency in dispensing the select medications.
9. The practice of providing malaria chemoprophylaxis to children under five years of age should be discontinued. The time, effort and expense consumed on providing prophylaxis should be re-directed toward making anti-malarial drugs available in the district to as many people as possible needing treatment for malaria.
10. In continuation of CS activities in Banamba, it is critical that the person being recruited as PLAN's CS coordinator have adequate experience in public health management and administration.

ANNEX 1  
Persons and Places Visited

ANNEX 1. PLACES AND PERSONS VISITED

PLAN INTERNATIONAL, PROVIDENCE, RHODE ISLAND

Dr. Luis Tam, Child Survival Coordinator  
Ms. Karla Steele, USAID Grants Coordinator

PLAN NATIONAL/BAMAKO, MALI

Mr. John Chaloner, Country Director  
Mr. Terence McCaughan, Projects Director  
Mr. Reynald Chatelain, Projects Director  
Dr. Nouhoum Koita, Ex-CS Project Director (now in PLAN/Kati, Mali)

PLAN/BANAMBA, BANAMBA, MALI

Mr. Amadou Bocoum, Program Head  
Mr. Nouhoum Diakité, Administrator  
Mr. Boua Koné, Head of Donor Services  
Mr. Koulou Diara, Supervisor of Health Animators  
Mr. Alassane Bah, Health Animator  
Mr. Abdoulaye Koumgoulba, Health animator  
VHC Members, VH Workers and Beneficiaries

MINISTRY OF HEALTH, KOULIKORO REGION, MALI

Dr. Salif Samaké, Regional Medical Director  
Dr. Lassana Keita, District Health Officer, Banamba  
Mr. Mamadou Tounkara, District Nurse, Banamba  
Mr. Nampou Sonogo, District Nurse, Banamba

MINISTRY OF HEALTH, BAMAKO, MALI

Dr. Philippe Dembele, Director, Division of Epidemiology  
Dr. Sidi Konaré, Director, National Immunisation Center  
Dr. Amadou Coulibaly, Asst. Director, National Immunization Center  
Dr. Abdramane Sidèye Maiga, Coordinator, National Malaria Program

USAID/BAMAKO

Ms. Dorothy Stephens, Technical Advisor for AIDS and Child Survival

UNIVERSITY OF MALI, BAMAKO, MALI

Professor Ogobara Doumbo (malaria studies)

UNICEF/BAMAKO

Dr. Abdel El Abassi, Administrator, Health Programs

ANNEX 2  
Documents Reviewed

## ANNEX 2. DOCUMENTS REVIEWED

1. Baseline Data Survey, 1989, PLAN/Banamba
2. Evaluation of The Foster Parents Plan CS II Project/Banamba, 1989
3. Project proposal, 1990, PLAN/Banamba Child Survival Project
4. National Vaccination Coverage Report, 1990, Mali
5. Detailed Implementation Plan, 1991, PLAN/Banamba Child Survival Project
6. First Annual Report, 1991, PLAN/Banamba Child Survival Project
7. A Summary of PLAN/Banamba Child Survival Programme, 1991
8. Plan of Action for the PLAN/Banamba CS VI Project, 1992
9. Mid-Term Evaluation Report, 1992, PLAN/Banamba Child Survival Project
10. Comments by PLAN/IH CS Coordinator on Mid-Term Evaluation Report, 1992
11. PLAN International's First Experience in Supporting EPI in Mali, 1992
12. Third Annual Report, 1993, PLAN/Banamba Child Survival Project
13. Status Report on PLAN/Banamba's CS Project, 1993
14. PLAN/Mali Programme Strategy, 1993
15. Evaluation of Village Health Committees, 1994, PLAN/Banamba
16. Sector Programme Outline, 1994, PLAN/Mali
17. Trip Reports by PLAN International CS Coordinator
18. Monthly Activity Reports by Health Animators, PLAN/Banamba

ANNEX 3  
Sommaire, Leçons, Recommandations  
et  
Tables en Français

## LE PROJET SURVIE DE L'ENFANT DU PLAN INTERNATIONAL-BANAMBA, MALI

EVALUATION FINALE - JUIN 1994.

L'évaluation finale du Projet Suivie de l'Enfant/Mali dans le cercle (District) de Banamba, Mali, a été faite du 16 mai au 8 juin, 1994. L'évaluation de la non-participative\* a été effectuée par une équipe de six surveillants, trois superviseurs, deux secrétaires, une personne chargée de la logistique, quatre chauffeurs - tous contractés à travers un GIE local privé au Mali appelé KUNAFONI Services - et un consultant expatrié en Santé publique.

L'équipe d'évaluation a fait deux enquêtes de 30 grappes chacune sur la couverture vaccinale afin de faire une comparaison entre la couverture vaccinale dans le cercle entier (pop. 120 000) et les 63 villages pilotes du Plan avec une population totale de 30 000. Les villages pilotes sont ceux qui ont reçu du PLAN de Banamba un soutien supplémentaire dans le domaine de la santé, l'éducation et la mobilisation, qui ont financé les animateurs sanitaires (6) et les agents de santé travaillant dans les centres de santé. S'il vous plaît notez bien que toutes les activités de vaccination dans le district sont supportées par le PLAN (carburant, véhicules, perdiem, support de conservation du vaccin [la chaîne de froid]) et sont effectuées par le Ministère de la Santé.

L'équipe a aussi recensé cinq des dix villages-testes où les noms, le statut de vaccination et de nutrition des enfants sont notés dans les registres. Cela constitue une stratégie relativement nouvelle (1992) pour accroître la couverture vaccinale et améliorer le statut nutritionnel des enfants mal nourris. Les mères des enfants qui ne sont pas ponctuelles à la vaccination et/ou au suivi de la nutrition sont visitées à domicile pour les rappeler que leurs enfants ont besoin de plus d'attention.

La couverture vaccinale dans le cercle de Banamba est très bonne. Une analyse des instruments de l'enquête suggère que le projet a surpassé la plupart de ses objectifs révisés par l'évaluation à mi-parcours. Les enfants âgés entre 12 et 23 mois portant les cicatrices de la vaccination du BCG était de 84% ainsi opposé à l'objectif de 94%. , mais le DTCoq/polio3 était plus de 55% ainsi opposé à l'objectif de 45%. L'objectif de la rougeole de 50% a été dépassé de plus de 5%, mais peu diminuerait avec l'analyse du programme COSAS à l'ordinateur.

*\* une participation limitée des personnes concernés par les activités du projet.*

Seulement 58% des femmes à l'âge de procréer (15 -44 ans) ont reçu deux vaccinations anti-tétaniques selon leur carte de vaccination, mais 75% d'elles ont reçu deux vaccinations selon l'histoire. L'objectif était de 80%.

A peu près la moitié de ces femmes ont reçu une 2ème vaccination ou une vaccination de renfort pendant leur dernière grossesse protégeant ainsi leur bébé contre le tétanos-néonatal. (voir tableau 1 - Tableau de vaccination)

L'équipe a remarqué que la couverture vaccinale dans le district entier était meilleure à celle des 63 villages pilotes (peut-être parce que les villages pilotes sont plus dépeuplés et moins nantis) et que la couverture vaccinale pour les enfants était la meilleure dans les villages-testes, comme attendu. Bien que l'équipe trouve la population totale des villages-testes (approximativement 4000) est trop petite pour faire une comparaison fiable avec les autres, il est néanmoins recommandé que si la moyenne existe, à continuer et élargir cette pratique.

La couverture vaccinale aurait été considérablement élevée si l'âge minimum de neuf mois avait été respecté au moment de vacciner les enfants contre la rougeole. Certaines de ces vaccinations précoces auraient été faites pour prévenir pendant des périodes d'épidémies de rougeole. Dans de tel cas une vaccination répétée est nécessaire pour assurer une bonne protection de l'enfant, réduire les cas de rougeole parmi les vaccinés, et pour éviter de mettre en doute l'efficacité du vaccin anti-rougeoleux.

La raison la plus courante que les mères avancent pour la non-vaccination de leurs enfants était "vaccinateur absent" (24%). Plus des 3/4 de toutes les raisons avancées, y compris "vaccinateur absent", se sont trouvés dans la grande catégorie des "obstacles". Seulement 2% des raisons a été dû "au manque de motivation" bien que 21% a été expliqué par un "manque d'information".

La conservation du vaccin dans le District de Banamba est meilleure à celle de la plupart des régions observées par le consultant durant ses années d'expériences en PEV. Nos félicitations au personnel sanitaire du District et à l'assistance du PLAN. Le manque de vaccin s'est produit dans le District mais pendant une courte durée et n'a pas été fréquent. L'inventaire du vaccin a été exact.

L'équipe a aussi préparé un questionnaire de deux pages (28 questions) pour évaluer les connaissances, attitude et pratiques (CAP) des mères sur les vaccinations, nutrition, paludisme, la lutte contre les maladies diarrhéiques et l'espacement des naissances. Il a été encourageant d'apprendre que 60% des mères savait que les vaccins devaient prévenir et non guérir; que 70% des mères ayant des enfants âgés entre 12 et 24 mois continuer l'allaitement maternel; et que plus de 70% des mères chercheraient assistance si leur enfant était déshydraté ou atteint de fièvre ou de paludisme. (voir Tableau 2)

D'autre part c'était décevant de trouver que beaucoup moins de la moitié des mères ne savait que quatre à cinq visites sont nécessaires pour vacciner complètement leur enfant et que la vaccination contre la rougeole doit être faite à partir de neuf mois; que seulement 39% des mères commençait à allaiter les nouveaux-nés immédiatement après la naissance; que plus de la

moitié des enfants cibles avait la diarrhée pendant les 15 derniers jours; et que plus que 75% des mères ignorait la cause du paludisme.

L'étude de KAP a montré que 30% des enfants a l'âge de 12 a 23 mois ont pri le nivaquine comme chemoprophylaxie contre le paludisme pendant le saison du plui. Prophylaxie contre le paludisme est contre le politique du Ministere de Santé et devrait etre discontinué.

Une interview de 19 agents de santé villageois a été conduite afin de savoir leurs connaissances des messages d'éducation sanitaire qu'ils promouvoient dans les villages. Ils savent bien l'objectif des vaccinations et que pour vacciner les femmes contre le tétanos il faut plus qu'une vaccination. De manière ironique les mères ont battu les ASV en connaissances de pratiques de l'allaitement des enfants diarrhéiques et aussi elles savent mieux qu'elles doivent chercher assistance quand leurs enfants sont déshydratés. (voir tableau 3)

Les trois animateurs sanitaires restants (au départ ils étaient six) ont su répondre à toutes les mêmes 13 questions posées aux agents de santé villageois. Ces animateurs restants finiront leur contrat (qui ne sera pas renouvelé) en fin juin 1994. Un coordonateur sera recruté pour aider le responsable du PLAN/Banamba afin d'effectuer les activités de la survie de l'enfant et autres activités relatives à la santé.

Un examen des comités de santé villageois a bel et bien confirmé les résultats de l'évaluation interne de janvier 1994. A l'exception de quelques uns les comités ne comprennent pas leurs rôles, ils sont mal organisés, ne sont pas très actifs et ont besoin de rajeunissement. (en janvier il y avait des comités dans 34 villages qui représentent 62% des 55 villages cibles pendant le projet de la survie de l'enfant. PLAN/Banamba a déjà commencé d'aider les villages soit dans le recyclage, ou dans le remplacement et dans la formation de nouveaux membres de leurs comités de santé. (voir tableau 4)

L'esacement des naissances, le recouvrement du coût, et la génération de revenu ne faisaient pas partie des domaines d'interventions CS du Plan/Banamba.

#### PERENNITE

Les activités de la Survie de l'Enfant ont continué depuis la fin du projet en Août 1993 et elles continueront bien, avec des changements dans la stratégie et dans le financement (le PLAN s'occupant de tout financement) jusqu'à un future prévisible. Probablement le soutien du PLAN au programme de vaccination continuera aussi longtemps que le PLAN opère à Banamba.

Il n'est pas raisonnable de penser que les services de vaccination pourraient être soutenus dans les pays en voie de développement tel le Mali sans

l'assistance des agences internationales tels l'UNICEF, le PLAN International, l'USAID, Le Rotary et autres.

Cependant, les activités telles qu'informer les villageois sur les modes de propagation et de prévention des maladies, leur apprendre les pratiques appropriées de l'allaitement et de la nutrition afin de donner une bonne santé à leurs enfants, et les aider à organiser leurs cours d'alphabétisation afin qu'ils soient eux-mêmes mieux informés, constituent réellement des activités qui peu être maintenu et ces raisonnable a l'attendre. Ces activités, si proprement poursuivies, sont en elles-mêmes auto-suffisantes.

#### LES LEÇONS A TIRER

1. Peut-être l'observation ou la leçon la plus importante apprise à travers ce Projet est l'excellente réalisation effectuée par ce depense minimum de dollar pour aider le Ministère de la Santé (MS) du District de Banamba afin de favoriser une bonne couverture vaccinale dans tout le District. Le coût est approximatif de 20 000 \$ (perdiem, carburant, maintenance des véhicules et les coûts de remplacement) par an.

2. Comme dans beaucoup de pays en voie de développement, la majeure partie du budget très restreint du Ministère de la Santé va dans le support du personnel et très peu sert de coûts de fonctionnement. De ce fait, la stratégie du PLAN/Banamba qui consiste à fournir de l'équipement, des approvisionnements, et des fonds de roulement à MOH/Banamba, aide à répandre et à améliorer les services de santé tout en limitant les coûts du personnel du PLAN à un minimum. La population du Mali en récolte les bénéfices.

3. PLAN/Banamba a essayé de générer des fonds pour les travailleurs des centres de santé afin d'aider à supporter les agents de santé qui ne sont pas dans la fonction publique (les accoucheuse traditionnelles et les aides-soignants) qui s'occupent des services d'IEC et d'autres activités dans les villages. Bien que la payement pour une consultation semblait être minime (approx. 1.00 \$) elle a été trop élevée pour les villages pilotes moins nantis et, comme conséquence, la fréquentation des centres de santé diminua de manière significative.

#### LES RECOMMANDATIONS

1. Le PLAN continue de fournir son concours à la vaccination au Ministère de la Santé (MS) du District de Banamba.

2. Le PLAN maintient son support au MS du District tout comme les autres activités de la Survie de l'Enfant. Le PLAN doit aider (mobylettes, carburant, perdiem) le personnel des centres de santé afin qu'il puisse former, aider et superviser les ASVs des villages environnants.

3. Tous les activités de santé du PLAN devrait coordonnée avec le médecin chef du District et tous les rapports des activités de santé du PLAN quels que soient leurs auteurs doivent être partagés par toutes les deux parties.

4. Le PLAN doit aider le MS à élaborer un simple rapport d'activité d'une page (4 - copie NCR [le carbone n'est pas demandé] que les ASV et/ou les comités (CSV) doivent soumettre régulièrement chaque moi au chef médical de l'arrondissement. Une copie reste au niveau du village, trois copies déposée au niveau de l'arrondissement, dont deux au niveau du District -- l'une pour le Medecin Chef de Cercle et l'autre pour le PLAN/Banamba. (voir tableaux 5 et 6)

5. PLAN devrait promulguer de manière plus active la politique officielle du Ministère de la Santé de promouvoir: 1) l'allaitement maternel des nouveaux-nés aussitôt que possible, 2) l'allaitement maternel exclusif des nourrissons jusqu'à l'âge de quatre mois chaque fois que cela est possible; 3) commencer le sevrage entre l'âge de quatre et six mois; 4) continuer l'allaitement avec le supplément de nourriture jusqu'à l'âge de 24 mois.

6. Les nourrissons vaccinés contre la rougeole avant l'âge de neuf mois doivent être revaccinés à partir de l'âge de neuf mois avec une période minimale d'un moi d'intervalle.

7. PLAN devrait continuer à promouvoir et élargir le système de suivi communautaire. et en même temps PLAN devrait faire apprendre aux personnes chargées de l'enregistrement: les calendriers de vaccination, les intervalles nécessaires entre les vaccinations, et les âges correctes pour les vaccinations, afin de savoir quand est-ce que les enfants doivent assister une scèance de vaccination.

8. Avec le ravitaillement des villages en trousse medicale, les ASVs doivent être bien formés, supervisés, et périodiquement testés afin d'assurer leur compétence dans la dispense des médicaments anti-paludismes et d'autres.

9. Nous devrions mettre fin à la pratique qui consiste à administrer aux enfants âgés <5 ans la chemoprophylaxie du paludisme. Le temps, l'effort et le coût consentis pour faire la prophylaxie devraient être reorientés dans le sens de rendre disponibles les médicaments anti-paludismes à tant de personnes que possible ayant besoin du traitement du paludisme.

10. Avec la continuation des activités CS a Banamba, il est essentiel que le personne recruté comme coordonateur/CS a l'experience en gestion et administration santé publique.

PLAN/BANAMBA - COMPARAISON DES RESULTATS & OBJECTIFS - JUIN 1994

TABLEAU 1 VACCINATION DES ENFANTS AGES ENTRE 12 - 23 MOIS

|   | 1989<br>LIGNES DE<br>BASE DE<br>L'ENQUÊTE | 1992<br>OBJECTIFS<br>REVISES AU<br>MI-TERM | 1994<br>TOUT LE<br>DISTRICT | 1994<br>VILLAGES<br>(63)<br>PILOTES | 1994<br>VILLAGES<br>(10)<br>TESTE |
|---|---|--|-----------------------------|-------------------------------------|-----------------------------------|
| ENFANTS AVEC<br>CARTES                  | 57%                                       | 85%  | 86%                         | 84%                                 | 92%                               |
| BCG                                     | 57%                                       |  | 85% CARTE<br>91% HIST.      | 81% CARTE<br>91% HIST.              | 92% CARTE<br>95% HIST.            |
| CICATRICE BCG                           | 75%                                       | 94%  | 84%                         | 75%                                 | 94%                               |
| DTCoq/POLIO-1                           | 54%                                       |  | 82% CARTE<br>87% HIST.      | 76% CARTE<br>89% HIST.              | 92% CARTE<br>95% HIST.            |
| DTCoq/POLIO-3                           | 18%                                       | 45%  | 59% CARTE<br>64% HIST.      | 55% CARTE<br>60% HIST.              | 68% CARE<br>70% HIST              |
| ROUGEOLE                                | 35%                                       | 50%  | 59% CARD<br>63% HIST.       | 56% CARTE<br>65% HIST.              | 62% CARTE<br>68% HIST.            |
| COMPLETEMENT<br>VACCINES                | 15% CARD                                  | 30%  | 52% CARTE                   | 46% CARTE                           | 54% CARTE                         |
| COMPLETEMENT<br>VACCINES<br>AVANT UN AN |   | 30%  | 42% CARTE                   | 37% CARTE                           | 30% CARTE                         |
| REÇU VIT-A au<br>moins une fois         |   | 70%  | 28%                         | 21%                                 | 24%                               |

LES VACCINATIONS DES FEMMES (AGEES ENTRE 15 ET 44 ANS) CONTRE LE TETANOS

| Carte/Oui |     |     | 64%                    | 63%                    | 51%                    |
|-----------|-----|-----|------------------------|------------------------|------------------------|
| Tetanos.1 |     |     | 62% Carte<br>83% Hist. | 58% Carte 82%<br>Hist. | 51% Carte<br>70% Hist. |
| Tetanos.2 | 55% | 80% | 59% Carte 74%<br>Hist. | 58% Carte<br>76% Hist. | 49% Carte<br>62% Hist. |
| Tetanos.3 |     |     | 42% Carte<br>50% Hist. | 51% Carte<br>61% Hist. | 43% Carte<br>51% Hist. |
| Tetanos.4 |     |     | 25% Carte<br>29% Hist. | 34% Carte<br>38% Hist. | 32% Carte<br>38% Hist. |
| Tetanos.5 |     |     | 11% Carte<br>14% Hist. | 16% Carte<br>19% Hist. | 8% Carte<br>19% Hist.  |

\* A peu près la moitié des nouveaux-nés ont été vaccinée contre le tetanos prénatal.

TABLEAU 2 - EF - JUIN 1994 - COMPARAISON DE REPONSE KAP DES MERES PAR STRATEGIES

POURCENTAGE DES MERES AYANT DES ENFANTS AGES ENTRE 12-23 MOIS  
QUI ONT SÛ REPONDRÉ AUX QUESTIONS CS SUIVANTES:

|  | DISTRICT<br>DE<br>BANAMBA* | VILLAGES<br>PILOTES<br>(63) ** | VILLAGES<br>TESTES<br>(10) *** |
|--|----------------------------|--------------------------------|--------------------------------|
| Quel est le but de la vaccination?   | 60%                        | 62%                            | 72%                            |
| Combien de visites faut-il pour vacciner un enfant?                          | 34%                        | 20%                            | 24%                            |
| Quel est l'âge minim. pour vac. un enfant contre la rougeole                 | 19%                        | 9%                             | 19%                            |
| Pour quoi faut-il vacciner les femmes contre le tétanos?                     | 49%                        | 39%                            | 48%                            |
| Plus qu'une vaccination contre le tétanos suffit-il?                         | 57%                        | 57%                            | 66%                            |
| Le nouveau-né doit-il être directement allaité après la naiss?               | 39%                        | 38%                            | 25%                            |
| Votre enfant tète-il encore?   | 76%                        | 71%                            | 62%                            |
| Votre enfant continuera-t-il à téter jusqu'à l'âge de 24 mois                | 42%                        | 47%                            | 28%                            |
| Le supplément nourriture à l'enfant entre l'âge de 4-6 mois?                 | 32%                        | 29%                            | 21%                            |
| Votre enfant a-t-il eu la diarrhée pendant les 15 derniers jours             | 52% yes                    | 46% yes                        | 38% yes                        |
| Augmenter la liquide/nourriture en période de diarrhée?                      | 62%                        | 52%                            | 83%                            |
| Donner le lait maternel à l'enfant quand il a la diarrhée?                   | 70%                        | 69%                            | 72%                            |
| Décrivez un signe de déshydratation?   | 52%                        | 49%                            | 55%                            |
| Décrivez deux signes de déshydratation?                                      | 17%                        | 21%                            | 17%                            |
| Cherchez-vous assistance quand votre enfant est déshydraté?                  | 79%                        | 61%                            | 59%                            |
| Les médicaments anti-palu sont-ils disponibles dans votre village            | 43% yes                    | 37% yes                        | 21% yes                        |
| Cherchez-vous assistance quand votre enfant est atteint de paludisme/fièvre? | 80%                        | 65%                            | 66%                            |
| Prenez-vous des médicaments anti-palu quand vous êtes enceinte               | 52%                        | 44%                            | 28%                            |
| Vos enfants prennent-ils des médicaments anti-palu en hivernage?             | 30%                        | 40%                            | 41%                            |
| Comment attrape-t-on le paludisme?   | 17%                        | 20%                            | 38%                            |
| Citez 1 moyen pour éviter les piqûres de moustiques?                         | 48%                        | 43%                            | 45%                            |
| Citez 2 moyens pour éviter les piqûres de moustiques?                        | 28%                        | 32%                            | 21%                            |
| Comprenez-vous la contraception?   | 38%                        | 31%                            | .7%                            |
| Citez 1 méthode de la contraception?   | 16%                        | 13%                            | .7%                            |
| Citez 2 méthodes de la contraception?  | 13%                        | 10%                            | .3%                            |
| N'avez-vous jamais reçu d'assistance parce que le service était payant       | 19% yes                    | 21% yes                        | 25% yes                        |

\* 236 mères ont répondu; \*\* 233 mères ont répondu; \*\*\* 29 mères de 5 villages ont répondu

TABEAU 3

PLAN/BANAMBA LE PROJET SURVIE DE L'ENFANT

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EVALUATION FINALE-JUIN 1994-COMPARAISON DES REponses KAP DES ASVs PAR STRATEGIES

| POURCENTAGE DES AGENTS DE SANTE VILLAGEOIS QUI ONT SU REpondre AUX QUESTIONS SUIVANTES: | DISTRICT * DE BANAMBA | Villages** pilotes, 63 | VILLAGES** TESTES, 10* |
|---|-----------------------|------------------------|------------------------|
| Quel est le but de la vaccination?  | 100%                  | 95%                    | 100%                   |
| Nombre de visites nécessaires pour vacc. un enfant?                                     | 67%                   | 12%                    | 0%                     |
| A quel l'âge doit-on vac.l'enfant contre la rougeole                                    | 89%                   | 69%                    | 0%                     |
| Pourquoi vaccine-on les femmes contre le tetanos?                                       | 78%                   | 87%                    | 100%                   |
| Une vaccination contre le tetanos suffit-il?  | 100%                  | 95%                    | 100%                   |
| Le supplément de nourrit. doit-il être donné à l'enfant entre l'âge de 4-6 mois?        | 89%                   | 68%                    | 0%                     |
| Augmenter la liquide/nourriture pendant la diarrhée?                                    | 100%                  | 79%                    | 100%                   |
| Faut-il continuer à allaiter l'enfant pend. diarrhée                                    | 33% OUI               | 35% OUI                | 100% OUI               |
| Décrivez deux signes de déshydratation?   | 83%                   | 55%                    | 100%                   |
| Cherchez-vous assist.quand l'enfant est déshydraté?                                     | 67%                   | 50%                    | 100%                   |
| Cherchez-vous assistance quand votre enfant est atteint de paludisme/fièvre?            | 94%                   | 29%                    | 100%                   |
| Comment attrape-t-on le paludisme?  | 89%                   | 89%                    | 100%                   |
| Citez deux moyens d'éviter les piqûres de moustiques                                    | 89%                   | 89%                    | 100%                   |

\* 7 Agents de Santé Villageois, \*\* 15 ASV, \*\*\* 2 ASV

TABLEAU 4 LES RESULTATS DES INTERVIEWS DES COMITES DE SANTE VILLAGEOIS

|  | District de Banamba * | Villages ** Pilotes (63) | Villages Testes (10) *** |
|--|-----------------------|--------------------------|--------------------------|
| Nombre moyen par comité                | 9                     | 5                        | 6                        |
| % des membres élus par le comité       | 78%                   | 42%                      | 100%                     |
| Pourcentage existant depuis 1992       | 11%                   | 38%                      | 100%                     |
| Pourcentage des réunions mensuelles    | 12%                   | 25%                      | 100%                     |
| Pourcentage du moi dernier             | 12%                   | 46%                      | 100%                     |
| % des com. dressant des procès verbaux | 44%                   | 23%                      | 100%                     |
| % des comités resolvant des problèmes. | 67%                   | 62%                      | 100%                     |
| % des com.voulant continuer d'exister  | 100%                  | 92%                      | 100%                     |

\* 9 Comités interviewés; \*\* 13 Comités interviewés; \*\*\* 2 Comités interviewés

CERCLE DE BANAMBA

TABLEAU 5

RAPPORT MESUEL DE SANTE VILLAGEOISE

(Village)

(Arrondissement)

(Moi)

(mettez des tirets dans cette colonne)

|   |  |
|---|--|
| Nombre de naissances par moi  |  |
| Nombre de décès par moi   |  |
| Cause(s) supposées des décès<br>(A remplir par le personnel sanitaire)                                      |  |
| Nombre de personnes traitées contre le palu./fièvre   |  |
| Nombre de personnes traitées contre la diarrhée   |  |
| Nbre de pers. envoyés au c.s par l'agent de santé   |  |
| Nbre d'enfants agés de 9 mois ou plus ayant besoin de la vaccination contre la rougeole                     |  |
| Nbre d'enfants manifestant des symtomes de malnutrition (ventre ballonné, cheveux effilés et/ou roux, etc.) |  |
| Nbre de réunions tenues par le comité du c.s.comm.  |  |
| Nbre de visites de supervision effectués par le c.s   |  |

INVENTAIRE DES EQUIPEMENTS SANITAIRES

| RUBRIQUES     | REÇUS | DISPONIBLES | DISTRIBUES | BALANCE |
|---------------|-------|-------------|------------|---------|
| chloroquine   |       |             |            |         |
| aspirine      |       |             |            |         |
| packets d'ORS |       |             |            |         |
| anti-parasite |       |             |            |         |
| vitamine-A    |       |             |            |         |
|               |       |             |            |         |
|               |       |             |            |         |
|               |       |             |            |         |

(Nom de l'agent de santé villageois)

(Date)

TABLEAU 6

CERCLE DE BANAMBA

DUGU KENEYA KUNAFONI SEBE KALOLA

(Dugu)

(Arrondissement)

(Kalo)

(kala ti ni sira kônô)

|   |  |
|---|--|
| Banké diaté kalokônô  |  |
| Saya diaté kalokônô   |  |
| Saya sababouw<br>(dokotoroso dokotoro de kakan ka bolonô da ni jorola)                  |  |
| sumaja bakatô ani saji bakatô munuw fura kéra   |  |
| Kônôbôlibakatô munuw fura kéra  |  |
| Dugu dokotoro je banabakatô haké min bila kata dokotorosola                             |  |
| Deminséni haké munu si bé kalo kônôtôla wali o kôfé ni njoni boloti ka kan ka ké ula    |  |
| balokodjukuja tamasere bé deminséni munu la (kônôbaraba, ani/walima kunsiki blén, etc.) |  |
| Dugu kénéya comite je ladjé djoli ké  |  |
| Dokotorosow mokow ye koloshili djoliké  |  |

FURA DIATEMINE

| Fura            | MIN SÔRÔLA | MIM BE BOLOKORO | LADIENSENI | BALANCI |
|-----------------|------------|-----------------|------------|---------|
| chloroquini     |            |                 |            |         |
| aspirini        |            |                 |            |         |
| ORS foroko      |            |                 |            |         |
| banakisékélélan |            |                 |            |         |
| vitamini-A      |            |                 |            |         |
|                 |            |                 |            |         |
|                 |            |                 |            |         |
|                 |            |                 |            |         |

(Dugu dokotoro tókô)

(Dôn)

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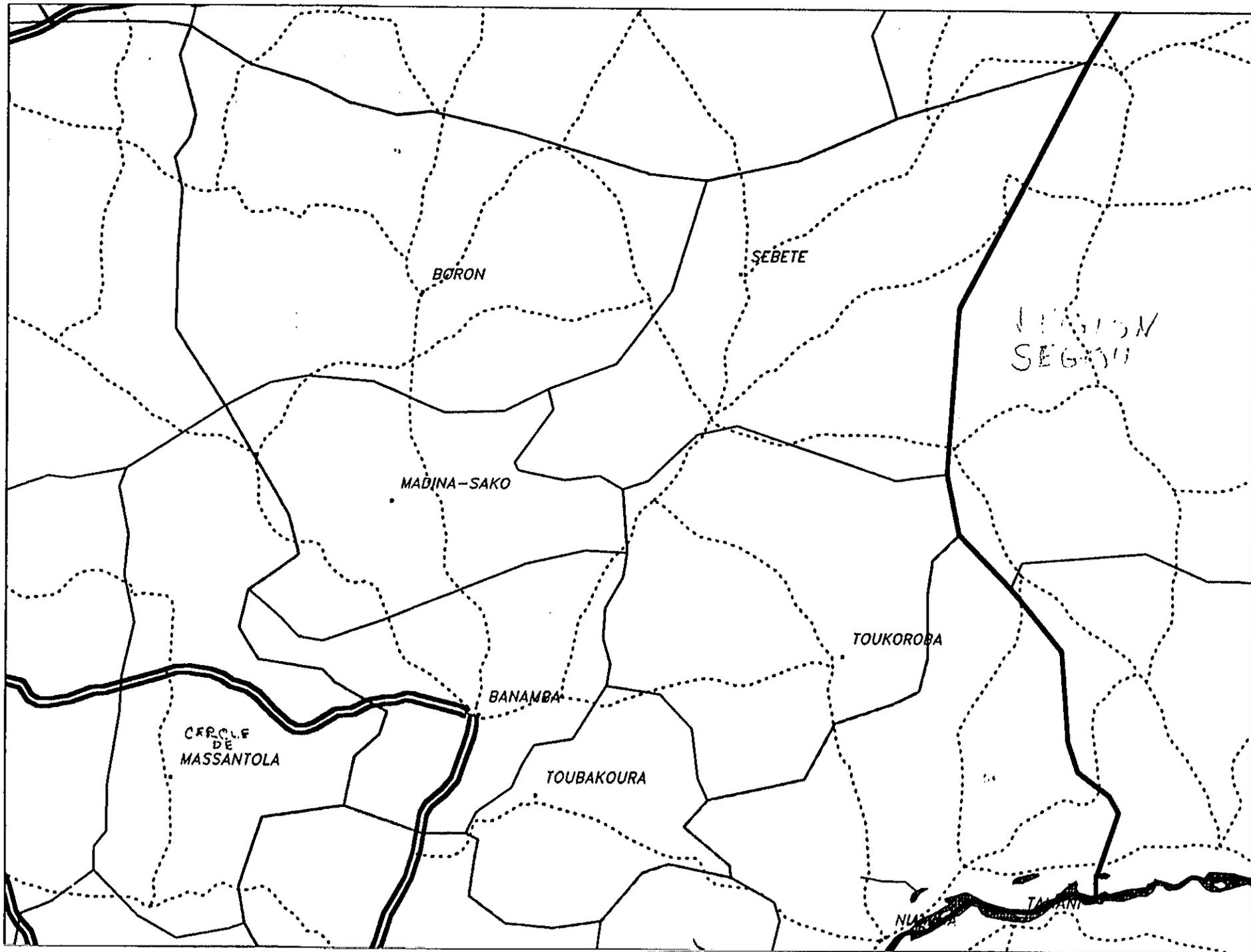
ANNEX 4  
Maps and List of Area Villages

| VCODE    | ARROND  | VILLAGE          | POP87 | POP91 | VCODE    | ARROND       | VILLAGE       | POP87 | POP91 |
|----------|---------|------------------|-------|-------|----------|--------------|---------------|-------|-------|
| 2BABA001 | BANAMBA | BABABOUGOU       | 566   | 616   | 2BABA041 | BORON        | KILIKON       | 130   | 144   |
| 2BABA026 | BANAMBA | BAKARIBOUGOU     | 308   | 335   | 2BABA042 | BORON        | KORON         | 200   | 221   |
| 2BABA051 | BANAMBA | BAMAROBOUGOU     | 583   | 635   | 2BABA043 | BORON        | KOSSALA       | 304   | 336   |
| 2BABA076 | BANAMBA | BANAMBA          | 9398  | 10229 | 2BABA044 | BORON        | KOULOUFARA    | 285   | 315   |
| 2BABA101 | BANAMBA | BENIENI          | 355   | 386   | 2BABA045 | BORON        | KOUROKORODJI  | 350   | 387   |
| 2BABA126 | BANAMBA | BOUALA           | 372   | 405   | 2BABA046 | BORON        | MARIBOUGOUB   | 325   | 359   |
| 2BABA151 | BANAMBA | BOUGOUNINA       | 457   | 497   | 2BABA047 | BORON        | MARIBOUGOU-F  | 262   | 290   |
| 2BABA176 | BANAMBA | DISSAN           | 430   | 468   | 2BABA048 | BORON        | MARIKONA-BAM  | 338   | 374   |
| 2BABA201 | BANAMBA | DANKOLA          | 263   | 286   | 2BABA049 | BORON        | M'BAREBOUGO   | 155   | 171   |
| 2BABA226 | BANAMBA | DIANGALAMBOUGOU  | 281   | 306   | 2BABA050 | BORON        | NGABAKORO-TO  | 92    | 102   |
| 2BABA251 | BANAMBA | DIASSANI         | 420   | 457   | 2BABA051 | BORON        | NGABAKORO-TO  | 257   | 284   |
| 2BABA276 | BANAMBA | DIATROUBOUGOU    | 130   | 142   | 2BABA052 | BORON        | NYAMASSIRE    | 398   | 440   |
| 2BABA301 | BANAMBA | DILOULADIASSA    | 627   | 682   | 2BABA053 | BORON        | SAMBOUGOUB    | 155   | 171   |
| 2BABA326 | BANAMBA | FADABOUGOU       | 82    | 89    | 2BABA054 | BORON        | SANAMBA       | 341   | 377   |
| 2BABA351 | BANAMBA | FADIOLA          | 110   | 120   | 2BABA055 | BORON        | SEBENIKELE    | 346   | 363   |
| 2BABA363 | BANAMBA | FALEMBOUGOU      | 248   | 270   | 2BABA056 | BORON        | SIRADO        | 387   | 428   |
| 2BABA376 | BANAMBA | FAMALE           | 492   | 536   | 2BABA057 | BORON        | SIRAKEME      | 215   | 239   |
| 2BABA401 | BANAMBA | GALO-BAMBARA     | 204   | 222   | 2BABA058 | BORON        | SOBOUGOU-BA   | 596   | 659   |
| 2BABA426 | BANAMBA | GALO-MARIKA      | 105   | 114   | 2BABA059 | BORON        | SOBOUGOU-FIT  | 157   | 174   |
| 2BABA451 | BANAMBA | KARADIE          | 336   | 366   | 2BABA060 | BORON        | SOSSO         | 582   | 655   |
| 2BABA476 | BANAMBA | KASSELA          | 634   | 690   | 2BABA061 | BORON        | SOUBALA       | 170   | 188   |
| 2BABA501 | BANAMBA | KIBAN            | 5520  | 6008  | 2BABA062 | BORON        | SOYA-FITTOBE  | 886   | 980   |
| 2BABA526 | BANAMBA | KOLONDIJALAN     | 456   | 496   | 2BABA063 | BORON        | SOYA-KAGORO   | 942   | 1042  |
| 2BABA551 | BANAMBA | KOUNA            | 210   | 229   | 2BABA064 | BORON        | TACOUTALA     | 279   | 309   |
| 2BABA576 | BANAMBA | MADINANI         | 199   | 217   | 2BABA065 | BORON        | TICOURA       | 226   | 252   |
| 2BABA601 | BANAMBA | NGALAMADIBI      | 550   | 599   | 2BABA066 | BORON        | TIEMABALA     | 141   | 156   |
| 2BABA626 | BANAMBA | NGANOUNBA        | 354   | 385   | 2BABA067 | BORON        | TIEMBOUGOU    | 646   | 714   |
| 2BABA651 | BANAMBA | NGANOUKORO       | 588   | 640   | 2BABA068 | BORON        | WARO          | 598   | 661   |
| 2BABA676 | BANAMBA | NIAMPELA         | 382   | 416   | 2BABA069 | BORON        | WARO          | 598   | 661   |
| 2BABA701 | BANAMBA | OULENI-MARKA     | 914   | 995   | 2BAMS001 | MADINA SACKO | BABOUGOU      | 381   | 416   |
| 2BABA726 | BANAMBA | OULENI-PEULH     | 129   | 140   | 2BAMS002 | MADINA SACKO | BAMBILA       | 56    | 61    |
| 2BABA751 | BANAMBA | SABALIBOUGOU     | 53    | 58    | 2BAMS003 | MADINA SACKO | BARSABE       | 347   | 379   |
| 2BABA776 | BANAMBA | SAMAKELE         | 533   | 580   | 2BAMS004 | MADINA SACKO | BOROMBA       | 243   | 266   |
| 2BABA801 | BANAMBA | SANAKORO         | 474   | 516   | 2BAMS005 | MADINA SACKO | DANGADO       | 826   | 903   |
| 2BABA826 | BANAMBA | SINZENA          | 470   | 512   | 2BAMS006 | MADINA SACKO | DIANEGUELA-M  | 260   | 284   |
| 2BABA851 | BANAMBA | TIORIBOUGOU      | 223   | 243   | 2BAMS007 | MADINA SACKO | DIANEGUEBOUG  | 484   | 529   |
| 2BABA876 | BANAMBA | TIONTALA         | 318   | 346   | 2BAMS008 | MADINA SACKO | DONGUENE      | 91    | 99    |
| 2BABA901 | BANAMBA | TEMBALLA         | 601   | 654   | 2BAMS009 | MADINA SACKO | GUEOUAN OU G  | 543   | 593   |
| 2BABA926 | BANAMBA | TOMBA            | 299   | 325   | 2BAMS010 | MADINA SACKO | KANIBOUGOUB   | 375   | 410   |
| 2BABA951 | BANAMBA | ZAMBOUGOU        | 146   | 159   | 2BAMS011 | MADINA SACKO | KERELA        | 192   | 210   |
| 2BABA001 | BORON   | BARSABE          | 31    | 34    | 2BAMS012 | MADINA SACKO | KOFALAN       | 120   | 131   |
| 2BABA022 | BORON   | BORON            | 3642  | 4027  | 2BAMS013 | MADINA SACKO | KOKONI        | 1419  | 1551  |
| 2BABA043 | BORON   | DAMPHA           | 1688  | 1867  | 2BAMS014 | MADINA SACKO | KOROKOBOUGO   | 764   | 836   |
| 2BABA064 | BORON   | DIEDIE           | 986   | 1090  | 2BAMS015 | MADINA SACKO | MADINA-SACKO  | 3118  | 3407  |
| 2BABA085 | BORON   | DIONGOYE         | 96    | 106   | 2BAMS016 | MADINA SACKO | MARENA        | 156   | 170   |
| 2BABA106 | BORON   | DIORNE           | 221   | 244   | 2BAMS017 | MADINA SACKO | MORIBOUGOU T  | 516   | 564   |
| 2BABA127 | BORON   | DJOMADJI-BAMBARA | 169   | 187   | 2BAMS018 | MADINA SACKO | NEGUESSEBOU   | 1120  | 1224  |
| 2BABA148 | BORON   | DJOMADJI-FIMIBE  | 170   | 188   | 2BAMS019 | MADINA SACKO | NIAMADI OU NT | 465   | 508   |
| 2BABA169 | BORON   | DJOMADJI-MARKA   | 575   | 636   | 2BAMS020 | MADINA SACKO | NTGUEUDO      | 249   | 272   |
| 2BABA190 | BORON   | DOGOE            | 146   | 161   | 2BAMS021 | MADINA SACKO | SAFENA        | 108   | 118   |
| 2BABA211 | BORON   | DOSSOROLA        | 743   | 822   | 2BAMS022 | MADINA SACKO | SIRIBILA      | 300   | 328   |
| 2BABA232 | BORON   | DOURABOUGOU      | 785   | 868   | 2BAMS023 | MADINA SACKO | SIRADIANKORO  | 157   | 172   |
| 2BABA253 | BORON   | GOUNOUNBA        | 41    | 45    | 2BAMS024 | MADINA SACKO | SIRATOMA      | 197   | 215   |
| 2BABA274 | BORON   | GUESSENE         | 887   | 981   | 2BAMS025 | MADINA SACKO | SIRATOMBA     | 197   | 215   |
| 2BABA295 | BORON   | HATOMA           | 297   | 328   | 2BAMS026 | MADINA SACKO | TENKOROKO     | 270   | 295   |
| 2BABA316 | BORON   | KAMIKO           | 597   | 660   | 2BAMS027 | MADINA SACKO | TOTA          | 1995  | 2180  |
| 2BABA337 | BORON   | KAMISSARA        | 922   | 1020  | 2BAMS028 | MADINA SACKO | TOTA-PEULH SO | 83    | 91    |
| 2BABA358 | BORON   | KANIKA           | 845   | 934   | 2BAMS029 | MADINA SACKO | TOTA-PEULH BO | 104   | 114   |
| 2BABA379 | BORON   | KEGNEBOUGOU      | 565   | 625   | 2BAMS030 | MADINA SACKO | TOTA          | 1000  | 1093  |
| 2BABA400 | BORON   | KEKE-MAGASSI     | 432   | 478   | 2BAMS031 | MADINA SACKO | WORO          | 603   | 659   |
|          |         |                  |       |       | 2BASE001 | SEBETE       | BABOUGOU      | 59    | 63    |
|          |         |                  |       |       | 2BASE004 | SEBETE       | BALLALA       | 340   | 363   |

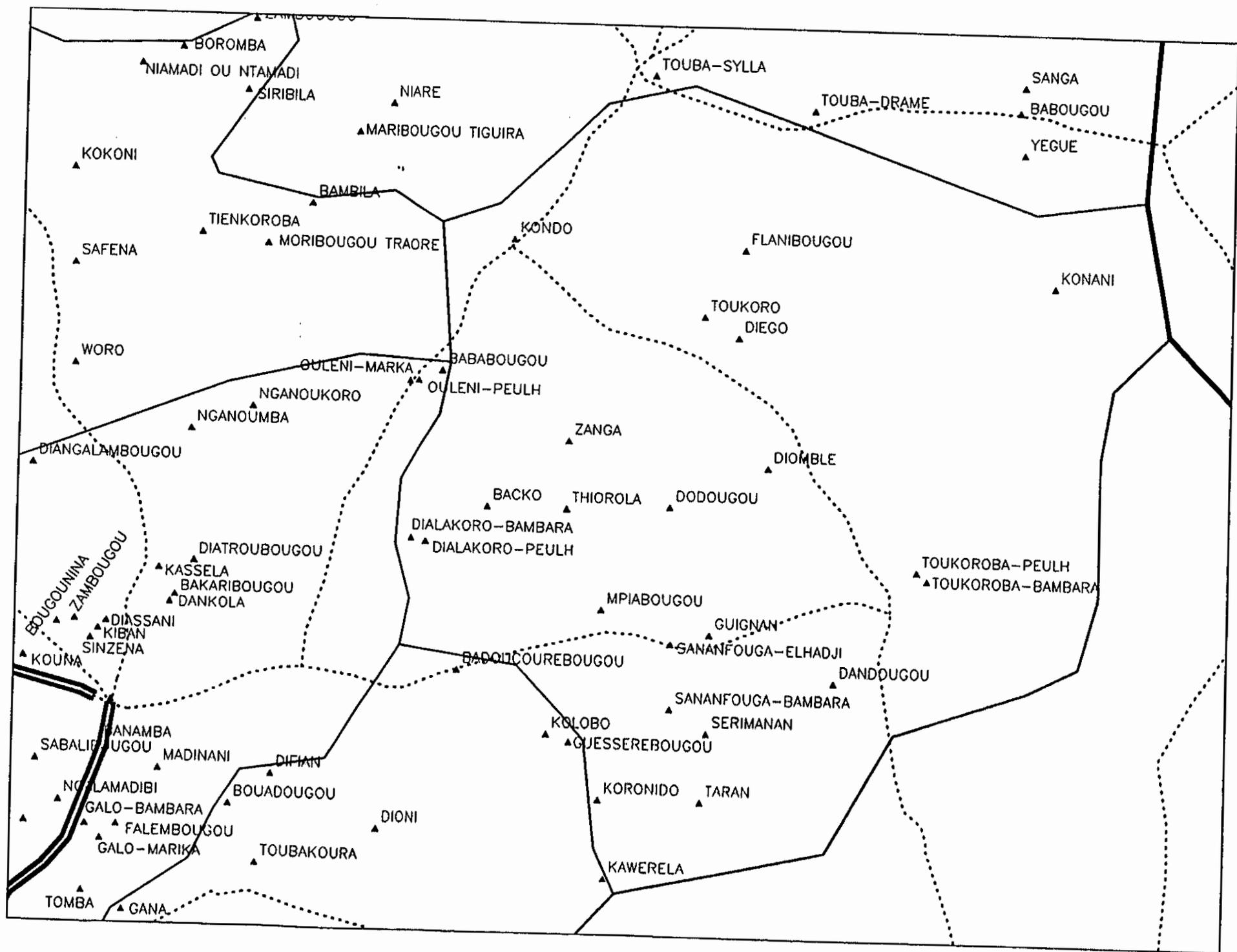
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| VCODE    | ARROND    | VILLAGE            | POP87 | POP91 | VCODE    | ARROND    | VILLAGE      | POP87 | POP91 |
|----------|-----------|--------------------|-------|-------|----------|-----------|--------------|-------|-------|
| 2BASE067 | SEBETE    | BINGO              | 135   | 144   | 2BATK087 | TOUKOROBA | DIALAKORO-BA | 94    | 100   |
| 2BASE100 | SEBETE    | BOUALA             | 353   | 377   | 2BATK130 | TOUKOROBA | DIALAKORO-PE | 333   | 353   |
| 2BASE133 | SEBETE    | BOUGOULA           | 232   | 248   | 2BATK173 | TOUKOROBA | DIEGO        | 258   | 273   |
| 2BASE166 | SEBETE    | DANDOUGOU          | 402   | 429   | 2BATK216 | TOUKOROBA | DIOMBLE      | 195   | 207   |
| 2BASE199 | SEBETE    | DEMBABOUGOU        | 51    | 54    | 2BATK259 | TOUKOROBA | DODOUGOU     | 210   | 222   |
| 2BASE232 | SEBETE    | DOUNDE             | 294   | 314   | 2BATK302 | TOUKOROBA | FLANIBOUGOU  | 435   | 461   |
| 2BASE265 | SEBETE    | FANIBOUGOU         | 368   | 393   | 2BATK345 | TOUKOROBA | GUIGNAN      | 358   | 379   |
| 2BASE298 | SEBETE    | GOUNONDO           | 504   | 538   | 2BATK388 | TOUKOROBA | KONANI       | 262   | 278   |
| 2BASE331 | SEBETE    | KORCINA            | 65    | 69    | 2BATK431 | TOUKOROBA | KONDO        | 1667  | 1766  |
| 2BASE364 | SEBETE    | MADINA-KONARE      | 304   | 325   | 2BATK474 | TOUKOROBA | KORONIDO     | 320   | 339   |
| 2BASE397 | SEBETE    | MARIBOUGOU TIGUIRA | 128   | 137   | 2BATK517 | TOUKOROBA | MPIABOUGOU   | 374   | 396   |
| 2BASE430 | SEBETE    | MONZONA            | 550   | 587   | 2BATK560 | TOUKOROBA | SANANFOUGA-B | 162   | 172   |
| 2BASE463 | SEBETE    | MPEBOUGOU          | 320   | 342   | 2BATK603 | TOUKOROBA | SANANFOUGA-E | 132   | 140   |
| 2BASE496 | SEBETE    | NIARE              | 403   | 430   | 2BATK689 | TOUKOROBA | SERIMANAN    | 138   | 146   |
| 2BASE529 | SEBETE    | ORTIBOLA           | 732   | 782   | 2BATK732 | TOUKOROBA | TARAN        | 526   | 557   |
| 2BASE562 | SEBETE    | SANGA              | 482   | 515   | 2BATK775 | TOUKOROBA | THIOROLA     | 123   | 130   |
| 2BASE595 | SEBETE    | SAILE              | 257   | 285   | 2BATK818 | TOUKOROBA | TOUKORO      | 223   | 236   |
| 2BASE628 | SEBETE    | SEBETE             | 901   | 962   | 2BATK861 | TOUKOROBA | TOUKOROBA-BA | 1196  | 1267  |
| 2BASE661 | SEBETE    | SEMENE             | 347   | 371   | 2BATK904 | TOUKOROBA | TOUKOROBA-PE | 118   | 125   |
| 2BASE694 | SEBETE    | SIKORO             | 256   | 273   | 2BATK947 | TOUKOROBA | ZANGA        | 150   | 159   |
| 2BASE727 | SEBETE    | SIRAKORONI         | 130   | 139   |          |           |              |       |       |
| 2BASE760 | SEBETE    | SIRANI             | 920   | 982   |          |           |              |       |       |
| 2BASE793 | SEBETE    | SIRIBILA           | 109   | 116   |          |           |              |       |       |
| 2BASE826 | SEBETE    | SOGONI             | 416   | 444   |          |           |              |       |       |
| 2BASE859 | SEBETE    | TOUBA-DRAME        | 671   | 716   |          |           |              |       |       |
| 2BASE892 | SEBETE    | TOUBA-SYLLA        | 1068  | 1140  |          |           |              |       |       |
| 2BASE925 | SEBETE    | YEGUE              | 234   | 250   |          |           |              |       |       |
| 2BASE958 | SEBETE    | ZABANA             | 46    | 49    |          |           |              |       |       |
| 2BATB001 | TOUBA     | BABARA             | 55    | 60    |          |           |              |       |       |
| 2BATB035 | TOUBA     | BADOUCOUREBOUGOU   | 375   | 411   |          |           |              |       |       |
| 2BATB069 | TOUBA     | BADOUMBERA         | 517   | 566   |          |           |              |       |       |
| 2BATB103 | TOUBA     | BALABOUGOU         | 230   | 252   |          |           |              |       |       |
| 2BATB137 | TOUBA     | BAMORIBOUGOU       | 170   | 186   |          |           |              |       |       |
| 2BATB171 | TOUBA     | BOUADOUGOU         | 727   | 796   |          |           |              |       |       |
| 2BATB205 | TOUBA     | BOUALA             | 103   | 113   |          |           |              |       |       |
| 2BATB239 | TOUBA     | BOUGOUBA           | 783   | 858   |          |           |              |       |       |
| 2BATB273 | TOUBA     | DIALADO            | 846   | 927   |          |           |              |       |       |
| 2BATB307 | TOUBA     | DIFIAN             | 335   | 367   |          |           |              |       |       |
| 2BATB341 | TOUBA     | DINIDIE-BAMBARA    | 285   | 312   |          |           |              |       |       |
| 2BATB375 | TOUBA     | DINIDIE-MARKA      | 490   | 537   |          |           |              |       |       |
| 2BATB409 | TOUBA     | DIONI              | 542   | 594   |          |           |              |       |       |
| 2BATB443 | TOUBA     | DOGOTOU            | 276   | 302   |          |           |              |       |       |
| 2BATB477 | TOUBA     | GANA               | 417   | 457   |          |           |              |       |       |
| 2BATB511 | TOUBA     | GRIFFELA           | 264   | 289   |          |           |              |       |       |
| 2BATB545 | TOUBA     | GUESSEREBOUGOU     | 131   | 143   |          |           |              |       |       |
| 2BATB579 | TOUBA     | HAMADILA           | 345   | 378   |          |           |              |       |       |
| 2BATB613 | TOUBA     | KAWERELA           | 898   | 984   |          |           |              |       |       |
| 2BATB630 | TOUBA     | KEMERA             | 156   | 171   |          |           |              |       |       |
| 2BATB647 | TOUBA     | KEROUANE           | 3007  | 3294  |          |           |              |       |       |
| 2BATB681 | TOUBA     | KOLOBO             | 855   | 936   |          |           |              |       |       |
| 2BATB715 | TOUBA     | MARIBABOUGOU       | 218   | 239   |          |           |              |       |       |
| 2BATB749 | TOUBA     | MASSIMINEBOUGOU    | 552   | 605   |          |           |              |       |       |
| 2BATB783 | TOUBA     | NEKO               | 625   | 685   |          |           |              |       |       |
| 2BATB817 | TOUBA     | NPACARLA           | 199   | 218   |          |           |              |       |       |
| 2BATB851 | TOUBA     | NTIELE             | 554   | 607   |          |           |              |       |       |
| 2BATB885 | TOUBA     | TOUBAKOURA         | 7143  | 7824  |          |           |              |       |       |
| 2BATB919 | TOUBA     | SOLONTIGUIBOUGOU   | 591   | 647   |          |           |              |       |       |
| 2BATB953 | TOUBA     | WLOKORO            | 288   | 315   |          |           |              |       |       |
| 2BATK001 | TOUKOROBA | BACKO              | 316   | 335   |          |           |              |       |       |
| 2BATK044 | TOUKOROBA | DANDOUGOU          | 353   | 374   |          |           |              |       |       |

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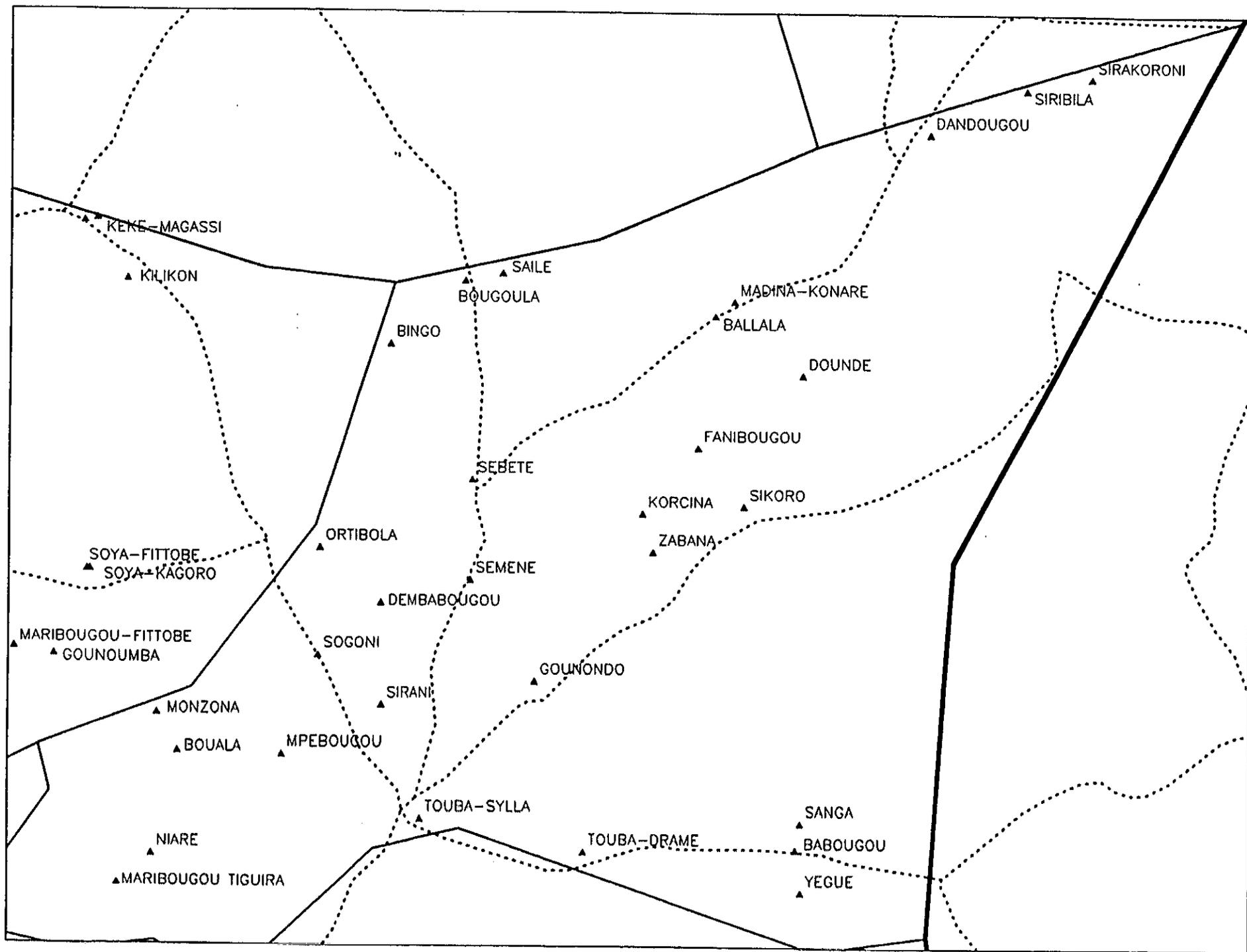


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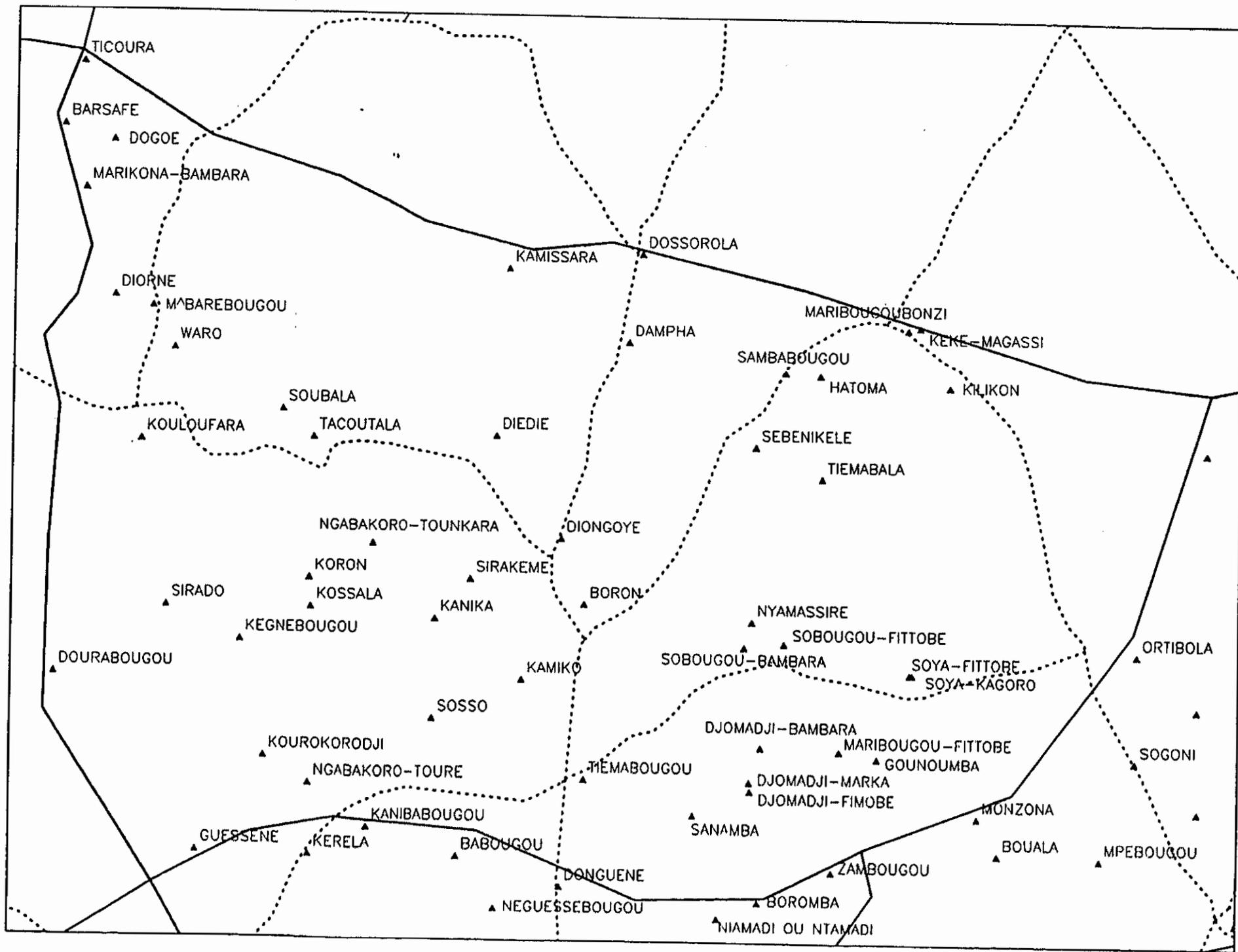


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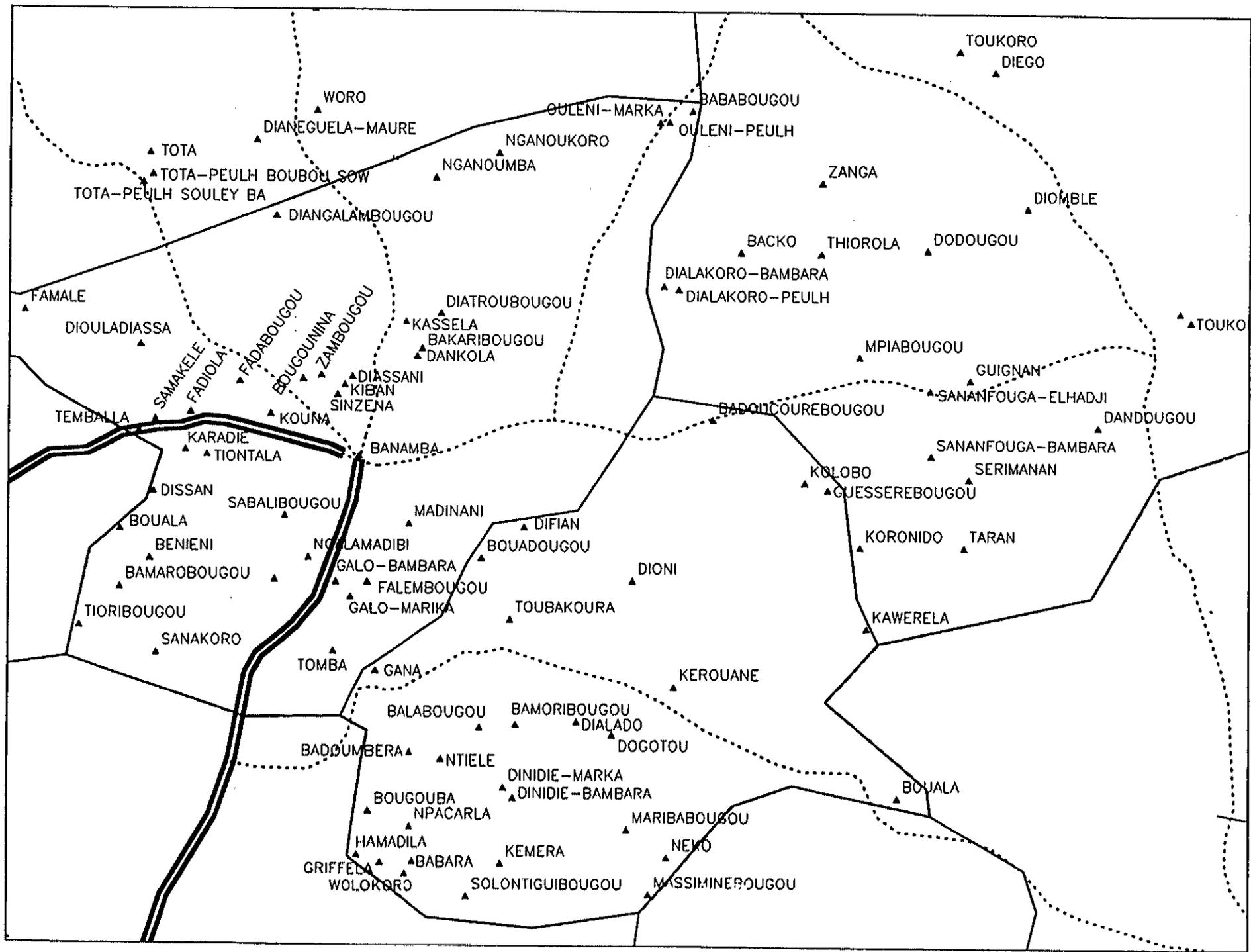




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ANNEX 5  
Project Pipeline Analysis

SS

| FIELD  | ACTUAL EXPENDITURES TO DATE<br>(09/01/90 TO 08/31/94) |                |                | REMAINING OBLIGATED FUNDS |                  |                  | TOTAL AGREEMENT BUDGET<br>(COLUMNS 1 & 2)<br>(09/01/90 TO 08/31/94) |                |                |
|--|---|----------------|----------------|---------------------------|------------------|------------------|---|----------------|----------------|
|  | AID   | PLAN           | TOTAL          | AID                       | PLAN             | TOTAL            | AID   | PLAN           | TOTAL          |
| <b>COST ELEMENTS</b>   |   |                |                |                           |                  |                  |   |                |                |
| <b>I. PROCUREMENT</b>  |   |                |                |                           |                  |                  |   |                |                |
| A. Supplies  | 157,209   | 304,387        | 461,596        | (36,709)                  | (113,387)        | (150,096)        | 120,500   | 191,000        | 311,500        |
| B. Equipment   | 0   | 65,684         | 65,684         | 0                         | 8,791            | 8,791            | 0   | 74,475         | 74,475         |
| C. Services/Consultants  |   |                |                |                           |                  |                  |   |                |                |
| 1. Local   | 3,594   | 0              | 3,594          | 606                       | 0                | 606              | 4,200   | 0              | 4,200          |
| 2. Expatriate  | 1,632   | 0              | 1,632          | 28,368                    | 0                | 28,368           | 30,000  | 0              | 30,000         |
| <b>SUB-TOTAL I</b>   | <b>162,435</b>  | <b>370,071</b> | <b>532,506</b> | <b>(7,735)</b>            | <b>(104,596)</b> | <b>(112,331)</b> | <b>154,700</b>  | <b>265,475</b> | <b>420,175</b> |
| <b>II. EVALUATION</b>  |   |                |                |                           |                  |                  |   |                |                |
|  | 22,311  | 0              | 22,311         | 7,689                     | 0                | 7,689            | 30,000  | 0              | 30,000         |
| <b>SUB-TOTAL II</b>  | <b>22,311</b>   | <b>0</b>       | <b>22,311</b>  | <b>7,689</b>              | <b>0</b>         | <b>7,689</b>     | <b>30,000</b>   | <b>0</b>       | <b>30,000</b>  |
| <b>III. INDIRECT COSTS</b>   |   |                |                |                           |                  |                  |   |                |                |
| Overhead HQ/HO 10% through 6/30/93<br>17.1% as of 7/1/93             | 35,724  | 41,740         | 77,464         | (697)                     | (1,271)          | (1,968)          | 35,027  | 40,469         | 75,496         |
| <b>SUB-TOTAL III</b>   | <b>35,724</b>   | <b>41,740</b>  | <b>77,464</b>  | <b>(697)</b>              | <b>(1,271)</b>   | <b>(1,968)</b>   | <b>35,027</b>   | <b>40,469</b>  | <b>75,496</b>  |
| <b>IV. OTHER PROGRAM COSTS</b>                                       |   |                |                |                           |                  |                  |   |                |                |
| A. Personnel (list each position and total person months separately) |   |                |                |                           |                  |                  |   |                |                |
| 1. Technical   | 93,710  | 0              | 93,710         | 11,714                    | 0                | 11,714           | 105,424   | 0              | 105,424        |
| 2. Administrative  | 0   | 21,777         | 21,777         | 0                         | 42,948           | 42,948           | 0   | 64,725         | 64,725         |
| 3. Support   | 0   | 3,253          | 3,253          | 0                         | 6,717            | 6,717            | 0   | 9,970          | 9,970          |
| B. Travel/Per Diem   |   |                |                |                           |                  |                  |   |                |                |
| 1) In-Country  | 4,323   | 778            | 5,101          | 24,476                    | 423              | 24,899           | 28,799  | 1,201          | 30,000         |
| 2) International   | 0   | 0              | 0              | 0                         | 0                | 0                | 0   | 0              | 0              |
| C. Other Direct Costs (utilities, printing, rent, maintenance, etc.) | 65,794  | 18,569         | 84,363         | (35,447)                  | 44,784           | 9,307            | 31,347  | 63,323         | 94,670         |
| <b>SUB-TOTAL IV</b>  | <b>164,827</b>  | <b>44,377</b>  | <b>209,204</b> | <b>743</b>                | <b>94,842</b>    | <b>95,585</b>    | <b>165,570</b>  | <b>109,210</b> | <b>274,780</b> |
| <b>TOTAL FIELD</b>   | <b>385,297</b>  | <b>455,168</b> | <b>841,465</b> | <b>0</b>                  | <b>(11,025)</b>  | <b>(11,025)</b>  | <b>385,297</b>  | <b>445,163</b> | <b>830,460</b> |

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