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**World Vision Relief & Development Inc.**

**FIRST ANNUAL REPORT  
KOUTIALA CHILD SURVIVAL  
VIII PROJECT  
KOUTIALA, MALI**

**Beginning Date: October 1, 1991  
Ending Date: September 30, 1994**

Submitted to:

**PVO Child Survival Grants Program  
U.S Agency for International Development  
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**October 15, 1992**

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## KEY TO ABBREVIATIONS

<b>AIDS</b>	Acquired Immune Deficiency Syndrome
<b>AS</b>	Aides-Soignant (First Aid Attendant in English)
<b>AV</b>	Association Villages
<b>CHW</b>	Community Health Worker
<b>CMDT</b>	Compagnie Malienne de Development Textile
<b>CNIECS</b>	Centre National d'Information Education pour la Sante
<b>DIP</b>	Detailed Implementation Plan
<b>EPI</b>	Expanded Program for Immunization
<b>FP</b>	Family Planning
<b>GRAAP</b>	Groupe de Recherche et d'Appui à l'Autopromotion Paysanne
<b>HIS</b>	Health Information System
<b>IGA</b>	Income-Generating Activities
<b>INRSP</b>	Institut National de Recherche en Santé publique
<b>MCH</b>	Maternal and Child Health
<b>MOH</b>	Ministry Of Health
<b>NCP</b>	Nutrition Communication Project
<b>ORS/ORT</b>	Oral Rehydration Salt/Therapy
<b>TBA</b>	Traditional Birth Attendant
<b>TT</b>	Tetanus Toxoid
<b>VHC</b>	Village Health Committee
<b>WCBA</b>	Women of Childbearing Age
<b>WHO</b>	World Health Organization
<b>WVRD</b>	World Vision Relief & Development

## **EXECUTIVE SUMMARY**

The Koutiala Child Survival Project (CSP) was funded for three years' extension (October 1991—September 1994). The project expanded its intervention area from 54 to 61 villages this year. The project's interventions were the following:

**Nutrition/Vitamin A:** Growth monitoring/promotion activities were conducted in all the target areas. Health workers were trained in nutritional education, including Vitamin A. A Vitamin A survey was conducted in the project area (see survey report in appendix).

**ORT:** The use of ORS sachets was promoted through demonstrations by animatrices. A weekly Village sanitation day was set by communities.

**Maternal Health:** Education sessions on family planning, HIV/AIDS prevention, the importance of prenatal care and assisted delivery.

**Immunization:** Villages were encouraged to mobilize beneficiaries whenever a planned session was scheduled.

**Malaria Prophylaxis:** The use of chloroquine for malaria chemoprophylaxis during the rainy season was encouraged for children aged 0-6 years and pregnant women.

**Income-Generating Activities (IGAs):** Thirty-six villages out of 61 received funds to start these activities with the groups of animatrices to increase the community financial contribution to project activities.

The project conducted training sessions for traditional birth attendants (TBAs); new animatrices; refresher courses for first aid attendants and Ministry of Health (MOH) nurses.

Village health committees (VHCs) actively participated in project activities.

## **1. RESULTS IN YEAR ONE**

### **1.1 Major Results**

#### ***Nutrition***

A total of 615 animatrices in the 61 villages and Koutiala commune were encouraged in MCH promotion activities. They used arm-circumference tapes to identify malnourished children and follow up on them through home visits. They organized nutritional education sessions. Messages on proper weaning practices were spread by project staff and village animatrices. Vegetable gardening took place in 31 villages with women's groups, part of the produce was used for culinary demonstrations. The rest was sold in the villages to increase the consumption of vegetables.

Growth monitoring continued in 19 clinics. Two thousand out of 8,500 children aged 0-3 years were in the weighing program. Twenty-one health workers were trained in nutrition communication with groups, and provided with GRAAP training material. Forty-seven health workers were trained in interpersonal communication and Vitamin A-deficiency prevention. All 19 clinics were provided with NCP educational materials.

#### ***ORT***

The Animatrices were given ORS sachets for demonstration during their health education sessions. The project continued the promotion of sugar/salt solution. Action messages focused on the increase of intake during and after diarrheal episodes. The majority of villages started a weekly cleaning day.

#### ***Maternal Health***

Fifty-six out of 61 villages sent 87 TBAs to train this year. Emphasis was on prenatal care and identification of high-risk pregnancies/births. Thirteen matrons out of 18; 19 AS out of 20; and 16 nurses had refresher courses on the possible means of reducing maternal mortality rates. A public awareness campaign on AIDS/HIV prevention took place in Koutiala town with the participation of the national program of AIDS. Twelve wards, 5 primary schools, and 2 secondary schools had time to debate on this issue.

One thousand, three hundred new couples used a modern family planning method this year.

#### ***Immunization***

The project supported the EPI program at the district level by providing a Toyota pick-up truck for the mobile vaccination team and a deep freezer to make more ice packs during the warm season. The project continues its social mobilization activities to meet the vaccination schedule and target.

### ***Malaria Prophylaxis***

All 61 villages were motivated to conduct weekly chloroquine distribution to children aged 0-6 years during the rainy season. Pregnant women also were given chemoprophylaxis.

### ***Income-Generating Activities***

Thirty-six out of the 61 villages received funds to start IGAs with village women's groups led by the animatrices. This funding was a source of motivation for beneficiary communities.

### ***Training Opportunities for Project Staff***

Project staff attended several workshops at national, regional, and district levels. The English training was not accomplished.

## **1.2 Change in Approach to Individuals at Higher Risk**

Special attention was devoted to malnourished children. They were followed up by animatrices at home once a week, so that mothers were encouraged to feed the sick.

The training of TBAs focused on their ability to conduct some prenatal assessment where there is no maternity facility. They will look for anemia, edema, persistent headache, and should identify and refer high-risk pregnancies/deliveries as soon as possible to the nearest health facility.

The national program on diarrheal disease control started to promote ORS sachets made in Mali, and the project was asked to do the same.

The project distributed sachets to animatrices who were asked to demonstrate their use and explain their availability to mothers.

## **1.3 Staffing**

Jean Charles Dembele, a State-Registered Nurse was hired in October 1991 as the Coordinator for EPI/ORT.

Job descriptions, resumes, and the updated organizational chart are attached in the appendix.

## **1.4 Continuing Education**

1.4.1 From October 14 to 20, 1991, the project manager and nutrition coordinator attended the Sixth African Child Survival Workshop held in Sikasso. Several important issues such as sustainability and Health Information Systems (HIS) were discussed.

- 1.4.2 The project administrator received training on basic bookkeeping in Bamako from January 8 to 15.
- 1.4.3 The project administrator participated in a seminar on community development project design and implementation and area development programs from January 21 to 24 in Bamako.
- 1.4.4 The project health coordinators received training on vegetable gardening in Koutiala from January 23 to 24.
- 1.4.5 The nutrition coordinator and project administrator participated in a workshop organized by "Yiriwaso" on small loans management from January 29 to 30.
- 1.4.6 The maternal health coordinator participated in a seminar on the management of family planning supplies. This was held in Sikasso from February 17 to 22, with the Regional Department of Family Health.
- 1.4.7 The project administrator participated in the planning workshop in Sikasso from February 25 to 27.
- 1.4.8 The project coordinator for nutrition attended a workshop on improved earthen stoves in Koutiala from April 27 to May 2.
- 1.4.9 The project health coordinators participated in a workshop held in Segou on interpersonal communication, organized by NCP and CNIECS, from May 3 to 8.
- 1.4.10 The project coordinator for EPI/ORT attended a workshop on communication on AIDS, in Bamako from May 16 to 30.
- 1.4.11 The project organized training in Bambara for its staff and MOH nurses from June 15 to 20.
- 1.4.12 The project manager participated in the Africa Health Strategy Consultation meeting held in Nairobi. This was organized by WVI from June 22 to 26.
- 1.4.13 The project coordinator for EPI/ORT attended a workshop in Sikasso from June 22 to 26 on case management of acute diarrhea.
- 1.4.14 The project manager attended a seminar on Health Programs and Communication with Rural Communities held in Bamako by the Group PIVOT from June 29 to July 3.
- 1.4.15 Six hundred and fifteen animatrices were given continuous training related to MCH promotion in their communities.

## **1.5 Technical Support**

The project used the following local technical assistance this year:

- 1.5.1 Dr. Seydou Ousmane Diallo, from WHO in Bamako, came to the project site and oriented the staff on key issues to address in the Detailed Implementation Plan (DIP) for the extension phase in light of the last evaluation recommendations and lessons learned.
- 1.5.2 Daniel Coulibaly and Siaka Diarra from CMDT in Koutiala facilitated the training of project staff on the use of GRAAP technique for health education and adequate use of Bambara in rural areas.
- 1.5.3 Moctar Traore from the Bureau of Agriculture oriented the project coordinators on basic knowledge of vegetable gardening to enable them to give proper advice to village women groups during their supervisory visits.
- 1.5.4 Sam Asare, the WV-Mali Operations Manager, visited the project with the National Director. Sam shared his experience as former CSP manager with the staff and provided inputs for the project DIP.
- 1.5.5 A research team from the National Institute of Public Health Research (INRSP) conducted a survey in the project intervention area to assess Vitamin A deficiency.
- 1.5.6 Leslie Horning from WVRD met the project manager in Bamako to discuss issues related to the project DIP.

## **1.6 Community Participation**

Forty VHCs out of 61 are active. Their activities in support of the project are:

- ▶ Mobilizing heads of families to contribute to culinary demonstrations; a number of heads of families gave products from their harvest;
- ▶ Supporting the promotion effort of animatrices;
- ▶ Mobilizing the youths to prepare fences and soil for vegetable gardens made by women's groups in 31 villages;
- ▶ Motivating mothers to participate in group health education sessions and mobilizing the community for weekly sanitation days.
- ▶ Participating in the continuous training of animatrices and supporting them in the management of their IGAs.

- ▶ Registering of children aged 0-6 years and women of childbearing age was conducted by the VHCs.

All 61 health committees met at least once within the last 90 days. Issues discussed were on weekly chloroquine distribution and the selection of and support of the training of TBAs.

## **1.7 Linkages to Other Health and Development Activities**

- 1.7.1 The health center in Koutiala project has regular monthly coordination meetings with the MOH staff. The staff of social affairs has been involved in the supervision of animatrices in Koutiala town.
- 1.7.2 The CMDT gave training support for project and MOH staff and mobilization of VHCs.
- 1.7.3 World Vision community development workers gave assistance in the continuing training of animatrices.
- 1.7.4 The agricultural services and livestock divisions assisted the project in the planning of the project DIP.
- 1.7.5 The project discussed and wrote a protocol agreement with the government of Mali. This agreement was signed in September 1992 (see appendix).

## **2. CONSTRAINTS, UNEXPECTED BENEFITS, AND LESSONS LEARNED**

### **2.1 Constraints**

- 2.1.1 Political and social problems occurred in some communities in the project area, hindering community mobilization for project activities. As outsiders, the project will not be involved in dealing with these issues. The staff will continue to relate to the same people to ensure equal opportunities for all.
- 2.1.2 The MCH supplies were ordered in October 1991 through UNICEF but were not received until July 1992. Without these supplies, the project was not able to start community-based growth monitoring.
- 2.1.3 New records on MCH activities were designed by MOH. The project intends to adopt them so that its HIS will be identical. The project will change its records and monthly statistical report forms.
- 2.1.4 Some Community Health Workers (CHWs) did not receive their salaries regularly from the AVs, and were not very motivated in their work. The project will encourage these community workers through the improvement of working relationships.

2.1.5 Some VHCs did not mobilize their village for registration. The project will encourage villages to finish the exercise before the beginning of community-based growth monitoring sessions.

2.1.6 More than half of the villages in the project target area were not vaccinated as previously planned. A few cases of measles occurred this year hindering mobilization of mothers. The EPI declined at the district level because of poor management of available resources regularly provided by the MOH (regional department).

## **2.2 Unexpected Benefits**

The beginning of IGAs in the villages was a big motivation for the animatrices. In villages where these activities are not yet funded, VHCs are doing their best to "win the prize."

The CMDT is ready to give technical assistance to women's groups for their vegetable gardens.

After the training of the staff of social affairs as trainers of animatrices, they were willing to supervise them regularly without cost (per diem) to the project.

## **2.3 Institutionalization of Lessons Learned**

This year 38 villages planned to have vegetable gardens for women's groups and received the seeds. Out of these, 31 villages prepared the gardens. The project will not distribute seeds without observing that the garden is prepared (fence, soil, source of water) and the village is ready to pay half the cost of the seeds.

## **3. CHANGES MADE IN PROJECT DESIGN**

### **3.1 Change in Perceived Health Needs**

Iodine deficiency is a community-perceived health need. The project tried, without success this year, to implement activities to relieve, even eradicate, this problem. Efforts will continue toward this end.

No survey has been conducted yet to establish the prevalence of goiters or other disorders. A national program already exists and wants the project to raise funds in order to cover the whole district with the iodine intervention. The national program's objective in the long-term is to cover the whole country below the 14th parallel. The project trained MOH nurses and CHWs in the available treatment and prevention measures.

### **3.2 Change in Project Objectives**

No changes have been made in the project objectives since the DIP was submitted.

### **3.3 Change in Planned Interventions**

No change occurred in the project planned interventions this year. A new intervention is IGAs among women's groups with the leadership of VHCs. These activities are aimed at increasing the financial contribution of villages to the project activities and motivating the animatrices for better sustainability.

### **3.4 Change in Potential and Priority Beneficiaries**

No change was made in the project location, number or prioritization of services to potential beneficiaries after the submission of the DIP.

## **4. PROGRESS IN HEALTH INFORMATION DATA COLLECTION**

### **4.1 Characteristics of the Health Information System**

4.1.4 The HIS differs slightly according to the level of collection.

***Villages Without A Health Facility:*** The VHC has a register of all children aged 0-6 years and women of childbearing age which is updated every month to include newborn babies and deaths. The village animatrices use a monthly report form with a list of all their activities at the home and village level. This system was initiated by the project.

***Villages With A Health Facility:*** In addition to the registration mentioned above, there are several records at the clinic level on growth monitoring, prenatal care, deliveries, family planning, monthly report forms from the MOH and the project. The health worker at this level has to spend much time on reporting, and most of the time does not feel obliged to send reports on project activities on time.

At the village level, the VHC does the same collection as mentioned above.

4.1.2 This system allows the identification of high-risk individuals and the provision of services for them. The project compiled the four statistical report forms into one this year for easier coordination and minimum paperwork.

4.1.3 The project reports on clinical activities such as prenatal services and family planning. This reporting helps the project monitor activities conducted at the clinic level, such as growth monitoring and health education. As the project was not financing the EPI at the district level this year, the project stopped reporting on the number of vaccination sessions and the number of vaccinations given.

4.1.4 Animatrices are provided with pictorial report forms related to their activities. During their home visits they complete the forms. After data collection, the project health coordinator in charge meets with the VHC to discuss key findings. A copy of the completed report is given to the VHC, and the others are kept in the office. This data is not used for project management, but rather is aimed at enabling VHCs to think about the findings and make decisions to overcome the problems raised.

## **4.2 Special Capacities of the Health Information System**

4.2.1 The project does not monitor service standards.

4.2.2 The project monitors sustainability indicators such as:

- ▶ Active animatrices: 615/615 = 100%
- ▶ Number of AVs who pay their health workers: Five AVs out of 12 pay their CHWs regularly.
- ▶ Forty VHCs are active out of the 61 VHCs.

4.2.3 The project does not detect or investigate cases of polio, but encourages VHCs to report promptly on measles. The medical officer at the subdistrict level and the project coordinator will forward the data for a quick response.

4.2.4 The project does not monitor the time in hours for the continuing education of CHWs.

4.2.5 Specific data were not difficult to collect, but the monthly reports from CHWs were difficult to collect regularly. Most of the time the project coordinators were obliged to collect the reports themselves. The main reason is the lack of motivation at the clinic level in addition to the project parallel information system which was seen by these health workers as a burden.

The registration of the project target population was assigned to the VHCs, but it was not completed in all the target villages. The constraints were a few cases of measles hindered the progress of registration, and the purpose of the registration was not clearly understood by some heads of families.

An annual survey to collect data on Tier II indicators was not conducted this year because of limited resources.

## **4.3 Management of the Health Information System**

4.3.1 The proportion of project expenditure spent on the HIS this year was 0.05%. The costs included the following:

Vitamin A survey conducted in December 1991;

- ▶ Training health workers in HIS in July 92;
- ▶ Copy cost of reporting forms; and
- ▶ Cost of records for the registration of children aged 0-6 years and WCBA.

4.3.2 The project did not review its indicators.

4.3.3 Health information was shared with the following:

- ▶ At the clinic level, workers were last given feedback in July 1992 on the results of the Vitamin A survey and its implications;
- ▶ **MOH:** The last health information was shared in August 1992;
- ▶ **Community:** The last evaluation findings were shared with all the villages in the project intervention area.

4.3.4 The project coordinators are responsible for collecting, compiling, analyzing, and monitoring the quality of data they gather from the clinics.

4.3.5 The project is training the staff in data management.

## 5. SUSTAINABILITY

### 5.1 Recurrent Costs

5.1.1 The following recurrent costs will continue after end of A.I.D. Child Survival funding ends:

- ▶ Fuel and maintenance of vehicle
- ▶ Staff salaries
- ▶ Pharmaceutical supplies
- ▶ Training
- ▶ Garden seeds

The total amount in dollars needed to cover these recurrent costs is approximately \$100,000/year.

5.1.2 **Community:** The community will be able to pay for garden seeds, chloroquine, training, costs of supervision.

**Government:** Will be more likely to pay for the HIS.

The cost of staff, other pharmaceutical supplies, and logistics are unlikely to continue being paid.

## **5.2 Strategies for Increasing Post-Project Sustainability**

5.2.1 The project funded IGAs for two major purposes:

- ▶ To increase the motivation of animatrices so that they continue MCH promotion in their communities; and
- ▶ To generate funds to support training, supervision, pharmaceutical, and other promotion activities.

The project is facilitating the integration of CMDT and the section of social affairs of the health center so that they will continue to give their inputs after the end of AID funding.

5.2.2 In order to cut recurrent costs and increase efficiency, the project:

- ▶ Stopped giving financial inputs to two MOH staff to ensure their participation in the regular supervision of animatrices of Koutiala Commune. The project was able to involve the section of social affairs in the follow up of these activities.
- ▶ Reduced supervision costs by the use of motorbikes for short distances, and instead of visiting each village monthly, the coordinators visited each village twice/trimester.

## **5.3 Cost Recovery**

5.3.1 The project has provided 38 villages with vegetable garden seeds. The womens group agreed to buy the seeds at half price. The recovery will start next fiscal year and more seeds will be purchased. The money recovered will amount to US\$700.

5.3.2 The communities were very pleased with this cost recovery and it did not create inequity in service delivery.

5.3.3 The project did not conduct special training for its staff in improving skills in cost recovery and price setting.

## **6. PROJECT EXPENDITURE AND JUSTIFICATION FOR BUDGET CHANGES**

### **6.1 Pipeline Analysis**

### **6.2 Justification of Budget Changes**

**The over expenditures were due to:**

- ▶ **Underestimation of maintenance cost of the five-year-old vehicles in use;**
- ▶ **Fall in dollar exchange rate;**
- ▶ **The government decided to increase salaries through implementation of a Solidarity Allowance.**

**No change was made in the budget after the submission of the DIP.**

**7. 1992/1993 WORK SCHEDULE AND BUDGET**

**7.1 1992/1993 Work Schedule**

Activities	Q1			Q2			Q3			Q4		
	O	N	D	J	F	M	A	M	J	J	A	S
<b>1. Nutrition</b>												
▶ Distribute MCH equipment and train VHCs in growth monitoring.	*	*	*									
▶ Update registration Vegetable gardens		*	*									
▶ Continue growth monitoring/promotion activities.  Ensure the availability of VACs.		*	*	*	*	*	*	*	*	*	*	*
▶ Organize weighing sessions in all the villages.			*			*			*			
<b>2. ORT</b>												
▶ Continue environmental sanitation.		*	*	*	*	*	*	*	*	*	*	*
▶ Continue ORS promotion.	*			*			*			*		
▶ Develop intersectorial collaboration (CMDT).		*		*		*		*		*		*
<b>3. Maternal Health</b>												
▶ Train TBAs in five villages.		*										
▶ Establish a reporting form for TBAs.	*	*										
▶ Encourage the mobilization of pregnant women for prenatal care with TBAs/ matrons.		*		*				*				*
▶ Health education on AIDS/HIV.	*		*				*			*		

Activities	Q1			Q2			Q3			Q4		
	O	N	D	J	F	M	A	M	J	J	A	S
<b>4. Immunization</b>												
▶ Continue social mobilization for EPI.	*		*				*		*			
<b>5. Malaria Prevention</b>												
▶ Weekly chloroquine distribution.									*	*	*	*
<b>6. IGAs</b>												
▶ Fund IGAs in the remaining 25 villages.				*		*		*				
<b>7. Midterm Evaluation</b>							*	*				
<b>8. Annual Report</b>												*

## 7.2 1993/1994 Budget

COST ELEMENT	A.I.D.	WVRD	TOTAL
<b>I. PROCUREMENT</b>			
A. Supplies	1,096		
B. Equipment	3,150	2,070	3,166
C. Services/Consultants	9,466	1,366	4,516
		-0-	9,466
SUB-TOTAL I	13,712	3,436	17,148
<b>II. EVALUATION</b>			
SUB-TOTAL II	17,288	4,337	21,625
<b>III. INDIRECT COSTS</b>			
Overhead on Field (%)	29,838	35,436	62,274
SUB-TOTAL III	29,838	35,436	62,274
<b>IV. OTHER PROGRAM COSTS</b>			
A. Personnel	85,355	11,692	97,047
B. Travel/Per diem	5,300	(1,753)	3,547
C. Other Direct Costs	33,725	900	34,625
SUB-TOTAL IV	124,380	10,839	135,219
<b>TOTAL FIELD</b>	185,218	54,048	239,266

**APPENDIX 1**

**PROTOCOL OF AGREEMENT**

Ministère de la Santé,  
de la Solidarité et des  
Personnes âgées.

République du Mali  
Un Peuple - Un But - Une Foi

PROTOCOLE D'ACCORD

Entre

Le Ministère de la Santé, de la Solidarité et des personnes âgées

D'une part

et

Vision Mondiale Internationale  
(World Vision International)  
BP 2347 Bamako

D'autre part

Concernant le Projet "Survie de l'Enfant" de Vision Mondiale  
Internationale dans le Cercle de Koutiala.

1992

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République du Mali

Ministère de la Santé, de la Solidarité  
et des Personnes âgées.

## PROTOCOLE D'ACCORD

Concernant le Projet "Survie de l'Enfant" à Koutiala  
de Vision Mondiale Internationale Bureau du Mali.

### CHAPITRE I. Généralités

Le Ministère de la Santé, de la Solidarité et des Personnes âgées agissant au  
nom du Gouvernement de la République du Mali

d'une part

Et

Vision Mondiale Internationale (World Vision International)

B.P : 2347 Bamako ; Téléphone 22 51 89 et 22 38 20

agissant en son propre nom d'autre part,

- Conformément aux orientations générales dégagées dans le domaine de la Santé Publique par le plan décennal de développement socio-sanitaire du Mali.
- En exécution du Protocole d'Accord signé le 2 Août 1988 entre le Gouvernement du Mali et Vision Mondiale Internationale.

### Décident :

de collaborer pour réaliser le projet "Survie de l'Enfant" dans le Cercle de Koutiala et à cet effet conviennent de ce qui suit :

### CHAPITRE II. But et objectifs du projet

#### Article 1 :

Le but du projet est de contribuer à la réduction de la mortalité et de la morbidité chez les enfants de 0 à 6 ans et chez les mères à travers les programmes définis par le Ministère de la Santé, de la Solidarité et des personnes âgées du Mali conformément aux orientations générales du pays.

#### Article 2 :

Le projet a pour objectif, de soutenir et de renforcer, dans le Cercle de Koutiala le programme national de santé maternelle et infantile/planning familial.

### CHAPITRE III.    Domaine d'intervention du projet

#### Article 3 :

Le projet contribuera à la promotion de la vaccination de tous les enfants de 0 à 6 ans et des femmes en âge de procréer à travers l'IEC (Information, Education et Communication) et une mobilisation sociale active dans les 60 villages encadrés et la Commune de Koutiala.

#### Article 4 :

En vue de réduire la mortalité par diarrhée et la morbidité par déshydratation chez les enfants, le projet fera l'éducation des mères au niveau des villages et la formation des agents de santé en suivant les objectifs du Plan Régional de RVO.

#### Article 5 :

Le projet "Survie de l'Enfant" assurera la surveillance de la croissance des enfants de 0 à 5 ans, le dépistage précoce des enfants à haut risque nutritionnel et leur prise en charge par l'éducation et les démonstrations nutritionnelles.

#### Article 6 :

Dans le cadre de la carence en Vitamine A, le Projet fera la promotion de la production et de la consommation des aliments riches en Vitamine A, le traitement des cas d'héméralopie, la supplémentation en cas de malnutrition, diarrhée et rougeole par les capsules de Vitamine A.

#### Article 7 :

Pour la promotion de la santé de la mère, il s'agira de :

- la surveillance de toutes les femmes enceintes et le dépistage systématique de grossesses à haut risque selon le partogramme en vigueur dans la région.
- L'assistance à l'accouchement et les références des cas à haut risque.  
Ce volet sera intimement lié à l'éducation pour l'espace des naissances/  
planning familial.

#### Article 8 :

Le projet Survie de l'Enfant renforcera la compétence technique des agents de santé communautaire travaillant au niveau des villages et du personnel socio-sanitaire, à travers la formation.

#### Article 9 :

Le projet mettra en place des activités féminines génératrices de revenus au niveau des villages afin de consolider la promotion des activités SMI/PF et d'assurer leur continuité.

APPORTS ET RESPONSABILITES DES PARTIES :

CHAPITRE IV. Apports et responsabilités du gouvernement

Article 10 :

L'apport du Gouvernement sera constitué par l'infrastructure et le personnel nécessaire à la mise en oeuvre du projet.

Article 11 :

Il autorisera la présence du personnel de Vision Mondiale Internationale sur les lieux d'exécution du projet, comme personnel d'appui et sous la responsabilité du Médecin-Chef du cercle.

Article 12 :

Il fournira au projet un appui technique.

Article 13 :

Il fournira à Vision Mondiale Internationale les informations socio-sanitaires disponibles et nécessaires pour l'exécution du projet. La publication de ces informations ne pourra être faite qu'avec l'accord préalable du Gouvernement Malien.

Article 14 :

Il facilitera le contact entre Vision Mondiale Internationale et les populations concernées pour la mise en oeuvre des activités du projet.

CHAPITRE V . Apports et responsabilité de Vision Mondiale Internationale

Article 15 :

L'apport de Vision Mondiale Internationale sera constitué par la prise en charge de son propre personnel, et le paiement des indemnités du personnel socio-sanitaire dans le cadre de l'appui technique au projet.

Article 16 :

Vision Mondiale Internationale s'engage à exécuter le plan d'action qui sera défini conjointement avec les responsables du Ministère de la Santé, de la Solidarité et des personnes âgées conformément aux stratégies nationales et Régionales.

Article 17 :

Vision Mondiale Internationale assurera la qualité technique des volets et la bonne gestion de ses apports au projet.

Article 18 :

Elle prendra en charge tous les équipements et les fonds nécessaires aux activités du projet pour une durée de 3 (trois) ans.

Article 19 :

Elle assurera l'élaboration des rapports périodiques d'activités en collaboration avec les responsables socio-sanitaires de la localité.

CHAPITRE VI. Durée du projet

La durée du projet s'étend sur une période de 3 (trois) ans, d'Octobre 1991 à Septembre 1994. Elle peut être reconduite avec l'accord des deux parties et en fonction de la disponibilité de fonds.

CHAPITRE VII. Finance du projet

Conformément à l'évaluation des besoins, la réalisation du projet se fera sur un total de trois cent soixante six mille deux cent quatre vingt six dollars US (US \$ 366286).

Dépenses prévisionnelles (en dollar U.S)

Désignation	1992	1993	1994	Total
Equipement	12 000	-	-	12 000
Fournitures	19 186	2 351	1 951	23 488
Salaires	50 520	52 388	55 595	158 503
Formation	11 000	5 417	2 100	18 517
Activités géné- ratrices de revenus	12 800	10 000	-	22 800
Déplacements/Perdiem	17 700	15 450	16 250	49 400
Communication	5 200	2 000	2 400	9 600
Location	14 000	4 000	5 000	23 000
Entretien (machines ...)	2 500	1 360	2 208	6 068
Evaluation	-	11 000	14 910	25 910
Consultation	9 000	4 000	4 000	17 000
<b>TOTAL</b>	<b>153 906</b>	<b>107 966</b>	<b>104 414</b>	<b>366 286</b>

## CHAPITRE VIII.      Coordination et Fonctionnement

### Article 20 :

La tutelle du projet est assurée par le Ministère de la Santé, de la Solidarité et des Personnes âgées représenté par la Division Santé Familiale et Communautaire (DSFC).

### Article 21 :

L'exécution du projet est assurée par le personnel de la Vision Mondiale Internationale en collaboration avec les autorités médicale du Cercle de Koutiala. La coordination sur le terrain est assurée par la Direction Régionale de la Santé Publique et des Affaires sociales de Sikasso.

## CHAPITRE IX.      Rapports et Evaluation

### Article 22 :

Des rapports d'activités trimestriels élaborés par le personnel socio-sanitaire de Koutiala avec l'apport de Vision Mondiale Internationale seront envoyés à la Direction Régionale de la Santé Publique et des Affaires Sociales à Sikasso.

### Article 23 :

La Direction Régionale de la Santé Publique et des Affaires Sociales de Sikasso initiera en collaboration avec Vision Mondiale Internationale toutes les rencontres périodiques nécessaires.

### Article 24 :

La programmation des activités fera l'objet d'un calendrier annuel qui sera établi avec les autorités médicales de Koutiala.

### Article 25 :

L'évaluation du projet se fera à mi-parcours et à la fin du projet. Le Ministère de la Santé, de la Solidarité et des personnes âgées et Vision Mondiale Internationale décideront des modalités d'évaluation.

CHAPITRE X. Dispositions diverses.

Article 26 :

Les éventuels différends survenant dans la collaboration entre les deux parties feront l'objet d'un traitement à l'amiable.

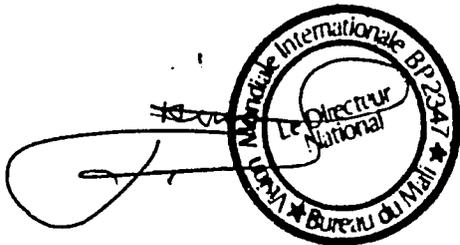
Article 27 :

Le présent Protocole d'Accord prendra effet à partir de sa date de signature par les deux parties.

Les amendements et additifs de ce Protocole d'Accord ne peuvent se faire qu'avec l'accord des deux parties.

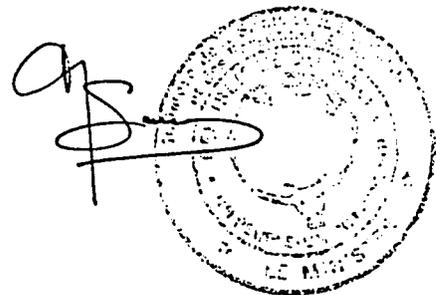
Fait à Bamako, le 17 SEP. 1982

LE REPRESENTANT DE VISION MONDIALE  
INTERNATIONALE - BAMAKO MALI,



Daniel COULIBALY.

LE MINISTERE DE LA SANTE, DE LA SOLIDA-  
RITE ET DES PERSONNES AGEES,



Commandant Modibo SIDIBE.

**APPENDIX 11**

**VITAMIN A SURVEY**

**VITAMIN A DEFICIENCY SURVEY  
IN WORLD VISION INTERVENTION  
AREA OF KOUTIALA**

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# **I. INTRODUCTION AND METHODOLOGY**

## **1.1. Introduction**

### **1.1.1. General Overview**

World Vision International has been carrying out a Child Survival Program in the Cercle of Koutiala in Mali for years. The main activities which were introduced in two arrondissements (Central and M'Pèssoba) are immunization, Control of Diarrheal disease (ORT), Growth Monitoring, pre and post natal surveillance of mothers (follow-up of pregnancy and birthing) hygiene and sanitation, training and reinforcement of technical competencies of community health agents, and birth spacing education. Target population is about 67.187 inhabitants. The Child Survival Program getting into a new phase, wishes to extend program by integrating vitamin A deficiency activities. Consequently an assessment of vitamin A deficiency status was planned to allow identification of appropriate strategies adapted to the area.

### **1.1.2. Vitamin A Deficiency Situation in Mali and in project Area**

According to World Health Organization (WHO), night blindness is considered endemic in Mali and the Corneal scars (caused by vitamin A deficiency) are usual (current)<sup>1</sup>. A few studies revealed vitamin A deficiency at risk areas throughout the country.

A survey carried out by Hellen Keller International (HKI) in 1986, revealed high rates of corneal scars in children aged 0 - 5 years, and also in children aged 5 - 10 years in Tombouctou and Segou regions. These surveys found that all corneal scars in young children and most of the time in elder children (71,4% of cases) appeared after a measles (bout) episode.

Bitot spot prevalence in rural area of:

- Sikasso Region, in less than 5 years was estimated at 0,5% (Study sample is 1000 children). This rate is the limitation line retained by WHO as a public health problem for Vitamin A deficiency.

- In the area of Macina, a field research carried by Academy for Educational Development (AED) indicates that night blindness is well known in the area and that pregnant women and young children constitute the vulnerable groups.

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<sup>1</sup>Rapport Technique OMS, 1982.

- A survey carried by IOTA in 1990 in the Cercle of Douentza revealed 9% of Children aged 4 - 7 suffering from night blindness. The transferred Conjunctival Imprint Test gave normal results in 57% of cases. The norm presently proposed by GARLIER is of 50%. A local terminology exists for each ethnic group living in this area.

In March 1990 an evaluation carried out by HKI in the Kolondièba Cercle on Vitamin A deficiency risk revealed that only 2% of children aged 6 months - 6 years present a high vitamin A deficiency risk that 9% of study sample present a moderate vitamin A deficiency risk (inferior to 4 days opportunities during the last week). These data although uneven suggest that Vitamin A deficiency is a serious problem in some regions of Mali and is likely to become a problem in others. In Mali in fact infant mortality rate is about 168% (UNICEF, 1990), one of the highest of the sub-region. In the project operating area, risk factors associated with vitamin A deficiency exist with relatively high frequencies. An evaluation carried out in July 1990 (AG BENDEGH: and al) revealed that the incidence rate of diarrheal disease is high (40% during the two weeks preceding the survey) the micro-nutrient malnutritions in the group the most at risk (12 - 23 months) present a prevalence of 64% (weight/age <-2 standard deviations), that the proportion of women who use a modern method of contraception is 5,6%. The Acute Respiratory infections and measles, although not evaluated are the causes for deaths of more than half the children aged less than 5 years<sup>2</sup>. The proportion of children aged 7 - 11 months who receive supplementary food is weak (36%).

The measles immunization coverage was 56% in 1999 in the project area. The rate though inferior to that necessary for collective immunity against measles remain acceptable but inferior to the national average (75%). In the Koutiala Cercle there exist few data demonstrating the extent of vitamin deficiency situation, but recent studies revealed that vitamin A deficiency remain a public health problem in the neighboring cercles and regions.

### 1.1.3. National Policy of vitamin A deficiency Control

A national policy of vitamin A deficiency Control in Mali was designed in August 1990. This program plans for a first phase of two years (Research phase) covering the cercles and regions of Segou and Sikasso, and will be extended to the rest of the country, the group targeted by this program being children aged 0 - 10 years and pregnant and breastfeeding women. The program targets two main objectives:

- To improve production, availability and consumption of food in general and particular those in vitamin A.
- To improve the level of technical competence of health and rural development agents in terms of vitamin A deficiency control process.

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<sup>2</sup> Enfants et Femmes au Mali, UNICEF 1989.

The activities to be carried out under the National Program did not start as date.

#### **1.1.4. Vitamin A deficiency Control Activities in the Operating Area of the Koutiala Child Survival Project**

Without specifically targeting vitamin A deficiency Control, World Vision Child Survival Project has been carrying out activities oriented towards reduction of nutritional problems.

- The activities targeted mainly the promotion of gardening and vegetables in some villages of the study area.

#### **1.2. Objectives**

- To determine the importance of vitamin A deficiency in children aged 6 months - 7 years.
- To identify food risk factors by using a semi-quantitative and qualitative consumption survey over children aged 6 months - 7 years.
- To make hypothesis on certain risk factors (nutritional status, socio-cultural constraints and family income).
- To make recommendations according to outcome of results on the strategies most appropriate to the study area.
- To provide baseline data for evaluating future programs.

#### **1.3. Methodology**

##### **1.3.1. Study Population**

The study will cover children aged 6 months - 7 years living in the study area and their mothers or persons responsible for their feeding since at least one week before the beginning of the survey.

- The qualitative survey of food availability and their seasonal variation will concern village counsel members or any other resource person living in the village for years (Teacher, Health agent, Agriculture Development agent).

### **1.3.2. Survey Method**

We proceeded by a single passage transversal survey by constituting 30 clusters for all the survey area (proportional probability method). In the Central arrondissement and that of M'Pessoba, about 60 villages have undergone the interview. For project priority considerations, Koutiala was excluded.

### **1.3.3. Choice of Indicators for Assessment of vitamin A deficiency**

We chose many approaches:

- a. The one based on systematic clinical test on the target group to determine the prevalence of hemeralopia, of Bitot's spots, of keratomalacia and corneal scars, according to the WHO criteria. This approach which was classically used presents some insufficiencies: the requirement of big samples which is costly and also mistake possibilities linked to the differential diagnosis of some ocular affections caused by vitamin A deficiency.
- b. Systematic ophthalmological examination coupled with an histological examination (Transferred Conjunctival Imprint Test: CIT), according to the method described by AMEDEE-MANESRE. This test which consist in classifying in two groups presents the advantage to require small scale samples with cheap technical material and simple colored elements. The interpretation of the results associated with those of the ophthalmological examination is sufficient and precise enough to detect the vitamin A deficiency within the population.
- c. Biological examinations. Biochemical analysis were the standard method traditionally used to determine the vitamin A status. The serum intake doesn't translate with precision the hepatical concentration, but can consequently inadequately reflect the actual availability of Vitamin A. Moreover this approach is costly and requires expensive technical material.

In the scope of this study, we wished to realize the research method associating ophthalmological examination with histological examination in order to evaluate vitamin A deficiency, mainly because of its precision and low cost. But constraints linked to the unavailability of appropriate material on the local market and mainly because of the time period the results would have taken to be ready (end of January 1992) prevented us from eventually ordering technical material to carry out the test (OIT). We therefore used the first approach (just the ophthalmological test) to determine the prevalence of vitamin A deficiency in spite of its limits. In fact this approach required an important sample size and the prevalence of xerophthalmia was defined according to the WHO criteria. The low prevalence of trachoma suspected in this region could have palliated the distortions linked to the differential diagnosis of various affections.

#### **1.3.4. Indicators and Survey Method Used to Identify the vitamin A deficiency Food Risk Factors**

##### **a) Food availability and their seasonal variation in the surveyed villages**

Information was collected with resource persons who have a good knowledge of available food in the surveyed villages. For all vitamin A rich foods, we will indicate the frequency of their availability by season. This quantitative approach of rough availability of vitamin A rich foods will allow us to understand some feeding practices of surveyed target population.

##### **b) Food consumption survey over children aged 6 months - 7 years.**

This is a semi-quantitative survey concerning a weekly follow-up of the consumption frequency of a group of food previously selected for their important intake in vitamin A and for presumed availability in the survey area. The selection of these food was made on the basis of data already available on food consumption in the Koutiala cercle (survey by SSE project Mali-Norvegia) and of selection made in the cercle of Kolondièba during the preliminary evaluation of vitamin A deficiency in March 1991. In this survey, we give for each child precision on the number of times the concerned food is consumed per day.

##### **c) Other information collected at the level of children and families targeted (analysis of risk factors).**

- We have taken anthropometric measurements of children aged 6 months 7 years covered by food consumption survey, in order to evaluate their nutritional status.
- Information were collected on mothers: knowledge of some ocular pathologies, on feeding taboos for children and on their family income.

#### **1.3.5. Size of sample**

- For systematic ophthalmological examination in order to define the prevalence of vitamin A status, we have considered a minimum of 2500 children from 6 months to 7 years old which makes an average of 84 children by cluster.
- Among these an average of 500 children were selected on a random basis for food consumption survey, which makes about 17 children by cluster.
- Persons responsible for children feeding covered by the food consumption survey

were interviewed on the questions related to the knowledge of xerophthalmia, and to familial income (semi-quantitative estimates).

### **1.3.6. Resources**

#### **a) Human**

- The survey coordination, the design of the questionnaires and the drafting of the report were realized by an epidemiologist (Dr. Mohamed Ag Bendesh) and a nutritionist (Mr. Modibo M Diarra).
- The ophthalmological survey was carried by an ophthalmologist, Chef de Service of Operation Yeelen in Sikasso (Dr. Moussa Ag El Moustachild).
- The food consumption survey was accomplished by an epidemiologist Dr. Aboubacrine Maïga).
- Data collection and treatment were accomplished by a demographer computer scientist of INRSP (Mr. Nangouro Sanogo).

#### **b) Equipment**

- The ophthalmologist examination was made by the magnifying glass. The information were registered on a questionnaire by compound.
- The other survey used questionnaires and the measurements required a scale (both vertical and horizontal, and a Salter scale (BW 250).

#### **c) Logistical support**

This was completely provided by World Vision International Koutiala.

### **1.3.7. Data treatment.**

Data was entered and treated on DBASE, SPSS, EPI INFO, ANTHRO. Thus the directories INFANT, DBF MERE, DBF and OPATAL DBF, were created on DBASE to collect information. After this operation, these directories were transferred in the first time from DBASE to EPI INFO for tabulation of frequencies. Then, the same directories were transferred to SPSS for statistic operations from IPSS to ANTHRO for anthropometric data analysis.

Note that we didn't create any directory data analysis at village level, because it had too many variables in the one hand and in another because the observation numbers is not important (20 villages).

This part of analysis was hand written.

### **1.3.8. Data Analysis**

The food consumption frequency survey used the same analysis method as that developed by the preliminary evaluation of vitamin A deficiency in the cercle of Kolondièba (David Rosen (VITAP/HKI) and al. March 1991).

So two indicators of vitamin A rich food week by consumption frequency were chosen as criteria to define a threshold of risk vitamin A deficiency in survey children. It was about:

- a) Weekly consumption of vitamin A rich foods equal or inferior to 0 day/occasion in more than 5% of target children aged 6 months 7 years.
- b) Weekly consumption of vitamin A rich food equal or inferior to 6 days/occasions in more than 15% of target population aged 6 months 7 years.

These vitamin A rich food consumption criteria from 0 to inferior 7 days/opportunities per week were determined according to studies described in the report of the survey carried in Kolondièba in March 1991. These indicators for weekly vitamin A rich food consumption frequency will be used as a baseline for evaluating latterly the impact of these interventions.

## **II. RESULTS**

### **2.1. Study of vitamin A deficiency**

This aspect of evaluation is based mainly on the results of the ophthalmological examination (clinical signs).

#### **2.1.1. Xerophthalmia**

##### **a) Hemeralopia (XN)**

52 cases on 2632 examined children, or 2% (I.C: 1,14-2,86).

This result is significantly different from the WHO norm which is 1%

**Table 1.** Distribution of hemeralopia according to age. Koutiala 1992 (see page 10)

	NUMBER	CASES	PREVALENCE %
6-11	232	00	00
12-23	462	04	0.9
24-35	403	02	0.5
36-59	877	27	03
HEMERALOPIA AGE GROUPS (MONTHS)	651	19	2.9
TOTAL	2631	52	02

Children age groups 36- 84 months are more vulnerable (3% specific prevalence) than those of 6-35 months (0,7%). The elder (36-59 months) present four times more the risk to suffer from hemeralopia than those of 6 - 35 months (CHI deux=28.37, ddl=1).

**b) Bitot's spot.**

8 cases detected out of 2632 examined children, or 0,3% prevalence; this result is not significantly different from the WHO norm which is 0,5%.

**c) Keratomalacia (X 3B)**

No case of active keratomalacia was detected within the surveyed sample. Considering the value of the norm (0,01%), no interpretation could be made. On the sampling scope, a bigger sample would have been necessary to draw conclusions on the signification of this indicator.

**d) Corneal scars (XS)**

6 cases detected out of 2632 examined children or 0,2%. This result is significantly different from the WHO norm which is 0,05%. Anyway, this result should be interpreted cautiously as it concerned a retroactive diagnosis of corneal scars linked to xerophthalmia. It was therefore difficult to make a distinction between cases caused by vitamin A deficiency and cases due to other causes.

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### **e) Prevalence of global Xerophthalmia**

This concerns all cases hemeralopia and/or of: a) Bitot's spot, b) corneal xerosis.

57 cases of xerophthalmia detected out of 2632 examined children, or a prevalence of 2,2% (I.C=1,34-3,06).

#### **2.1.2. Other ocular diseases**

##### **a) Trachoma**

No case of trachoma detected within the examined sample

##### **b) Tropical endemic conjunctivitis limbo**

17 cases detected out of 2632 examined children or a prevalence of 0,6%.

##### **c) Keratitis**

2 cases detected out of 2632 examined children ,or a prevalence of 0,1%.

##### **d) Miscellaneous**

Some scarce cases of conjunctivitis and of ocular traumatism were detected. One child presented a generalized Bitot's spot.

#### **2.1.3 Mothers' knowledge**

##### **a) hemeralopia**

A high prevalence was observed in the survey area but note that the diagnosis is based only on parents' interview. The pathology is although well known since 95% of interviewed parents declared that there exist a specific word to define the disease. This is an indication of the existence of a past or recent status of vitamin A deficiency within the children target population.

Among those who recognize that the disease exists and has a name, 252 out of 253 persons interviewed cited the name of the disease, or 99,6%.

Table 2: frequency of traditional remedies used to cure hemeralopia.

TYPE OF REMEDY	USAGE MADE	NUMBERS	FREQUENCY
Liver (domestic animals)	Eat at night Instil into eyes	61	23,5
Modern medicines (Red capsules, other)	orally	16	06,2
Carrots only or associated with other vitamin A rich (Baobab leaves) food	Eat raw or wash eyes with it	05	02,3
"Djambe" Savage tree	Fumigation	02	0,8
Other remedies	Sit down near a lamp	01	0,4
Don't Know any remedy	-	174	66,8
TOTAL	-	260	100

More than half of the interviewed mothers don't know any treatment for hemeralopia. The frequency of treatment with animal products (liver) is 24% against only 6% for those whose use modern medicines (treatment within the health structures). Usage of vitamin A rich green vegetable is low (2%).

Otherwise the proportion of mothers who don't know the cause of hemeralopia is 85%. Among those who cited a cause for hemeralopia, the proportion of mothers who linked it to vitamin A deficiency is of 10% (table 12 annex).

#### b) Corneal scars

Among 6 cases of detected corneal scars, the interviewed persons made a link between the observed clinical signs and a disease affecting everybody in 2 cases, or 1/3.

4 cases out of 6 interviewed mothers recognized the existence of a traditional treatment of the disease which left corneal scars, or about 2/3 of cases. This treatment is either a traditional remedy or a medicine such as ophthalmological ointment.

#### 2.1.4. Conclusion

The analysis of these results reveal a vitamin A deficiency status among children aged 6 months 7 years in the survey zone of World Vision. This vitamin A deficiency is put into evidence by a high prevalence of hemeralopia (2%) and in a lower measure by a prevalence of Bitot's spot.

The results of the interview on xerophthalmia revealed a bad knowledge of the causes of hemeralopia and mainly an under-usage of traditional remedies based on vitamin A rich food although produced locally.

Moreover the survey was carried in December which corresponds to the month of gardening and thus to an availability period of vitamin A rich food. Under these conditions, the vitamin A deficiency should be lower compared to the season July-August during which food availability is scarce.

So, if we have to consider this seasonal variation, the deficiency would be more serious during a period of food scarcity.

### 2.2. Health food and socio-cultural risk factors linked to vitamin A deficiency

#### 2.2.1 Nutritional status

During the study, 538 children were surveyed by using measurements which allowed to calculate three main anthropometric indicators: weight/height, weight/age and height/age.

We considered malnourished any child aged 6 months 7 years whose value of the three indicators is inferior to -2 standard deviation (expressed in Z score).

Table 3: Nutritional status according to the 3 indicators: weight/age, weight/height and height/age.

MALNUTRITION CASE		PREVALENCE %
Weight/age (n=359)	139	25.79
Weight/height (n=359)	37	6.9
Height/age (n=359)	188	34.88

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Among children aged 6 months 7 years, the acute malnutrition rate (W/H inf- 2 SD) of 6.9% is low while chronic malnutrition rate is very high and reaches 35% prevalence.

According to age, children aged 12-23 months suffer more from severe malnutrition with a prevalence of 19 cases out of 81 (23.45%) against respective prevalence rates of 4.9% among children aged 6-11 months and of 11.2% among those aged 24-35 months and only 1.7% among 60-84 months.

Consequently the acute malnutrition prevalence rates are very high among children aged 12-23 months and high among those aged 24-35 months (table 13 annex).

According to the indicator height/age, children aged 12-59 months suffer more from chronic malnutrition with a prevalence rate of 42.74% followed by those aged 60-84 months with 19.72% prevalence rate (table 13 annex).

So children at acute malnutrition risk are those of 12-23 months followed by children aged 24-35 months. Children at chronic malnutrition risk are those aged 12-59 months.

### 2.2.2. Nutritional status according to the living area of children with or without xerophthalmia problem

The whole survey area was divided into zone A (with xerophthalmia prevalence higher or equal to 1%) and a zone B (with a prevalence inferior to 1%). This summary is made in table 14 of annex.

Table 4: Repartition of Nutritional status according to zone with and without xerophthalmia

	WEIGHT/AGE		HEIGHT/AGE		WEIGHT/HEIGHT	
	Inf -2 SD	%	Inf -2 SD	%	Inf -2 SD	%
ZONE A Sup = 1%	102	28,02	131	35,93	25	6,87
ZONE B Inf to 1%	37	21,26	37	32,76	12	6,89
THRESHOLD STATIS SIGNIF						

Malnutrition prevalence rates according to indicators weight/age and height/age seem to be higher in the zones or villages where xerophthalmia present a public health problem while the severe malnutrition prevalence rates (weight/height) are the same no matter the surveyed zone.

### 2.2.3. Nutritional status according to WATERLOO classification

Table 5: WATERLOO classification

Type of Malnutrition	Numbers	%
Acute Malnutrition (wasting)	19	3,5
Chronic Malnutrition (stunting)	170	31,5
Chronic and acute Malnutrition	18	3,3
Normal children	332	61,7

Children suffering just from chronic malnutrition (stunting) are more frequent (31,5%) against only 3,5% of children suffering just from acute malnutrition (wasting).

Half of children suffer from acute malnutrition associated with a chronic pattern.

### 2.2.4 Feeding pattern:

Table 6: Feeding pattern of children according to age

Type of Malnutrition	Numbers	%
Acute Malnutrition (wasting)	19	3,5
Chronic Malnutrition (stunting)	170	31,5
Chronic and acute Malnutrition	18	3,3
Normal children	332	61,7

Children elder than 6 months exclusively breastfed represent 5%. Among them 36% have more than 1 year.

The proportion of infants 6 months -11 who are exclusively breastfed is of 44%.

The rate of supplemented feeding in appropriate period (infants 6-9 months who receive breast milk and a supplement) is of 33%.

The rate of continuing breast feeding (1 year) or the proportion of children aged 12-15 months who are breastfed is of 91% against only 53% for the rate of on-going breast feeding (2 years) among children aged 20-23 months.

### **2.2.5. Aspects related to family income (table 15 annex)**

Most of surveyed families belong land (culture, sorgho, corn) 259 out of 265 or 97.7%. The average number of private lands is of 3.56 +/-3.68.

- Only 71 out of 265 belong vegetable gardens or 27.5%.
- 230 families out of 265 belong poultry or 87%.
- 237 families out of 265 possess laboring cows or 89.4%.
- 221 families out of 265 possess cattle (sheep, goat cow) or 83%.
- 204 families out of 265 possess asses, or 77%.
- 241 families out of 265 possess by bicycles, or 90%.
- 187 families out of 265 possess radio or 71%.
- 254 families out of 265 possess a bulb lamp or 96%.
- 209 families out of 265 own at least one cart or 76%.
- Only 9 families out 265 benefit from electricity or 3%.
- 3 families out of 265 own a refrigerator or 1.1%.

### **2.2.7 Feeding taboos for children**

Liver was the most frequently cited, followed by local beer, snake meat, silur, toh for sick children and mango. According to mothers, these foods exacerbate some diseases or make the child blind. Unlike other studies (Kolondièba 1991) egg was not cited among children feeding taboos. According to mothers mango is forbidden when the child suffer from cough. (table 16 annex).

## 2.3. Identification of vitamin A deficiency food at risk factors.

### 2.3.1. Consumption of vitamin A (frequency consumption survey).

A total of 268 mothers were interviewed only 10% of whom are aged more than 44 years. We collected among these mothers data on the vitamin A rich food consumption. Information on this consumption was collected over all the children alive in the surveyed families (or 539 children).

During the analysis we have excluded the "tô" and the porridge "seri", basic food typically consumed by the population in the concerned area. The introduction of these two foods allow to make a quality control of data collection. Hotchili (pimento) although rich in vitamin A was excluded from results since the quantity used in the sauce is generally small particularly when it is prepared for the child.

Among interviewed mothers the predominant ethnic group is Minianka (66,4%) followed by the Bambara (22,6%). They are cultivators in more than 170% cases.

a) The weekly consumption of vitamin A rich food by children aged 6 months 7 years is an average of 25.26 + or - 17.2 days/occasions per week. This average is considered as sufficient to satisfy vitamin A needs of most of young children aged 6 months to 7 years.

By dividing foods into four main groups, we obtained the following consumption results:

table 7: Frequency of vitamin A rich food groups A (the most frequently used foods)

	GREEN LEAVES	MILK PRODUCTS	MEAT EGGS FISH	FRUITS AND VEGETABLES
ZONE A (n= 364)	331 (90.48%)	242 (66.48%)	333 (91,5)	265 (72.8%)
ZONE B (n=174)	165 (94.8%)	119 (68.39%)	165 (94,8)	160 (91.95%)

The consumption frequency of at least one food seems to be higher in zone B than in zone A.

Note that the latter has a higher xerophthalmia prevalence.

b) Average number of consumption day per week, per vitamin A rich food group and per child.

**Table 8:** Repartition of foods according to their average number of consumption days per week.

Average number of days/week/child			
-1	1-2	3-4	5-6
carrots, leaves, sweet potato, egg, turkey, papaya, palm oil, aubergina leaves, bean leaves, fruit (zaban) melon, néré, powder cheese	squash, liver, milk cream, mango, sweet potato (yellow) cow butter meat	fresh milk, dried fish	baobab leaves, onion leaves

Food which have the higher average number of the highest consumption days are: baobab leaves (6 days average), onion leaves (5 days average). The animal products (dried fish and milk) have an average of 3 to 4 consumption days per week and per child.

Carrots, eggs, palm oil, bean leaves and aubergina had less than one day average consumption during the week having preceded the survey.

c) Frequency of vitamin A rich foods weekly consumption

**Table 9:** Frequency of weekly food consumption according to the number of days/occasions.

DAYS/OCCASIONS per week	NUMBER OF CHILDREN		PERCENTAGE %
	6 months	7 years	
0	36		07
1-5	00		00
6-7	00		00
more than 7	503		93
TOTAL	539		100

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36 children out of 539 revealed a vitamin A deficiency diet (0 day/occasion) during the week preceding the survey, or a prevalence of 7% . This percentage is significantly higher than the 5% considered as a criteria for vitamin A deficiency risk.

Note that all children except for two (2) are breastfed (28 are exclusively breastfed). In this context, it is possible that prevalence had been over evaluated as breastfeeding, although insufficient for child after 6 months, contains vitamin A.

- if we consider the weekly vitamin A rich food consumption equal to less than 6 days/occasions, we have also 7% of children, two times weaker than the 15% norm criteria for vitamin A deficiency risk.

- Breastfed children having more than 6 months revealed a vitamin A deficiency diet compared to those who are weaned..

- 34 children out of 116 breastfed benefiting 0 day/occasion in the week which has preceded the survey or 29.3% against only 0.6% of weaned children (who are not breastfed) present a severe vitamin A deficiency. Most of children (93%) had consumed vitamin A rich foods (6 or more days/occasions per week). Therefore more than 90% of children had consumed a vitamin A rich food at least once a day or seven days per week.

If we consider only weaned children (not breastfed) as vitamin A deficient, having 0 day/occasion of vitamin A rich food consumption, we get a proportion of 2 cases over 539, or 0.3%.

d) Frequency of vitamin A rich foods consumption.

Table 10: frequency of vitamin A rich foods consumption (at least once during the reference week).

FOOD	NUMBER CHILDREN HAVING CONSUMED AT LEAST ONCE A WEEK	PERCENTAGE %
Squash	422	80.2
Liver	273	51.9
Baobab leaves	320	60.8
Carrots	147	27.9
Mango	484	92.0
potato leaves	14	02.7
eggs liney	92	01.7
Karitca (shee), butter	44	08.4
Papaya	49	09.3
Red potato	457	86.9
Palm oil	59	11.2
Meat	265	50.4
Cow butter	30	05.7
Onion (leaves)	446	84.8
Aubergina (leaves)	134	25.5
beans (leaves)	428	81.4
Beans (leaves)	103	19.6
Fruit (zanban)	60	11.4
Melon	36	06.8
Cheese	09	01.7
Néré (powder)	00	00
Dried fish	00	00
	27	05.1
	474	90.1

Baobab leaves which present the highest average number of weekly consumption days (6 days) is the food which has been consumed by the quasi totality of children (more than 90%) followed by dried fish, meat and onion (leaves) which are consumed at least once a week preceding the survey by 81% of children, have an average high number of consumption days (5 days average per week).

So the most important vitamin A rich foods in the feeding of children in this zone during the survey period are green leaves (baobab and onion leaves) which are used most of the time in the sauce of the main daily meals. This intake will concern only children who have their choice of solid foods:

- Food consumption favorising vitamin A consumption seems acceptable. Indeed more than half of the surveyed children (61%) consumed fresh milk during the preceding survey. 87% were administered foods prepared in shee butter and 6% in palm oil. The average number of daily consumption per child is 5 days for shee butter.

- Consumption of food containing vitamin A (animal origin products rich in protein) is good. Dried fish and fresh milk with respective frequencies of consumption of 90% and 61% have high average number of weekly days (an average of 4 to 5 days). Liver which was consumed by at least half of the surveyed children has a low average number of consumption days (one day per child and per week).

2.3.2. Availability of vitamin A rich foods during the year in the surveyed villages.

Table 11: Calendar of seasonal availability of vitamin A rich foods in the surveyed area.

MONTHS	J	F	M	A	M	J	J	A	S	O	N	D
FOODS												
Squash	—	—	—	—				—	—	—	—	—
Liver 1	—	—	—	—	—	—	—	—	—	—	—	—
Fresh milk 2	—	—	—	—	—	—	—	—	—	—	—	—
Cheese												
Butter	—	—	—	—	—	—	—	—	—	—	—	—
Cream 3	—	—	—	—	—	—	—	—	—	—	—	—
Carrots 4	—	—	—	—								
Mango	—	—	—	—	—	—	—	—				
Melon												
Baobab leaves	—	—	—	—	—	—	—	—	—	—	—	—
Manioc leaves 6												
Bean leaves					—	—	—	—	—	—	—	—
Shee leaves					—	—	—	—	—	—	—	—
Aubergina leaves 7						—	—	—	—	—	—	—
Onion leaves 8	—	—	—	—	—	—	—	—	—	—	—	—
Sweet potato leaves												
Corn	—	—	—	—	—	—	—	—	—	—	—	—
Palm oil 9	—	—	—	—	—	—	—	—	—	—	—	—
Aubergina				—	—	—	—	—	—	—	—	—
Turkey eggs												
Fish	—	—	—	—	—	—	—	—	—	—	—	—
Papaya 5	—	—	—									

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1. Not available at N'Ganian, Fonfana, Kolomosso, Sintela, Zebala.
2. Available only during June to September (Zandjela Signe, N'Goloniasso, Kolomosso, Sintela, Denguena, Debela, Ouelenguena, Pakasso).
3. Not available at N'Ganian, Diela, N'Tossoni, Sintela, Denguena, Zansoni.
4. Available at Debela, Zandjela, Fonfana, Djela, N'Goloniasso, N'Tossoni, M'Pessoba, Peguena, Ferme, Zanzani, Zebala, Cincina.
5. Not available at N'ganian, Bamara, Signe, Kolomouso, Niena Sintela, Peguena, Zamblala, Zebala, Yafola et M'Pakasso.
6. Scarcely available
7. Available in some villages
8. Available from November to March under fresh form and from April to October under dried form.
9. Available only in Dougouniana

#### 2.4. Critical Analysis of Encountered Difficulties and Constraints

- a. In the assessment of vitamin A deficiency, we could not associate the clinical examination to the histological test (Conjunctival Imprint Test CIT) which led us to consider a big sample of children (a minimum of 2500).
- b. The following elements can limitate the results of the survey on children food consumption:
  - The season during which the survey took place if the frequency of vitamin A deficiency rich food consumption is found to be reasonable during that season, it can present another pattern during the soudure period (August). The representativity of the considered sample for the consumption survey is subject to error since all the children aged 6 months - 7 years of the surveyed families were integrated into the sample. In this case the effect of identic feeding pattern for all children of the same family is noticeable.

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The procedures of the vitamin A deficiency food consumption can lead either to an over-estimation or an under-estimation of the consumption of certain foods. In the case of the survey, we have estimated for every type of food, the number of weekly consumption days without having precised the average quantity of food consumed daily.

The methods of conservation and preparation of various foods have not been defined. But some modes of preparation (cooking methods) can significantly diminish the Retinol or Beta Carotene intake of vitamin A deficiency rich foods.

- The norms used to define the risk of vitamin A deficiency are arbitrary set up and suppose there exists a direct link between vitamin A rich food consumption and the high levels of retinol in the blood serum, which is to be proved in the malian context.

- The most used Vitamin A rich foods are most of the time consumed in the sauce, and thus really consumed in small quantity (baobab leaves, onion, dried fish, powder).

### **III. CONCLUSIONS**

#### **3.1. Vitamin A Deficiency**

The survey carried out in the operating zone of World Vision in December 1991 covered 2632 children aged 6 months - 7 years.

The discovery of a vitamin A deficiency situation among children of the operating zone of World Vision in Koutiala was made through a clinic criteria: hemeralopia with a prevalence of 2% +/- 0.58. This result is reinforced by the Bitot's spot prevalence (0.3%).

#### **3.2. Identification of vitamin A deficiency food risk factors**

The survey of the frequency of vitamin A rich food consumption covered a sample of 539 children. The average weekly consumption of vitamin A rich foods is 25.26 +/- 17.2 days/occasions.

This average is in principle widely enough to satisfy children needs in vitamin. 36 cases out of 539 children have a diet deficiency in vitamin A (0 day/occasion during the preceding week) or 7%. Among these, 25 children are exclusively breastfed, or 78% against only 2 who are weaned (one breastfed). Thus 2 weaned cases present a diet very deficient (0 day/occasion) or 0.3%. The foods which have a high average number of consumption days per week are: baobab leaves, onion leaves, dried fish and fresh milk.

The first three (baobab leaves, onion leaves and dried fish, powder) are consumed in small quantity in the familial meal sauces.

Fat foods necessary to the absorption of vitamin A are consumed with a frequency sufficient for most of the children population.

The health and socio-cultural risk factors are numerous in the survey zone.

On the health scope, chronic, severe and moderate malnutrition H/A (inferior to 2 SD) is very high with a prevalence of 35%. Less than 10% of children suffer from acute malnutrition (W/H information to 2 SD).

Diarrheal disease and acute respiratory infections are the main morbidity causes for less than 5 years old children. The measles immunization coverage remains yet low (56%).

### Socio-cultural plan

Hemeralopia is known by the totality of the population and has a specific name in local languages (Bambara and Minianka). Although the causes of this disease are less known by the interviewed population (ignorance of the relation between hemeralopia and food).

The late introduction of food supplements mainly solid is confirmed by 5% of 6 months elder children exclusively breastfed.

The rate of supplemented feeding in appropriate time is low (33%). Unlikely the rate of continuing breastfeeding is high (91%) between 12 and 15 months. This rate decreases quickly between 20-23 months with a reduction rate 41%.

No surveyed child is artificially fed.

Some feeding taboos are still practical specially when it concerns a sick child.

Even if the feeding practices working in favor of vitamin A deficiency risk are relatively weak, the socio-cultural and health factors which can exacerbate this risk are numerous. Could this justify the vitamin A deficiency status of pre-school children during the season of "great" food availability.

### 3. Seasonal availability of vitamin A risk foods

There is an availability of vitamin A rich foods (about 17 foods) some of them are available during all year: fresh milk, baobab leaves, onion leaves, yellow corn and dried fish. Among these 17 foods, five (5) are of animal origin and twelve (12) of vegetable origin. (Table 11:) Mango, squash, green leaves, corn, eggs and dried fish are available in all the surveyed zone (all villages). The most favorable season for fresh food availability is the rainy season (July-September). During the cold season (December) we can also find fresh foods but also dried ones: aubergina, manioc and palm oil leaves are available in some scarce villages.

### 4. Economic plan

Most of families own cyclomotors: 90% against 78% who own carts. 71% own radios.

The analysis of these aspects lead to new needs. The cart which can contribute to an increase in the family income is less frequent in families than bicycles. The frequency of families which own a radio set is not really different from those which own at least a cart.

Probably, the benefit from sales is quite less used to purchase food and medicines. We can thus deduct that the incomes of the head of families are oriented towards new needs allowing them to acquire a different social status.

The analysis of vegetable consumption doesn't show a difference in consumption according to possession of a vegetable garden. Vegetables are therefore probably used for sale and are scarcely consumed.

## IV. RECOMMENDATIONS:

Two main intervention strategies can be implemented.

1. Put in place a system of detection and of systematic treatment of xerophthalmia (hemeralopia, Bitot's spot, xerosis. Keratomalacia).

This system of detection treatment should be integrated to growth monitoring of pre-school children (the nutritional surveillance is well developed in the zone). In this case the health agents responsible for monitoring activities should be trained on cases definition at any level of the pyramid (diagnosis criteria). Concerning pregnant women, detection and treatment activities should be integrated into pregnancy follow-up. The health agents responsible for pre and post natal consultations should be trained in order to make xerophthalmia detection systematic during pre-natal consultation. This implicates the introduction of some vitamin A deficiency variables into the growth monitoring and pregnancy monitoring registers.

In a second time, the systematic detection and of treatment of xerophthalmia can be

integrated into immunization activities (mobile or fixed post) in the scope of EPI (Expanded Program of Immunization). So the vaccination registers will be slightly modified to also allow data collection. The treatment schemes recommended by World Health Organization (WHO) can be used.

## **2. Nutritional Education.**

- Increase the level of knowledge of mothers in terms of xerophthalmia by insisting on its relation with vitamin A rich food.
- Improve mothers' knowledge on carotene and vitamin A rich foods and a better knowledge of vulnerable groups needs. In this sense we have to take into account foods locally available and easily acceptable (for instance green leaves, fruits and vegetables).
- Promote the regular consumption of carotene and vitamin A rich foods.
- Reinforce the best practices of weaning (food supplementation from 6-7 months) and extended breastfeeding.
- Reinforce the importance of vitamin A rich food during certain diseases episodes when restrictions are observed (diarrhea and coughing for instance).
- Improve the infant feeding practices following WHO and national programs recommendations.
- Improve the production and provision of vitamin A rich foods ( development of vegetable gardening, and livestock).
- Reinforce the health programs targeting decrease in the risk of vitamin A deficiency linked to the sanitary situation of the cercle (EPI), Diarrheal disease Control Program, control of ARI, control of micro-nutrient malnutrition.

## ANNEXES

Table 12: hemeralopia causes according to mothers' opinion

POOR CAUSES	NUMBER	FREQUENCY (%)
Poor feeding (child, mother)	06	02
Lack of corporal hygiene	04	02
Other causes (superstition)	31	12
Don't know	218	84
Total	259	100

Table 13: Repartition of nutritional status according to children age

	n	Weight/Age		Weight/Height		Height/Age	
		Case	%	Case	%	Case	%
6-11 m	41	07	4.9	02	04.9	09	22.0
12-23 m	81	40	49.4	19	23.5	37	45.7
24-35 m	95	27	28.4	06	06.3	36	37.9
36-59 m	175	42	24.0	03	01.7	77	44.0
60-83 m	147	28	19.1	07	04.8	29	19.7
Total	539	139	25.8	37	06.7	188	35.0

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Table 14: Distribution of night blindness according to village

VILLAGE	OBSERVED CASES	EXAMINED CHILDREN	PREVALENCE %
M'Pèssoba	04	174	2.3
Myena	02	169	01.2
Bamana	00	92	00
Cinzana	05	84	06
Danzana	00	88	00
Debela	01	94	01.1
Dempela	06	87	06.9
Denguena	00	85	00
Diela	00	72	00
Dougouni	00	87	00
Ferme	01	84	01.2
Fonfana	02	88	02.3
Kolomosso	01	87	01.1
Kor N'tossoni	00	85	00
N'Ganian	02	89	02.2
N'oloni	06	91	06.6
N'tossoni	03	100	03
Ouelenguena	02	86	02.3
Pakasso	00	86	00
Peguena	00	96	00
Signe	01	84	01.2
Sintela	00	85	00
Sounguela	03	105	02.9
Yafola	01	82	01.2
Zamblala	00	88	00
Zandjela	04	89	04.5
Zanzoni	02	86	02.3
Zébala	06	90	06.7

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**Table 15:** Distribution of families according to some income indicators (n=265)

TYPE	SIZE OF FAMILY	PERCENTAGE %
Lands	259	97.7
Vegetable gardens	71	27.5
Poultry	203	87
Laboring cows	237	89.4
Cattle	221	83
Ass	204	77
Cyclomotors	241	90
Radio set	187	71
Lamp	254	96
Cart	209	79
Electricity	09	03
Refrigerator	03	01.1
Total	-	-

**Table 16:** Distribution according to cited taboo

Taboo	Number of mothers
Liver not indicated	12
Snake meat	06
Silur (fish)	05
Local beer	06
Other foods (meat mango)	04
Other	09
Total	42

**APPENDIX 111**

**JOB DESCRIPTIONS AND RESUMES**

## Job description

Job title: Project Manager

Job purpose: To plan organize, lead the Koutiala Child **survival** project 's successful implementation.

### Responsibilities:

1-plan, organize the implementation of the CS extension **according** to the parameters set by MOH, the project proposal to USAID, and the WVI guidelines for child survival.

2-Act as a principal liason between the project and WVI, USAID. WARO and other non malian entities.

3-Superwise the activities of technical and administrative **staff**.

4-Monitor the financial status of the project.

5-Prepare and submit monthly and other narrative **reports**, as necessary.

6-Coordinate technical input for the project.

7-Perform other task and responsibilities assigned by the **General** Operation Manager.

8-Ensure networking with MOH,WHO, to reinforce the **existing** collaboration.

### Required ualifications:

Post graduate degree in public health or an equivalent **experience** in the field.

Fluency in english, french, written and oral

Committed christian. Preferably several years **experience with world** vision.

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C U R R I C U L U M V I T A E

NOM et PRENOM : David K. Coulibaly

DATE DE NAISSANCE :

EDUCATION

- 10/1967 - 6/1973 : 1er Cycle fondamentale - Santoro, San C.E.P, Juin 1973.
- 10/1973 - 6/1976 : 2e Cycle fondamental - Babou Dioni, San D.E.F, Juin 1979
- 10/1976 - 6/1979 : Lycée de Badalabougou, Bamako BAC, Série D, Juin 1979.
- 10/1979 - 6/1985 : Ecole Nationale de Médecine et de Pharmacie, Point G, Bamako. Diplôme d'Etat de docteur en médecine.

Expérience professionnelle

- 11/1985 - 10/1986 : Chirurgie B hôpital du Point G, Bamako, BP 333 Interne de chirurgie.
- 02/1987 - 6/1987 : Cornerstone, Kayes, BP : 211. Formateur d'agents de santé communautaire.
- 8/1987 - 11/1987 : Direction régionale de la santé Gao - Médecin sans frontière "projet magasin - santé" gestion des médicaments.
- A partir du 12/1987 jusqu'à nos jours : Projet Survie de l'Enfant - Vision Mondiale BP 113 Koutiala, Chef d'équipe technique - Superviseur du PEV.
- 26 Mai - 4 Juin 1988: A participer au cours national sur le PEV organisé à Bamako par le Ministère de la Santé et l'OMS au Mali.
- 18-24 Juin 1988 : A participer à "African Regional Child Survival Workshop" on the theme "Community participation for child survival" organisé au Kenya par l'USAID et AMREF.
- 31 Oct - 5 Nov. 1989 : A participer au "Training of trainers organisé par MAP International en Floride (USA).

## JOB DESCRIPTION

Job Title: PROJECT ADMINISTRATOR

Job Purpose: To assist the CSP Manager in the administration responsibilities, personnel and logistics.

### Specific Tasks:

1. Assist the Project Manager in the identification and recruitment of local staff, preparation of contract and general management of personnel issues including disciplinary action.
2. Supervise the administrative support staff.
3. Act as a principal liaison between the project and local authorities
4. Recommend alternative solutions to problems and courses of action regarding issues that confront the Child Survival Project.
5. Responsible for finance, transport, purchasing, logistics and office support.
6. Prepare regular and ad hoc narrative and statistical reports, plans of action and other papers as necessary.
7. Perform all other tasks and responsibilities assigned to him by the Child Survival Manager.

### Reporting Responsibilities

Reports directly to the Child Survival Project Manager.  
Supervises the administrative support staff.

### Required qualifications

College training in administration.  
Previous work experience in the management of community development programs.  
Fluency in speaking, reading or writing French, English and Bambara;  
Preferably a Malian.  
Committed and mature Christian.

5/1

C U R R I C U L U M V I T A E

NOM : TIENOU

PRENOMS : Jean-Calvin

DATE ET LIEU DE NAISSANCE :

ECOLE PRIMAIRE : Missions Catholiques Boura et Mougna, Cercle de Yorosso (Sikasso) 1963-1968 1ère - 5e Année.

COLLEGE PRIVE : Mission Catholique San (Segou)  
1968-1974 (6e - 9e Année) Obtention du DEF (Diplôme d'Etudes Fondamentale).

LYCEE PUBLIC DE SEVARE : (Mopti) : 1974-1977 Obtention du Baccalauréat Malien (1ère - 2e Partie) Serie Philo-Langues.

ETUDES UNIVERSITAIRES : Ecole Nationale d'Administration (ENA) Bamako, spécialité Administration Publique.  
1980-1984 car scolarité perturbé par mouvements estudiantins. Diplômé en Administration publique à l'ENA.

CONNAISSANCE EN ANGLAIS : Assez bonne.

JANVIER 1981-MARS 81 : Agent de commercialisation du coton au compte de l'Organisme Rural de Developpement (l'O.R.D) de Bobo-Dioulasso la Préfecture de ORODARA (Burkina-Fasso).

3 MOIS DE STAGE : A l'Opération Haute-Vallée dans le cercle de Koulikoro dans le cadre de mon mémoire de fin de cycle (thème : l'incidence socio-économique de l'Opération Haute-Vallée dans le cercle de Koulikoro 1-1-84 au 1-3-84.

3 MOIS DE STAGE : Au cercle de Koulikoro dans le cadre de l'Administration Générale encadré par le Commandant de cercle 1-7-83 au 30-7-83.

ASSISTANT AU DIRECTEUR : Du projet de Secours d'urgence Kayes-Nioro Vision Mondiale Octobre 1984.

ADMINISTRATEUR : Des Centres d'Alimentation Communautaire de Vision Mondiale Gao-Ménaka : 1-2-85 au 30-9-1986.

6 MOIS DE FORMATION : Théorique et pratique d'informatique sur micro-ordinateur à la Direction Nationale de la statistique et de l'informatique - DNSI Juillet 87 - Decembre 87.

1ER OCTOBRE 1988 AU 7 MAI 89 : Agent de Saisie (pupitre) du micro-ordinateur bureau central de recensement (BCR) DNSI (Ministère du Plan)

A PARTIR DU 7 MAI 1989 : Administrateur du Projet Survie de l'Enfant de Vision Mondiale à Koutiala.

Vision Mondiale Int'le

CS Koutiala.

DESCRIPTION DES TACHES DE COORDINATRICE DE SANTE

COORDINATRICE - NUTRITIONISTE

La Coordinatrice-Nutritioniste du projet survie de l'enfant est recrutée pour les tâches suivantes :

1. Assister le Directeur dans la planification mensuelle et annuelle des activités.
2. Exécuter et suivre toutes les activités du projet (promotion de la vaccination, nutrition/vitamine A, la rehydratation, santé maternelle, activités génératrices de revenus dans la zone d'intervention).
3. Elaborer des modules et former les agents de santé et des comités de santé villageois.
4. Assurer la supervision des animatrices avec les affaires sociales dans la Commune de Koutiala.  
Assurer la supervision des agents de santé et comité de santé dans les villages.
5. Donner une retro-information trimestriellement en réunions de villages.
6. Faire des rapports mensuels, trimestriels et annuels des activités au Directeur du projet.
7. Elaborer une brochure en bambara des différents régimes alimentaires des enfants à partir des produits locaux.
8. Recommander une stratégie appropriée d'intervention nutritionnelle en fonction de la situation nutritionnelle constatée sur le terrain.
9. Assurer la mise à jour trimestrielle des registres d'information sanitaire des villages encadrés, par le CSV.
10. Accomplir toute autre tâche qui lui sera confiée par le Directeur ou l'Administrateur du projet.

// CURRICULUM - VITAE  
-o-o-o-o-o-

I. - IDENTITE :

NOM : N'DIAYE  
PRENOM : Maimouna  
DATE ET LIEU DE NAISSANCE :

II. - FORMATION :

- Baccalauréat Section Sciences Biologiques : Juin 1979 -  
Lycée de SEVARE.
- Ingénieur en Technologie et Chimie des Produits Alimentaires. -  
Spécialité : Conservation des aliments - Février 1985.  
Faculté de Technologie et Chimie Alimentaire - Université  
de GALATI (ROUMANIE).

III. - EXPERIENCE PROFESSIONNELLE :

- Chargé de cours en Biochimie au Lycée de SEGOU - 1986-1987.
- Stage à l'Institut Nationale de Recherche pour la Santé  
Publique : Section Nutrition de Janvier 1988 à nos jours.
- Enquêtes sur le terrain sur le mode d'alimentation des  
populations, modes de vie, organisation sociale...
- Missions de conseils auprès des populations : modes de  
sevrage - alimentations des enfants - espacements des  
naissances...
- Stage au Laboratoire Central Vétérinaire : Section  
Bactériologie alimentaire : du 15 Janvier 1988 à nos jours.
- Analyses bactériologiques en laboratoires des aliments :  
detections des aliments non consommables.

IV. - PUBLICATIONS :

- Memoire de fin d'Etude : Février 1968.

" La Technique de Fabrication d'un Jus Concentré  
d'Orange "

V. - LANGUES :

	<u>Ecrit</u>	<u>Parlé</u>
Français	Bon	Bon
Bambara	-	Bon
Anglais	Moyen	-
Roumain	Bon	Bon

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DESCRIPTION DES TACHES DE COORDINATRICE DE SANTE

Coordinatrice - santé maternelle

La Coordinatrice santé Maternelle du projet survie de l'enfant est recrutée pour les tâches suivantes :

1. Assister le Directeur dans la planification mensuelle et annuelle des activités.
2. Exécuter et suivre toutes les activités du projet (promotion de la vaccination, nutrition/vitamine A, rehydratation, santé maternelle, activités génératrices de revenus dans la zone d'intervention).
3. Elaborer des modules et former les agents de santé et des comités de santé villageois.
4. Assurer la supervision des agents de santé et comité de santé dans les villages.
5. Donner une retro-information trimestriellement en réunions de villages.
6. Faire des rapports mensuels, trimestriels et annuels des activités au Directeur du projet.
7. Elaborer une stratégie permettant le mieux l'accès des femmes aux soins prénataux, accouchements assistés et au planning familial.
8. Négocier avec le Ministère de la santé la mise en disponibilité des contraceptifs non prescriptibles (condom et spermicides) au niveau de tous les centres avec dispensaires et/ou maternités dans l'arrondissement Central.
9. Assurer un approvisionnement adéquat de contraceptif à travers le centre de santé.
10. Assurer la mise à jour trimestrielle des registres d'information sanitaire des villages encadrés, par le CSV
11. Accomplir toute autre tâche qui lui sera confiée par le Directeur ou l'Administrateur du projet.

## CURRICULUM VITAE

NOM : DOLO  
PRENOM : Katy  
DATE ET LIEU DE NAISSANCE:  
ETAT MATRIMONIAL : Divorcée avec 3 enfants en charge  
NATIONALITE : Malienne  
PROFESSION : Sage Femme  
Technicienne Supérieure en Soins Infirmiers  
Formateur

### ETUDE DE BASE :

1961 - 1971 : Ecole Fondamentale Yélémané - DEF  
1971 - 1972 : Lycée de Jeunes filles, Bamako

### ETUDE PROFESSIONNELLE

1972 - 1975 : Ecole Secondaire de la Santé - Bamako - Diplôme d'Etat de Sage Femme  
1987 - 1989 : CESS (Cycle d'Enseignement Supérieur en Soins Infirmiers) - Yaoundé Cameroun Diplôme de technicien supérieur en soins infirmiers

### COURS DE PERFECTIONNEMENT :

1980 : Cours de Formation en Santé Attestation  
1986 : Formation des formateurs Certificat  
Education pour la Santé Communautaire et familiale

### EXPÉRIENCES PROFESSIONNELLES :

1976 - 1978 : Sage-femme maîtresse - Nouvelle maternité de Kayes  
1978 - 1979 : Sage-femme maîtresse - Maternité de Bankass  
1979 - 1982 : Sage-femme adjointe - Maternité de Dioila  
1982 - 1983 : Sage-femme - Centre de Santé de Missira, Commune II Bamako  
1983 - 1985 : Sage femme - Centre de santé de Korofina, Commune I, Bamako  
1985 - 1989 : Formateur - Ecole des infirmiers du 1er cycle du Point G.

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## ACTIVITES DE LOISIRS

Lec : musique

PERSONNE A CONTACTER POUR LA VERIFICATION DE CE C.V.

- \* M. Bamba Malikat Ben Zacour, Surveillance générale à l'Ecole des Infirmiers du 1er cycle de Sikasso
- \* Mr Issac Konaté, Directeur de l'école des infirmiers du 1er Cycle du Point G, Bamako.

Bamako, le 24 Octobre 1989.

KOUTIALA

DESCRIPTION DES TACHES DU

-----  
Coordinateur des activités de Promotion de la  
la Vaccination et de la Réhydratation Orale  
-----

1. Assister le Directeur dans la planification mensuelle et annuelle des activités.
2. Exécuter et suivre toutes les activités du projet (promotion de la vaccination, Nutrition/vitamine A, réhydratation orale, santé maternelle, activités génératrices de revenus dans la zone d'intervention).
3. Elaborer des modules et former les agents de santé et des comités de santé villageois.
4. Assurer la supervision des animatrices avec les affaires sociales dans la ville de M'Pessoba.  
  
Assurer la supervision des agents de santé et comité de santé dans les villages.
5. Donner une rétro-information trimestriellement en réunions de villages.
6. Faire des rapports mensuels, trimestriels et annuels des activités au Directeur du projet.
7. Etablir un système d'approvisionnement adéquat et continu des sachets SRO dans la zone du projet.
8. Assurer une stratégie de mobilisation sociale dans le cadre du PEV à travers l'Information, l'Education, la Communication et l'Identification des vaccinations incomplètes par les animatrices.
9. Assurer la mise à jour trimestrielle des registres d'information sanitaire des villages encadrés, par le CSV (comité de santé villageois).
10. Accomplir toute autre tâche qui lui sera confiée par le Directeur ou l'Administrateur du projet).

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CURRICULUM VITAE

NOM : Dembélé

PRENOMS : Jean-Charles

DATE ET LIEU DE NAISSANCE :

FILS DE : Grégoire

ET DE : Odette Dembélé

ECOLE PRE-SCOLAIRE : 1973-1976 jardin d'enfants des Soeurs Religieuses de Koutiala.

ECOLE FONDAMENTALE :

1er Cycle : 1976-1983 Ecole Privée Catholique de Koutiala  
Diplôme obtenu CEP.

2e Cycle : 1983-1986 Second Cycle Privé Catholique de Koutiala  
Second Cycle Privé Catholique de Sikasso  
Diplôme obtenu DEF

ECOLE PROFESSIONNELLE :

Ecole Secondaire de la Santé (ESS) et des Affaires Sociales.  
Diplôme obtenu Diplôme d'Infirmier d'Etat.

STAGE FORMATION :

1ère AC 1988-1989 2è trimestre : Service de Neuro-annexe  
3è trimestre : Service de chirurgie générale.

STAGE DE VACANCES : Centre de Santé de Koutiala.

2e A. Inf. 1989-1990 1er trimestre : Phtisio-pneumologie  
2e trimestre PMI Hamdallaye : vaccination,  
nutrition, réhydratation, consultation externe et  
prénatale.

3e trimestre Hôpital Gabriel Touré (Service Urgences  
et Réanimation).

3e A. Inf. 1990-1991

1er trimestre Médecine B. Point G  
2e trimestre Bloc Opératoire HGT et Traumatologie  
Hôpital Gabriel Touré.  
3e trimestre Pédiatrie Hôpital Gabriel Touré :  
Réanimation, réhydratation, nutrition.

STAGE EN ZONE RURALE : Lieu Zantiébougou (Cercle de Bougouni)

Zantiébougou est un chef lieu d'Arrondissement situé à 27 Km de Bougouni sur l'axe Bougouni-Sikasso.

ACTIVITES :

Rédaction Rapport de vaccination Equipe Mobile.

Centre de santé : Supervision des activités de la matrone, des Infirmiers, de l'Aide-Soignant, du Thérapente traditionnel.

Rédaction rapport mensuel.

STAGE DE VACANCE DE SPECIALISATION 1991.

Anesthésie, réanimation au Service des Urgences et Pédiatrie :  
Réanimation nutrition et réhydratation.

LANGUES PARLEES ET ECRITES : Français.

LANGUES PARLEES UNIQUEMENT : Bambara, Minianka.

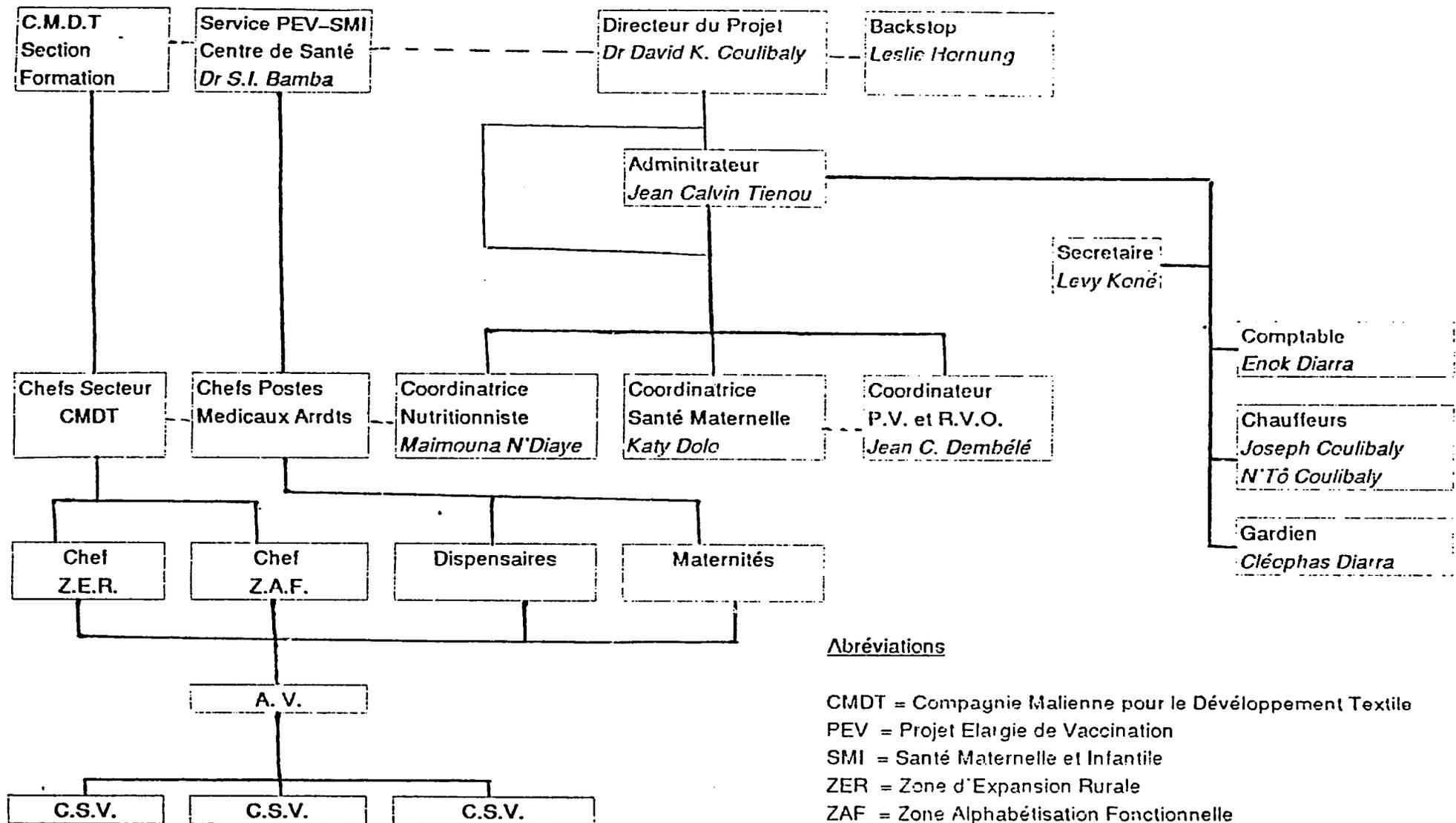
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**APPENDIX 1V**

**ORGANIZATIONAL CHART**

# ORGANIGRAMME DU PROJET SURVIE DE L'ENFANT KOUTIALA

Appendix VII



## Abréviations

CMDT = Compagnie Malienne pour le Développement Textile  
 PEV = Projet Elargie de Vaccination  
 SMI = Santé Maternelle et Infantile  
 ZER = Zone d'Expansion Rurale  
 ZAF = Zone Alhabétisation Fonctionnelle  
 A V = Association Villageoise  
 CSV = Comité Santé Villageoise  
 P V = Promotion Vaccination  
 RVO = Rehydratation Voie Orale