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NUTRITION AT THE CENTRE
BASELINE SURVEY

REPORT
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This report presents the main results of the baseline survey related to the initiative of the program “Nutrition at the Centre” of CARE Benin/Togo, conducted in Benin from February 3rd to 20th, 2014 by the National Institute of Statistics and Economic Analysis (*INSAE*) in partnership with CARE Benin/Togo. The survey was commissioned and financed by CARE Benin/Togo.

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LIST OF ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|--|
| BMI | : | Body Mass Index |
| CNERS | | National Ethics Committee for Research on Health |
| CNS | : | National Statistics Council |
| CPEET | : | Commission for Study, Survey and Data Processing program |
| CSPRO | | Census and Survey Processing System, a software package |
| EDSB | : | Benin Demographic and Health Survey |
| EMICoV | : | Integrated Modular Survey on Households Living Standards |
| HAZ | | Height-for-age Z-score |
| HDDS | | Household Dietary Diversity Score |
| INSAE | : | National Institute for Statistics and Economic Analysis |
| IRA | : | Acute Respiratory Infection |
| OMD | : | Millennium Development Goals |
| ONG | : | Non-Governmental Organization |
| OMS | | World Health Organization |
| PTF | : | Technical and Financial Partner |
| USAID | | United States Agency for International Development |
| WASH | | Water, Sanitation and Hygiene |
| WAZ | | Weight-for-age Z-score |
| WHZ | | Weight- for-height Z-score |

| | | |
|------|---|---------------------------------|
| WHO | : | World Health Organization |
| IYCF | | Infant, Young and Child Feeding |

MAIN CONCLUSIONS

The baseline study for the initiative « Nutrition at the Centre » in its intervention area (Bonou, Dangbo) and in the monitoring areas (Athiémé, Grand-Popo), suggests that there are many innovative actions to be implemented by CARE Benin/Togo and by Benin Government with the support of technical and financial partners. The different strategies established will strengthen the households' means of access to basic services (e.g. water, sanitation), women empowerment and access to health care for mothers and children. It will help the population to ensure food and nutritional security. These actions must be implemented based on the results of the study.

- 1) Indeed, about six out of ten women surveyed (58.4%) have not received a formal education. This proportion represents 62.5% for the women in the project intervention area and 52.5% for those in the monitoring area.
- 1) On average, 15.22% of the sampled households are very poor. The proportion of very poor households is 16.86% in the intervention area and at 14.09% in the monitoring area.
- 1) Households have very few survival strategies; as a matter of fact, the index of households survival strategy (23.2%) is relatively low. In the monitoring area, it is 25.6% while in the intervention area, it is estimated at 21.8%.
- 1) The diet of about half of the households (48.0%) is limited. The diversification diet in the intervention area is weaker (50.2% of households) than in the monitoring area (44.7% of households).
- 1) Very few women are suffering from acute anemia in the intervention area. However, more than half of the women surveyed in the intervention and monitoring area are suffering from other forms of anemia (moderated and mild). Indeed, 28.0% and 30.7% of women are respectively suffering from moderate and mild anemia in the intervention area. In the monitoring area, the rates are respectively 26.6% and 25.6%.
- 1) More and more, women between 15 and 49 years are adopting best practices of prenatal care. Indeed, almost all the mothers received prenatal care for the last pregnancy in the intervention area (99.1%) as well as in the monitoring area (98.6%).
- 1) Post natal consultations are still not frequent. As a matter of fact, less than the half of mothers (41.3%) went to a health facility for post-partum care compared to 2/3 of mothers (64.7%) in the monitoring area.
- 1) Women who live in the poorest households are those who deliver more often at home. Indeed, the proportion of women who have delivered at home are among the poorest at are 4.1%, against 2.4% for the wealthy class in the monitoring area. This proportion is respectively equal to 1.7% against 0.0% for the intervention area.
- 1) Less than half of the children under two years were immediately breastfed right after birth; this rate is estimated respectively at 43.8% in the intervention area and 36.8% in the monitoring area. 18.5% of the children in the intervention area and 25.5% of those in the monitoring area were breastfed within the hour after birth.

- 1) Moreover, the proportion of children who were fed other foods in addition to breast milk is relatively significant. As a matter of fact, in the intervention area, 15.5% of the children have been given other foods in addition to breast milk; in the monitoring area, this proportion is estimated at 20.1%.
- 1) Percentage of children from 6-23 months who have been given the minimum frequency of meals (aside breast milk) is 31.3% in the monitoring area and 40.1% in the intervention area.
- 1) In the intervention area, 17.4% of children from 6 to 35 months are underweight, including 3.4% which are severe cases; while in the monitoring area 14.4% of children are underweight. This proportion is lower among girls than among boys (14% against 20.8% in the intervention area and 12.4% against 16.2% in the monitoring area).
- 1) The height-for-age index shows that in the intervention area, about two children out of five from 6 to 35 months (33.8%) are stunted: 22.8% of moderated cases and 11% of acute cases. In the monitoring area, these rates are respectively 19.3% and 7.6%.
- 1) It is noted that 32.5% of children under three years suffered from fever within the two weeks preceding the interview. This proportion is 27.9% for children in the intervention area and 39.4% for those in the monitoring area. The prevalence of malaria is higher among girls (33.8%) than boys (30.5%).
- 1) One child out of four (25.7% of children under 3 years) has suffered from cough in the past two weeks. This cough is accompanied with fever for some, or fast or difficult respiration (acute respiratory infections). These symptoms are more frequent among the children in the intervention area (27.0%) than among those in the monitoring area (23.8%). In addition, among children from 6-11 months (28.3%) respiratory infections are more frequent.
- 1) Likewise, 19.2% of the children in the whole study area have suffered from diarrhea within the last two weeks before the survey. The proportion of children who have suffered from diarrhea is almost the same in the project intervention area (19.6%) than in the monitoring area (18.6%).
- 1) More than half of the population have access to drinking water (78.4% in the intervention area and 61.2% in the monitoring area).
- 1) Few women wash their hands before feeding the children (55.8% in the monitoring area and 65.6% in the intervention area), after using toilets (65.6% in the monitoring area and 67.1% in the intervention area) and after changing the baby's diapers (32.9% in the monitoring area and 48.3% in the intervention area).

1. INTRODUCTION

In accordance with the recommendations of the Summit on the MDGs in 2005, Benin confirmed its commitment to adopting in September 2007, a strategy of resources mobilization for the MDGs. A few months from the deadline, the Government committed itself to significantly improving its population's well-being in order to achieve the 8 objectives by 2015. These objectives fit within the vision and the mission of CARE Benin/Togo.

Due to the fact that the socioeconomic context of Benin is marked with precariousness, social injustice and food insecurity, CARE Benin/Togo intends to provide support in the achievement of the MDGs. Thus, the new initiative of CARE in Benin is an integrated nutrition program called the « Nutrition at the Centre ». This program aims at improving the health and

nutritional status of children under two years and women of childbearing age, and to further empower women via the promotion of good feeding, nutritional, water and hygiene practices, and to have the greatest possible impact on poverty, social injustice and food insecurity. This CARE USA initiative is implemented simultaneously in four countries, namely: Benin, Bangladesh, Ethiopia and Zambia.

Therefore, within the framework of the implementation of CARE Benin/Togo N@C initiative, the Beninese National Institute for Statistics and Economic Analysis (*INSAE*) was chosen for the conduction of the baseline study which will enable the planning and the measurement of the positive, qualitative and sustainable changes on the impact groups.

The study fits within the natural monitoring-evaluation and CARE Benin/Togo N@C initiative impact measurement process. This study aims at establishing a baseline situation for the best monitoring-evaluation and a capitalization of the major results and assets in order to measure the positive, qualitative and sustainable changes on the lives of the most marginalized and most vulnerable populations.

2. DESCRIPTION OF THE METHODOLOGY

2.1. Survey design

In the framework of a workshop held in Cotonou in November 2013, the technical documents and the standardized questionnaire designed by CARE USA were reviewed and adapted to Benin, based on the objectives specified in the terms of reference, during a framing workshop held in Cotonou in November 2013.

Therefore, in preparation over several months, the baseline survey on the program initiative "Nutrition at the Centre" started effectively in January 2014. The preparation enabled the finalizing of the necessary documents (protocol of the study of the questionnaire, manual, information sheets and approval) the survey. These technical documents supported the training of enumerators.

At the end of this training, the agents were deployed equally into the field to collect data.

2.2. Study area and sample size

2.2.1. Study area

The study was conducted in four communes, two in the department of Ouémé (Dangbo and Bonou) and two in Mono (Grand Popo and Athieme).

2.2.2. Sampling frame

The sampling frame of the survey was done by using the available demographical data of the villages of the intervention and monitoring communes. This data was collected based on the populations estimate by *INSAE* according to the 2002 general population and habitation census. The sampling frame is composed of 32 villages of the intervention communes and 32 villages in the monitoring communes.

2.2.3. Study population

This baseline survey concerns women between 15 to 49 years, who have had live births within the past 36 months, whose children are currently alive and who permanently reside in the selected communes. The second target is the population of children under 36 months, permanently residing in the selected communes with their mothers or their care givers.

2.2.4. Sample size

The collected data concern children from 0-35 months and their mothers aged 15 to 49 years. It is necessary to recognize the size of the sample for the age groups from 0 to 5.9 months, 6 to 11.9 months, 12 to 17.9 months, 18 to 23.9 months and 24 to 35 months concerning infant and young child feeding, anemia and anthropometric indicators. The size of the sample of each target has been calculated by using the exclusive breastfeeding prevalence among infants from 0-5 months, the prevalence of stunted growth of the young child, the prevalence of anemia among children from 6 to 23 months and among adults and desired changes at the end of the suggested intervention.

The size of the sample is presented as shown in the following table:

| Table 1: Sample size | | | | | | |
|-----------------------------|----------------|--------------------|----------------------------------|--------------------|---------------|----------------|
| Department | Commune | Number of villages | Number of women from 15-49 years | Number of children | | |
| | | | | 0 - 5 months | 6 - 17 months | 18 - 36 months |
| OUEME | BONOU | 16 | 602 | 97 | 115 | 390 |
| | DANGBO | 16 | 668 | 113 | 95 | 460 |
| | TOTAL | 32 | 1270 | 210 | 210 | 850 |
| MONO | ATHIEME | 16 | 513 | 141 | 100 | 272 |
| | G R A N D POPO | 16 | 348 | 69 | 110 | 169 |
| | TOTAL | 32 | 861 | 210 | 210 | 441 |
| ALL THE AREAS | | 64 | 2131 | 420 | 420 | 1291 |

Source: Protocol of survey for the baseline study of "Nutrition at the centre", CARE Benin/Togo, 2014.

2.3. Data collection tools

The discussions that emerged from the framing workshop enabled us to deepen the sampling methodology, to update and/or to adapt the protocol and the questionnaire to Benin context. Consequently, some questions and variables were reviewed in the different sub modules of the household questionnaire. These are:

- A. Identification of households and summary
- B. Information on the child
- C. Information on the mother
- D. Basic informations on the household
- E. Agricultural production and fishery, access to food

- F. Food conservation and storage
- G. Agriculture and Extension
- H. Adaptation strategies
- I. Level of hunger in households
- J. Women feeding diversification
- K. Mother's health/pregnancy
- L. Infant and young child feeding practices (IYCF)
- M. Adapted feeding
- N. Child disease
- O. Drinking water
- P. Hand washing, sanitation and children's feces removal
- Q. Strengthening of women's role
- R. Community groups and participation in governmental social security programs
- S. Mother's anthropometry and hemoglobin test
- T. Child's anthropometry and hemoglobin

2.4. Training of investigating agents

The data collection phase in the field was completed after following several steps including the training of the agents who collected the data from the households. This training was done from January 20th to 28th, 2014 . 75 recruited agents took part in the training.

The objectives of the training were to equip agents with the necessary skills to perform the data collection task assigned to them. This training helped to:

- share with the participants, information related to the objectives and expected results and the methodology of the survey;
- familiarize them with the data collection tools and methods related to this survey;
- plan the data collection organization.

The participative method was used through the in-depth reading of the questionnaire, simulations, role play, and films showing practical exercises in the classroom and in the field. The collectors comprehension of data was enhanced.

At the same time, the sampling methodology was revised. The sampling strategy chosen was the "random walk." Within the context of the survey characterized by very limited financing, this method helped to obtain a less expensive sample which allowed the calculation of inclusion probabilities. This method assumes that there is no mapping of the villages and that a starting point must be chosen as well as a sense of evolution in the villages.

2.5. Visa obtaining and ethics considerations

In the survey process, some documents were first submitted to the National Council for Statistics for technical approval. Then it was submitted to the National Committee for

program Study and Scientific Research, for ethical compliance.

Concerning the National Council for Statistics (*CNS*), and considering the fact that *N@C* survey covers more than one commune, a file containing all the technical documents was submitted by the Commission in charge of Study programs, Surveys and Data Processing (*CPEET*). Thus, on Friday, February 14, 2014, *CPEET* held a session for the study of the technical documents of the survey. The main objective of this session was to study the technical file of this statistical operation led by *INSAE* in order to issue the compliance notice of the National Council for Statistics. At the end of the session, based on the explanations given by the representatives from *CARE* Benin/Togo and *INSAE*, the commissioners were globally satisfied with the quality of the documents. It was therefore approved by *CNS*, to issue the visa to conduct the *Baseline Survey of the program on the nutrition at the centre (N@C)*.

After obtaining the visa, the documents were sent to the National Ethics Committee for Research on Health (*CNERS*) for approval. Within the framework of the survey, all of the children from 6 to 23 months and their mothers from 15 to 49 years took part in the anemia testing through a sampling of a few drops of their blood from a finger or sole. This sampling requires the highest level of confidentiality, deontology and ethics. The *CNERS* studied the technical documents to make sure that the collection device took into consideration confidentiality, the protection of individual information, the compliance with the deontology and ethics. The *CNERS* visa is very important due to the fact that blood sampling is very sensitive. After studying the technical documents and collection device, and having provided additional responses and information, *CNERS* approval was granted.

For blood sampling, it should be mentioned that the equipment used was clean and completely safe. It was never used before and was disposed of after each use. The sampling was done in the following way: (a) capillary blood collected through injection on the finger with a small retractable lancet (*Tenderlette*); (b) a drop of blood was then collected in a miniature test-tube placed in a portable hemoglobin meter (*HemoCue*), equipment giving precise hemoglobin measurements (in grams) in less than a minute per deciliter of blood. This value was finally recorded in the questionnaire. The results were strictly confidential and were not communicated to any member of the survey team.

2.6. Data collection

Data collection was done in two phases: deployment of the agents in the field and supervision of the collection.

2.6.1. Deployment of the agents on the field

A total number of 15 teams of five people per team were created (1 team leader, 2 investigating agents, 1 agent for the anthropometric measurement, 1 agent for anemia test); which represents a total of 75 field agents for the whole study area.

The team leader was responsible for the compliance with the methodology for choosing the target as well as and the quality of data collected; the comprehensiveness, the compliance with the intervals, the accuracy of the anthropometric measures and compliance with the procedures for anemia testing.

Two investigating agents were responsible for administering the questionnaire to the women

of childbearing age who had babies of less than 36 months in the households.

The two agents in charge of measuring were responsible for the anthropometric measurements among women and children from 6-23 months as well as anemia screening. Each of them received help from his colleague to make the work easier.

The survey was conducted in each target village after contacting the local authorities and after the identification of the target households. Depending on the case, some guides helped the collectors in performing this task.

2.6.2. Screening and anthropometric measurement

Hemoglobin test was included to estimate the prevalence of anaemia among children from 6-23 months and their mothers from 15-49 years. Consent from the parent/adult responsible for the child was requested. Consent was obtained after reading of an information letter to the eligible person, explaining the objective of the test, the risks of participating, the voluntary character of participating, and finally the procedural care, if necessary.

Before taking the sample of blood, the finger was cleaned with alcohol wipes and air dried. Then, the fingertip (or the sole of very thin children under 1 year) was pricked using a retractable, sterile and non-reusable lancet. A drop of blood was put in a micro cell then placed in the HemoCue photometer which indicated the level of hemoglobin. These results were recorded in the household questionnaire and communicated to the person tested or to the parent/adult responsible upon request. When the rate of hemoglobin was ≤ 8 g/dl, the interviewer gave the person a note to give to the health agents to enable them to benefit from health care in an accredited center.

The anthropometric data was collected from children from 6-23 months and their mothers. It was measured using height gauges (in a vertical position for women and children of two years old or above, and in horizontal position for children under two years) and weighed using electronic scales. Pregnant women's arm measurements were mainly measured.

2.6.3. Supervisions of the collection phase

The data collection was characterized by three supervision missions conducted by the technical teams of CARE Benin/Togo and *INSAE*. The aim of these missions was to ensure the correct application of the methodology, fulfillment of the questionnaire, anthropometric measuring and anemia tests, control of the complete questionnaires and assessment of the level of control performed by the team leader on the questionnaire. The questionnaires correctly filled were conveyed, right after their supervision, to *INSAE* for data entry.

2.7. Data management and analysis

Right after the end of the collection, all of the investigating agents' teams were invited to verify and correct village and agent codes

Then, the data entry of the questionnaires was done by the agents recruited for this purpose.

A total of 20 agents were recruited and trained for 4 days. At the end of the training, one person resigned.

Therefore, 19 agents completed the double entry of the questionnaires for 20 days through the data entry form designed by CARE USA, revised and adapted to the finalized questionnaire. The data entry form was designed using *CSPRO* software based on the dictionary of variables. The option of double data entry was chosen in order to guarantee the best quality of data entry.

The data entry was done under the coordination and the supervision of the division in charge of computer processing and publishing and the one responsible of social statistics.

At the end of the data entry, the data bases were compiled to control the calculation of the indicators and tables production.

After the compilation of the bases, their *CSPRO* form synthesis was converted into *SPSS* form. The control systems incorporated in the application permitted it to automatically settle the payment (clearance or before payment). The last stage of the process was focused on the creation of indicators. The data processing led to a stabilization of the different data bases enabling the production of tables.

3. RESULTS OF THE SURVEY

3.1. Households demographic characteristics

The baseline survey of the initiative "Nutrition at the Center" enabled us to gather information about food security in households, nutrition and health practices and water and hygiene practices of mothers, and about the nutritional status of children under 36 months and their mothers. This section is about the analysis of the results on the sociodemographic characteristics of the households and the women surveyed.

3.1.1. Households population by age, sex and study area

The following table presents the distribution by age and sex, according to study area, and the resident population of the households surveyed. In general, the population of the all the households visited is 10,622, 60% in the intervention area and 40% in the monitoring area. The women represent respectively 49.8% and 50.6% and the sex ratio for the two areas is 99.5 men for 100 women, which represents an approximate balance between men and women. On the other hand, it presents a ratio of 101 men for 100 women in the intervention area which represents a numeric superiority of men. In the monitoring area, the sex ratio is 97.6 men for 100 women expressing a numeric superiority of women in the said area.

Table 2: Distribution (in %) of the population of the households, by age group of five years, by sex and by study area

| Age groups of the population | Monitoring area | Intervention area | Whole area of study |
|------------------------------|-----------------|-------------------|---------------------|
| | | | |

| | | | | | | | | | |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0-4 years | 31.2 | 29.5 | 30.3 | 30.4 | 29.4 | 29.9 | 30.7 | 29.4 | 30.1 |
| 5-9 years | 17.5 | 16.8 | 17.2 | 17.9 | 15.8 | 16.9 | 17.8 | 16.2 | 17.0 |
| 10-14 years | 9.5 | 7.9 | 8.7 | 8.7 | 8.2 | 8.5 | 9.0 | 8.1 | 8.6 |
| 15-19 years | 3.4 | 5.4 | 4.4 | 4.0 | 4.4 | 4.2 | 3.8 | 4.8 | 4.3 |
| 20-24 years | 3.4 | 10.3 | 6.9 | 2.3 | 9.6 | 5.9 | 2.7 | 9.9 | 6.3 |
| 25-29 years | 6.5 | 11.4 | 8.9 | 6.6 | 13.2 | 9.9 | 6.5 | 12.4 | 9.5 |
| 30-34 years | 9.5 | 9.5 | 9.5 | 9.5 | 9.6 | 9.6 | 9.5 | 9.6 | 9.5 |
| 35-39 years | 7.6 | 5.2 | 6.4 | 8.0 | 5.8 | 6.9 | 7.9 | 5.5 | 6.7 |
| 40-44 years | 6.1 | 2.4 | 4.2 | 5.9 | 2.0 | 3.9 | 6.0 | 2.2 | 4.1 |
| 45-49 years | 2.9 | 0.7 | 1.8 | 2.9 | 0.7 | 1.8 | 2.9 | 0.7 | 1.8 |
| 50-54 years | 1.6 | 0.4 | 1.0 | 1.3 | 0.2 | 0.7 | 1.4 | 0.2 | 0.8 |
| 55-59 years | 0.3 | 0.1 | 0.2 | 0.5 | 0.2 | 0.3 | 0.4 | 0.2 | 0.3 |
| 60-64 years | 0.0 | 0.1 | 0.1 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 |
| 65-69 years | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 70-74 years | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 75-79 years | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| 80-84 years | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 85 years and above | 0.2 | 0.0 | 0.1 | 1.5 | 0.8 | 1.1 | 0.9 | 0.5 | 0.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Total number | 2123 | 2175 | 4300 | 3171 | 3147 | 6322 | 5294 | 5322 | 10622 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

The structure by large age group of this population shows that about half of the population (50.1%) is less than 15 years old. This proportion represents 56.2% for the monitoring area and 55.2% for the intervention area.

Figure 1: Age pyramid of the population based on the different study areas

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014

Figure: 1 shows that the age pyramid of this population characterizes regions with high rates of fertility and mortality: large base and sharp apex. It can, however, be noted that there is a very small number of men from 15-24 years regardless of the study area. This situation can be explained by the immigration phenomenon very frequent in the communes of Bonou and Dangbo, Athiémé and Grand-Popo to the neighboring communes (Porto-Novo, Cotonou, Lokossa or Comè) or to the neighboring countries (Nigeria or Togo) in search of gainful employment or for study purposes. Again, it is worth noting that the number of men from 25 years is high before dropping from 35 years till adulthood. This structure is slightly different from the one obtained in Benin in 2002 due to the high migration rate in these areas.

Otherwise, the average age of household members surveyed is 16.8 years for the whole study area. This age is higher in the intervention area (17.2 years) than in the monitoring area (16.1 years). Likewise, the average size of the households are 4.9 people for the whole study area, corresponding to the figures obtained during the 2011-2012 DHS-IV. This size is almost the same for both the monitoring area (4.9 people) and intervention area (5 people).

3.1.2. Study of the socio-demographic characteristics of the women surveyed

The analysis of the socio-demographic characteristics of the women surveyed is very important due to their use in the explanation of the levels of child health and nutritional status indicators. This study concerns 2,144 women between the ages of 15-49 years who answered the questions during the survey, instead of 2131 expected.

In the survey area, the population, being for the most part rural, is unaware of the importance of civil registration. As a matter of fact, civil status is not well registered. Consequently, there is an under registration of birth and death related events, which makes age-based data collection difficult. During the survey a table was used to verify age-date and precise instructions were given to the staff in the field concerning the precautions to be taken. They should first ask the date of birth, then the age. If the age is different from the date of birth given, other questions should be asked so that the information is correct. If necessary, documents must be verified, and if verification fails, an estimation should be done by referring to the person's story: for instance the historical context of the birth of her children or if necessary by comparing her age with the age of one of her relatives who knows this information with precision.

The curve of the age group distribution of women is smooth and represents the women of child bearing age in developing countries. Thus, for all the women regardless of the study area, from 15-19 years, the curve grew smoothly to reach its maximum at 25-29 years (30.7% for all the areas, 32.4% for the intervention area and 28.2% for the monitoring area). Then falling to reach its minimum point, 0.8%, at 45-49 years for the whole area (0.9% for the intervention area against 0.7% for the monitoring area).

Figure 2: Proportion of respondent women based on age groups and study area

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014

Moreover, the average age of the women who took part in the survey was 28.7 years (29 years for the women in the intervention area against 28.2 years for those in the monitoring area).

Table 3 provides information on the marital status of the people surveyed. At the moment of the survey, 84.5% of the women were married, 56.0% in monogamy and 28.5% in polygamy. The results based on the study area reveal that 87.2% of the women are married in the intervention area (57.1% in monogamy and 30.2% in polygamy); on the other hand, for the monitoring area, the proportion of married women is 80.6% (54.5% in monogamy and 26.1% in polygamy). In addition, 13.7% of the women in the survey area are in cohabitation (10.9% in the intervention area against 17.9% in the monitoring area). There are very few single women, 0.2% of the respondent women. On the opposite side, 1.5% of the women surveyed are separated, divorced or widows.

In Benin, as in many other countries in sub-Saharan Africa, the low number of widows/widowers and divorced persons is due to the rapid and frequent remarriage of the women or widow inheritance after the breakup of a relationship. In other words, women spend little time divorced or widowed, especially when the breaking down happens at a very young age.

Table 3: Distribution (in %) of women from 15-49 years based on their marital status and study area

| Marital status | Monitoring area | Intervention area | The whole study area |
|--|-----------------|-------------------|----------------------|
| Married (monogamy) | 54.5 | 57.1 | 56.0 |
| Married (polygamy) | 26.1 | 30.2 | 28.5 |
| Divorced or separated | 1.1 | 0.9 | 1.0 |
| Widow | 0.2 | 0.6 | 0.5 |
| Single women (never married) | 0.1 | 0.3 | 0.2 |
| Cohabitation with a partner (monogamy) | 12.8 | 7.8 | 9.9 |
| Cohabitation with a partner (polygamy) | 5.0 | 3.1 | 3.9 |
| Total | 100.0 | 100.0 | 100.0 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

Table 4 presents the proportions of households based on the sex of the head of household. More than 9 households out of 10 (90.4 %) are led by a man as the head and about one out of ten households is led by a woman (9.0 %). The proportion of households led by a woman is slightly higher in the monitoring area than in the intervention area (10.4% against 8.1%).

Table 4: Distribution (in %) of the women surveyed by study area based on the sex of the household's head and the relationship with the household's head

| | Monitoring area | Intervention area | The whole study area |
|---------------------------|-----------------|-------------------|----------------------|
| Sex of the household head | | | |
| Men | 88.9 | 91.5 | 90.4 |

| | | | |
|--|-------|-------|-------|
| Women | 10.4 | 8.1 | 9.0 |
| Joint (men and women) | 0.7 | 0.4 | 0.5 |
| Total | 100.0 | 100.0 | 100.0 |
| Relationship with household head <i>HH</i> | | | |
| Myself (led by women) | 8.2 | 6.9 | 7.4 |
| Spouse of the head | 89.6 | 90.7 | 90.2 |
| Sister of the head | 0.1 | 0.2 | 0.1 |
| Child of the head | 1.5 | 1.3 | 1.4 |
| Parent of the head | 0.5 | 0.4 | 0.4 |
| Grand child of the head | 0.0 | 0.1 | 0.0 |
| Others | 0.2 | 0.5 | 0.4 |
| Total | 100 | 100 | 100 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

In general, the household head is the spouse of the respondent woman (90.2% for the whole study area, 90.7% for the intervention area and 89.6% for the monitoring area).

3.1.3. Attendance in school, level of education and literacy of the women surveyed

In the questionnaire, some questions were asked about the level of education and school attendance as well as literacy level of the women surveyed. The level of education of the population is a crucial element which contributes to the improvement of the living standards of the household and of the society in general. Table 5 presents, by study area, the distribution of the women surveyed according to school attendance, level of education and literacy reached. Though women’s education is still a serious concern for the government authorities who undertook actions in favor of girls especially through a schooling project financed by USAID since 1993, there is still a lot to do in terms of girls schooling.

Table 5: Distribution of women (in %), by study zone, based on school attendance, level of education and literacy

| | Monitoring area | Intervention area | Whole study area |
|--|-----------------|-------------------|------------------|
| Did the woman receive a formal education | | | |
| Yes | 47.5 | 37.5 | 41.6 |
| No | 52.5 | 62.5 | 58.4 |
| Total | 100 | 100 | 100 |
| Highest level of education: | | | |
| Primary school incomplete | 62.0 | 63.8 | 63 |
| Primary school completed | 8.0 | 3.8 | 5.7 |

| | | | |
|---|------|------|------|
| Secondary school incomplete | 29.5 | 31.0 | 30.3 |
| Secondary school completed | 0.5 | 0.6 | 0.6 |
| Higher education incomplete | 0.0 | 0.6 | 0.3 |
| Higher education completed | 0.0 | 0.2 | 0.1 |
| Total | 100 | 100 | 100 |
| Literacy of the woman | | | |
| Unable to read | 64.8 | 76.6 | 71.8 |
| Can read a few words in a sentence | 16.5 | 9.7 | 12.5 |
| Can read a whole sentence | 18.5 | 13.6 | 15.6 |
| The sentence is not available in the local language | 0.0 | 0.2 | 0.1 |
| Blind /partially sighted | 0.1 | 0.0 | 0.0 |
| Total | 100 | 100 | 100 |
| <u>Source:</u> Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014. | | | |

In fact, the results show that about six out of the ten women surveyed (58.4%) did not receive any formal education. This proportion represents 62.5% for the intervention area and 52.5% for the monitoring area.

When attention is paid to the level of education of the women who have received formal education, it is clear that 68.7% of them have a primary level (63% have an uncompleted primary level against 5.7% who have completed the primary level). Similarly, 30.9% of these women have reached the secondary education level (30.3% incomplete against 0.6% completed) and 0.4% with higher level education. There is no significant difference between the level of education of the women in the intervention area and those in the monitoring area. Indeed, 30% of the women in the monitoring area against 31.6% of those in the intervention area have reached a secondary school education level. Likewise, 70.0% of women in the monitoring area against 67.8% of those in the intervention area have reached a primary level of education.

Considering that the majority of the population has no education level and that in 63% of the cases, primary level was not completed, it is worth assessing the literacy level of the population in order to measure the degree of accessibility to information. To obtain information on the literacy level of the people surveyed, those who declared to have never been to school and those who declared to just have the primary level were asked to read a sentence in French and in local language depending on the case. This helps to classify the people surveyed based on three levels: can read an entire sentence, can read a few words of a sentence and cannot read at all.

Table 5 results show that among the women surveyed, 71.8 % are unable to read in a dialect. The literacy rate of women is 76.6% in the intervention area and 64.8% in the monitoring area.

3.1.4. Age at first marriage of the women surveyed

The women in the study area had their first marriage, on average, at the age of 20.7 years. This age in the intervention area was at 21.5 years and 19.3 years in the monitoring area. It is worth specifying that in Benin, Act N°2002-07 dated August 24, 2004 establishing the Individuals and Family Code in its article 123, states that the minimum age for marriage is 18 years.

In general, the women surveyed had their first marriage between 15 and 29 years. Whatever the area, it is noted that nine out of ten women had their first marriage between 15 and 24 years; peaking at 15-19 years. Besides, 3.8% of the women have already had a first marriage before the age of 15 in the monitoring area against just 1.5% in the intervention area and 2.4% for the whole study area.

Table 6: Distribution (in %) of women by age group at first marriage and based on study area

| Age at first marriage | Monitoring area | Intervention area | Whole study area |
|-----------------------|-----------------|-------------------|------------------|
| Below 15 years | 3.8 | 1.5 | 2.4 |
| 15-19 years | 59.5 | 43.1 | 49.5 |
| 20-24 years | 29.7 | 46.6 | 40.0 |
| 25-29 years | 6.2 | 7.7 | 7.1 |
| 30-40 years | 0.8 | 1.0 | 0.9 |
| Total | 100.0 | 100.0 | 100.0 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.1.5. Household living standards

In the whole study area, about 20.0% of the population is respectively very wealthy in terms of living standards. It seems the number of wealthy populations is higher in intervention area than in the monitoring area.

On the average, 15.22% of the households of the sample are very poor. The proportion of very poor households is 16.86% in the monitoring area and 14.09% in the intervention area.

Figure 3: Distribution (in %) of households based on the quintile wellness

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

Within the monitoring area, households with the average living standards are the majority (31.77%) followed by the poor (23.62%), while in the intervention area, households with average living standards are the majority (24.52%) followed by the rich households (20.19%).

In the whole study area, about 20% of the population is very rich. The majority lives in the intervention area (very rich: 16.1% and rich: 12.8%). In terms of total, 48.7% of the population is very wealthy and wealthy in the intervention area; on the other hand, in the monitoring area, 27.8% of the population is living in very good conditions (very wealthy and wealthy).

Box 1: Determination of the non-monetary poverty index

The non-monetary poverty dimension analyzed within the framework of this study is about the “living conditions.” “Education” and “health” were not taken into account because in *EMICoV* surveys, the variables non-existent or very specific. This narrows non-monetary poverty comparability.

The indicator is based on what the family has stored, therefore it permits an overview on poverty as opposed to monetary variables which are subjected to conjectural variations (Razafindrako, M et Roubaud, F (2005)). It is a non-monetary objective indicator dealing with poverty on a result rather than means basis; even if living in a comfortable house can also be a way of improving, for example, productivity at work and increasing one’s revenue.

This index is therefore based on information related to household properties (cars, radio, motor bike, bike, television, fridge, HI-FI system, VCD/DVD reader, Video tape recorder, stove, generator, computers, mobile phones, land line) and other characteristics of their house (flooring materials, materials used for the wall, ceiling materials, electricity, type of latrine, waste disposal system, drinking water).

To summarize this information into one variable, a factor analysis method is used in order to better appreciate household living conditions. This analysis gives a score to each household based on its properties and characteristics of their house. The total score of a household increases if its assets characterize its material well-being.

To take into consideration the fact that some assets and characteristics of the households can only reflect wealth or poverty in relation to their environment. Three places were defined for the analysis: Cotonou, another urban area and a rural area. Thus, the factor analysis was conducted independently in each of these three places.

The factor analysis was done through the procedure of the software *SPSS*. The scores of the households were used as living condition composite index. The analysis was done based on an iterative process at the end of which the more correlated variables with the first axis were chosen. All of them complied with the main criterion of the ordinal consistency on the first axis (*COPA*).

The poverty threshold was established in such a way that comparisons were objectively made. The threshold specific to each layer, corresponds to the composite index of living conditions of the same reference household for each period considered. For the urban environment, the reference household corresponds to the one who has a motor bike and a television. In addition, this household lives in a house which has access to electricity and whose walls are made with modern materials (cement, stone, block, adobe and shingles). A household which is not poor must have these minimum characteristics. Otherwise, it is considered a poor household.

So, to analyze the sensitivity of the non-monetary poverty index over time in relation to the weighting coefficients used to determine the living conditions of the household, we reproduced the factor analysis using the data of each year concerned as active

3.2. Agriculture and fisheries production and accessibility

The following table shows that almost all of the households (98%) in the intervention area as well as in the monitoring area buy food. No household receives government food support in the intervention area. Also, 73.5% of the households consume foods produced in the monitoring area while this proportion is 54.7% in the intervention area.

Table 7: Percentage of the households based on sources of foods consumed

| Main sources of foods consumed by the household | Monitoring area | Intervention area |
|---|-----------------|-------------------|
| Foods produced | 73.5 | 54.7 |
| Foods bought | 97.7 | 98.7 |
| Foods in exchange for work | 7.0 | 0.9 |
| Government food support | 0.2 | 0.0 |
| Food support from NGOs | 0.1 | 0.1 |
| Foods on credit/borrowed | 29.1 | 11.8 |
| Charity/begging | 0.1 | 0.1 |

Source: Baseline survey of “Nutrition at the Center,” CARE Benin/Togo, 2014.

Among the households who consume homegrown food, women stated that the husband is the main producer of these foods by 62.3% in the monitoring area and 45.7% by those in the intervention area.

Table 8 : Producer of foods consumed by the households, according to the study area

| Who produces the food that you eat? | Monitoring area | Intervention area |
|-------------------------------------|-----------------|-------------------|
| You (the respondent) | 47.1 | 22.3 |
| Your husband | 62.3 | 45.7 |
| Other women in the family | 4.3 | 4.3 |
| Other men in the family | 4.0 | 4.3 |
| Neighbors | 4.8 | 6.1 |
| Collective farm | 1.2 | 0.3 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

Whichever the study area, few households have kitchen gardens for food production for their family or for personal consumption. As a matter of fact, the percentage of women who have a kitchen garden is 11.7% in the monitoring area and 10.9% in the intervention area.

Figure 4: Percentage of women surveyed based on the possession of kitchen gardens for food production and/or a water territory for fishing

| |
|--|
| Possession of a kitchen garden for food production |
| |
| Possession of water territory designated for fishing |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014..

The percentage of the households who have a water territory to fish for their family or for personal consumption is comparatively higher in the monitoring area (32.6%) than in the intervention area (11.8%).

Table 9: Percentage of households based on the type of fishing products and its use

| | Monitoring area | Intervention area |
|---|-----------------|-------------------|
| <u>Type of fishing products</u> | | |
| Fish | 32.2 | 11.7 |
| Shellfish | 10.7 | 2.4 |
| Mollusks | 5.0 | 0.7 |
| Marin’s mammals | 0.1 | 0.0 |
| <u>Main use of halieutic production</u> | | |
| Personal/family consumption | 32.2 | 11.3 |
| Sale | 23.6 | 8.8 |
| Exchange | 1.0 | 0.0 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

The main fishing product is fish, respectively for 32.2 % of the households in the monitoring area and 11.7% of the households in the intervention area. In general, fishing products are primarily used for personal or family consumption (32.2% in the monitoring area against 11.3% in the intervention area). The sale of these products is still secondary in the two areas (23.6% in the monitoring area and 8.8% in the intervention area).

3.3. Food conservation and storage

This section deals with food conservation and storage which is an important phase in improving food security in households, especially in remote areas where the populations do not always have easy access to markets or live in the areas where markets function poorly or periodically. A good management of products harvested or exchanged on the market can provide a security net to poor households.

In the project intervention area, only 7.6% of the households surveyed conserved their fruits and vegetables for future use within the past 12 months against 17.4% in the monitoring area.

Table 10: Percentage of households who conserved fruits and vegetables and stored crops planted within the past 12 months for future use

| | | Monitoring area | Intervention area |
|---|-----|-----------------|-------------------|
| Conservation of fruits and vegetables planted within the past 12 months | Yes | 17.4 | 7.6 |
| | No | 82.6 | 92.4 |

| | | | |
|---|-----|------|------|
| Storage of crops planted within the past 12 months | Yes | 30.0 | 23.3 |
| | No | 69.8 | 76.7 |
| <u>Source:</u> Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014. | | | |

The storage of crop seeds to be planted is more frequent in households in the monitoring area. In fact, 23.3% of the households in the intervention area have stored, within the past twelve months, seeds which will be planted against 30% in the monitoring area.

3.4. Agricultural extension

As mentioned earlier, agricultural production is the second mode of access to foods by households. Within the past 12 months, however, only 12% of the households in the intervention area and 11% of those in the monitoring area received the visit of an agricultural advisor.

Table 11: Percentage of households visited by an agricultural advisor or a technician specialized in breeding within the past 12 months

| | | Monitoring area | Intervention area |
|---|-----|-----------------|-------------------|
| Met or visited by an agricultural advisor within the past 12 months | Yes | 11.1 | 11.9 |
| | No | 88.9 | 88.1 |
| Met or visited by a technician specialized in breeding within the past 12 months | Yes | 2.9 | 7.1 |
| | No | 96.9 | 92.8 |
| <u>Source:</u> Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014. | | | |

The proportion of households who had a visit from an agricultural technician specialized in crop breeding was low especially in the monitoring area. As a matter of fact, only 2.3% of the households in this area received the visit of a specialist in crop breeding against 7.1% in the intervention area.

It is clear that agricultural counselors are rare in both areas. This explains the low productivity following the recourse to the markets for the satisfaction of food needs (refer to section on access to foods).

3.5. Food security: Hunger scale in households

3.5.1. Households survival strategies

To address these issues, households usually use coping strategies. The results in the following table show that the household’s coping strategy index is on average 23.2. In the monitoring area, the survival strategy index is on average 25.6 while in the intervention area, equal to 21.8.

Table 12: Survival strategy index based on the study area and the wellness quintile

| | Average | Total number of respondents |
|---|---------|-----------------------------|
| Monitoring area | 25.6 | 554 |
| Intervention area | 21.8 | 896 |
| Whole area of study | 23.2 | 1450 |
| <u>Quintile of household living condition</u> | | |
| Very poor | 25.0 | 251 |
| Poor | 23.9 | 314 |
| Average | 22.9 | 357 |
| Rich | 24.1 | 272 |
| Very rich | 20.3 | 256 |
| Total | 23.2 | 1450 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

The use of survival strategies varies according to the wellness quintile of the households and is more often adopted by poor households which belong to the very poor or poor quintiles (survival strategy index respectively estimated at 25.0 and 23.9 averagely). The households which belong to the average quintiles (22.9 in average), rich (averagely 24.1) and very rich (20.3 in average) tend to not make use of survival strategies.

Box 2: Methodology of the calculation of the coping strategy Score (CS/)

The coping strategies are the responses of the households who face difficulties in accessing food. They reflect the level of stress the household faces and its future resilience. Food and non-food strategies are taken into consideration; twelve strategies were taken into consideration within the framework of this survey. Each strategy was assigned a weight based on the gravity of the strategy by the technical team of the survey in collaboration with CARE Benin/Togo and CARE USA.

The list of the strategies chosen and the weights applied are presented as follows:

| Strategies | Weight applied (p _i) |
|--|----------------------------------|
| 1. Eat less nutritional and cheaper foods? | 1 |
| 2. Borrow food, or rely on a friend or a parent support? | 2 |
| 3. Buy food on credit? | 2 |

| | |
|--|---|
| 4. Eat foods which were picked or hunted? | 1 |
| 5. Consume seeds (initially conserved for the next season)? | 2 |
| 6. Send members of the household to eat in parents or friends house? | 2 |
| 7. Send members to ask for charity? | 2 |
| 8. Reduce quantity (reduction of the size of the rations)? | 1 |
| 9. Give the adults less food so that young children can eat? | 3 |
| 10. Feed the members who work and leave the ones who do not? | 3 |
| 11. Reduce the daily number of meals? | 1 |
| 12. Spend entire days without eating? | 4 |

The score of the survival strategy is obtained by summing up the frequency (0 to 7) of each strategy, multiplied by the weight assigned to each of them.

f_j is the number of days that the households used the strategy within the last 7 days.

A high score reveals a high use of survival strategy which can have a negative impact on households food security

Source: *INSAE*, 2014

3.5.2. Women feeding diversification

Almost half of the women surveyed (48.0%) have an undiversified feeding regime. This proportion of women is higher in the intervention area (50.2%) than in the monitoring area (44.7%).

In general, the dietary diversity score is low for the entire study area (<4).

Table 13: Score of women with diversified feeding and percentage of women with an undiversified feeding regime (*HDDS<4*)

| | Score of food diversity | Percentage of households with an undiversified feeding regime (<i>HDDS<4</i>) | Total number of women respondents |
|-------------------|-------------------------|--|-----------------------------------|
| Monitoring area | 3.7 | 44.7 | 865 |
| Intervention area | 3.5 | 50.2 | 1274 |
| Total | 3.6 | 48.0 | 2139 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

The poor diversification of feeding regime explains the low score of household’s food diversity (3.6% in average), an average of 3.7% in the monitoring area and 3.5% in the intervention area.

Box 3: Methodology of calculation of households feeding diversity (*HDDS*)

The Household dietary diversity score (HDDS) HDDS determines the number of foods consumed (without nutritional quality-based weighing): each group counts for 1 point in the score which varies from 1 to 9 points. These indicators refer to the household’s food consumption within the 24 hours preceding the survey. Generally, the variation coefficient of this indicator is quite high (due to the daily intra-household variability). It is more significant at the population level than at the household level.

The list of food groups used for the calculation of food diversity score is presented as follows:

| Description of the food groups | <i>HDDS</i> Code | Examples |
|--|------------------|---|
| Cereals, Grains, Roots, Tubers | 1 | Cereal products for example corn / corn flour paste, wheat, sorghum, millet or other cereals or foods made from these products (bread, noodles, porridge) |
| | | Potatoes, yams, cassava, other foods made from roots (for example taro) |
| Rich in vitamin A of fruits and vegetables | 2 | Carrot, marrow or sweet potatoes whose fruit are orange (for example, palm nut) |

| | | | |
|-----------------------------|---|---|--|
| | | Ripe mangoes, watermelons, apricots (fresh or dry), ripe papaya, dry peach, guava, pomegranate, | |
| Other fruits and vegetables | 3 | Other vegetables (for example, tomato, onion, eggplant), especially wild vegetables | |
| | | Other fruits including wild fruits | |
| Dark green vegetables | 4 | Green vegetables / dark green leaves including wild <i>crinclin</i> , spinach, cassava leaves, cabbages | |
| Offal | 5 | Offal, liver, kidneys, heart or other or blood-based foods | |
| Meat and fish flesh | 6 | Beef, pork, lamb, goat, rabbit, game, chicken, duck or other birds | |
| | | Fresh fish, dry fish, dry shellfish or dry small fish | |
| Eggs | 7 | Chicken, duck, Guinea fowl eggs or any other egg | |
| Vegetables, nuts, grains | 8 | Beans, peas, lentils, nuts, grains or foods made from these elements | |
| Milk and dairy-products | 9 | Milk, cheese, yogurts or other dairy products | |

To determine the value for this indicator, it is necessary to create a variable for the 9 groups of foods. Each of the 9 variables is assigned 1 point, if one of the products of the group is consumed. Determine the score of the 7 groups of foods as follows: Start with a score of 0. For each of the 7 groups of foods, add one point if one of the foods of this group is consumed.

There is no threshold intentionally know to define a “good” or “bad” food diversity. The thresholds of the Integrated Framework for Food Security Classification are used (below 4: undiversified diet; 4-9: diversified diet).

The calculation of the minimum food diversity for children is calculated in a similar way to the food diversity score in households, except the number of foods is not taken into account. If the value is higher than three, the child has minimum food diversity.

The 7 groups of foods used for the calculation of the indicator of minimum food diversity are the following:

1. cereals, roots and tubers
2. vegetables and nuts
3. dairy products (milk, yogurt, cheese)
4. meat products (meats, fish, poultry, liver/offal)
5. eggs
6. fruits and vegetables rich in vitamin A
7. other fruits and vegetables

Source : *INSAE*, 2014

3.6. Maternal health

3.6.1. Prevalence of mothers anemia

Anemia is a disease characterized by the decreased number of red blood cells weakening the concentration of hemoglobin in the blood. Anemia is usually due to lack of dietary iron, vitamin B12 or other nutrients. Though anemia is caused by parasitosis, hemorrhages, congenital diseases or chronic diseases, it is usually due to a lack of nutrients, especially rich in iron (DeMaeyer, 1989 ; Yip, 1994).

Women born between 1964 and 1998 living in the households chosen had a hemoglobin test. According to the classifications (WHO, DeMaeyer, 1989), anemia is considered severe when the hemoglobin level per deciliter of blood is below 8.0 g ; moderate when this value is between 8.0 and 10.99 g/dl and minor when the value is between 11 and 11.99g/dl.

The results indicate that there are no women suffering from severe anemia in the intervention area. And in the monitoring area, the proportion of women suffering from this type of anemia is very insignificant (0.4%). More than half of the women surveyed are suffering from moderate and minor types of anemia, while there are many in the intervention area than in the monitoring area. As a matter of fact, 28.0% and 30.7% of the women are respectively suffering from moderate and minor anemia in the intervention area against respectively 26.6%

and 25.6% in the monitoring area.

Table 14: Percentage of mothers of children under three suffering from anemia, classified according to the types of anemia

| Areas | Anemia-mother | | | | | Total number |
|-------------------|----------------|-----------------------|-------------------------|------------------|-------|--------------|
| | No anemia case | Slight (11-11.99g/dl) | Moderated (8-10.99g/dl) | Severe (< 8g/dl) | Total | |
| Monitoring area | 47.1 | 25.6 | 26.9 | 0.4 | 100.0 | 238 |
| Intervention area | 41.3 | 30.7 | 28.0 | 0.0 | 100.0 | 189 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.6.2. State of Body Mass Index among mothers

Underweight women before pregnancy are at risk during the course of their pregnancy and at birth. In addition, the people who are overweight or obese are more likely to develop high blood pressure. During the survey, women born between 1964 and 1998 and mothers of children under three years were also subjected to weight and height measuring. Pregnant women were excluded from these measurements. These weight and height measurements enabled us to determine the Body Mass Index (BMI) or *Quételet* index.

BMI is an indicator which helps to demonstrate the lack or excess of weight by checking height. Moreover, it has the advantage that it does not necessarily need the use of reference tables as in the case of the height-for-age measurement. It is an indirect indicator of the socioeconomic status of the mother. To indicate the chronic energy deficiency, the threshold value 18.5 kg/m² is generally used. On the other hand, to indicate that the mother is overweight, the threshold chosen is 25 kg/m² or more.

The results of the BMI calculation, shown in the table below reveal that more than six mothers out of ten (61.0% in the monitoring area and 69.1% in the intervention area), do not have any weight-related issue. In return, in the monitoring area, one woman out of ten is suffering from chronic energy deficiency (BMI inferior to 18.5 kg/m²) against 7.8% in the intervention area.

On the other hand, about one mother out of four in the intervention area (23,1 %) and 28,8% of the mothers in the monitoring area are overweight (BMI superior or equal to 25), among which 8,9 % and 18% respectively in the intervention area and in the monitoring area are classified as obese people (BMI above 30 or more).

Table 15: Percentage of mother’s BMI by study area

| Study area | Mother’s BMI | | | | Total | Effectif |
|-------------------|--------------|-----------|-----------|------|-------|----------|
| | <18.5 | 18.5-24.9 | 25.0-29.9 | >=30 | | |
| Monitoring area | 10.2 | 61.0 | 10.8 | 18.0 | 100.0 | 807 |
| Intervention area | 7.8 | 69.1 | 14.2 | 8.9 | 100.0 | 1102 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

A secondary approach to determine all types of acute malnutrition among women from 15 –

49 years involves using the arm measurement. Thus, during the survey, the arm measurement was taken on the left arm using a PB ribbon (Shakir's strip), between the shoulder and the elbow of women between 15-49 years. Women whose BMI is below 180 mm are considered to be at mortality risk.

Based on the results in the following table, in the intervention area, the proportion of women from 15 to 49 years whose arm measurement was below the critical threshold (180 mm) was estimated at 0.2%, while in the monitoring area, this proportion was 0.3%. Otherwise, the prevalence of acute moderated malnutrition among women of 15-49 years represents 5.7% in the monitoring area against 3.5% in the intervention area.

Table 16: Nutritional status of women between 15 - 49 years

| Study area | Severe case (PB < 180 mm) | Moderated case (180 mm ≤ PB < 230 mm) | Normal status (PB ≥ 230) |
|-------------------|------------------------------|--|-----------------------------|
| Monitoring area | 0.3 | 5.7 | 94.0 |
| Intervention area | 0.2 | 3.5 | 96.3 |
| The whole area | 0.3 | 4.3 | 95.4 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.6.3. Prenatal Care

The medical supervision during pregnancy has an important influence on the mother and child's health. Indeed, prenatal care can be able to detect complications likely to endanger the mother/child's health. Moreover, prenatal consultations are used as an occasion to protect the mother-to-be and her child against anemia, malaria and tetanus and to give nutritional advice to the mother. To ensure the proper monitoring of the pregnancy, WHO recommends at least four prenatal visits before delivery.

Figure 5: Distribution of women according to whether they went to prenatal visits or had pre-delivery care, by study area

Note : The number of women who responded was 1,275 for the area of intervention and 871 for the control area

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

The results of the above figure shows the distribution of mothers who had a live birth during the three years preceding the survey by whether or not they attended prenatal care. The results indicate better monitoring of the last pregnancy by the mothers residing in the intervention area. In fact, almost all of the mothers had been to prenatal visits for their last pregnancy in the intervention area (99.1%) as well as in the monitoring area (98.6%).

3.6.4. Type of staff consulted for prenatal care

The type of staff consulted for prenatal care plays a fundamental role in the good development of the pregnancy. During data collection, when many types of staff were

consulted by the woman, only the most qualified person had been registered in the questionnaire. The results presented in the table below show that for the last pregnancy, more than nine women out of ten (98.8%) have met a trained health personnel for prenatal consultations (doctor, nurse/mid-wife, nursing auxiliary, community agents). It is mainly nurses/mid-wives who are the most visited by the mothers (respectively 91.1% for the intervention area and 89.9% for the monitoring area).

Figure 6: Percentage of women by type of health staff who have been to prenatal visits

NB: Trained health workers encompass the nurses, doctors, mid-wives and nursing auxiliaries

Source: Baseline survey of the nutrition at the center program, CARE Benin/Togo, 2014.

3.6.5. Place of delivery

The study also took the place of delivery of the most recent delivery into consideration. The following figure shows that for most of the mothers, the most recent delivery happened in a health facility.

The quasi-totality of the births in the study area (97.7 %) happened in a health center, mostly in the public sector (88.3 % against 9.4 % for the private sector). On the other hand, in 1.5 % of the cases, women delivered at home.

In considering the place of delivery by study area, it is clear that it is in the project intervention area that the percentage of women who have given birth in a health center is higher (98.6%) against 96.3% in the project monitoring area.

It should, however, be noted that the proportion of women who have had live births in a public health center is more important in the monitoring area than in the intervention area (95.1% against 83.7%).

Figure 7: Percentage of mothers according to the place of delivery

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014

The level of living standard of the household influences the place of delivery for the women. Indeed, the analysis based on household’s economic well-being quintile helps to realize that in the monitoring area as well as in the intervention area, the percentage of delivery in a health center is slightly higher in the wealthy class than in the poor class. Indeed, this proportion is respectively 95.2% and 97.2% in the poorest class in the monitoring area and the intervention area against respectively 96.9% and 99.6% for the richest in the monitoring area and in the intervention area.

The results of the table below show that women who live in the poorest households mostly deliver at home. Indeed, the proportion of the women who have delivered at home is 4.1% among the poorest against 2.4% for the richest class in the monitoring area. This proportion is respectively estimated at 1.7% against 0.0% for the intervention area.

Table 17: Distribution (in %) of live births by place of delivery and by study area and based on economic well-being quintile

| Study area | Quintile of wellness | House | Health center | | | Other | Missing | Total |
|-------------------------|----------------------|-------|---------------|----------------|---------------------|-------|---------|-------|
| | | | Public sector | Private sector | Whole area of study | | | |
| Monitoring area | Very poor | 4.1 | 93.9 | 1.4 | 95.2 | 0.7 | 0.0 | 100.0 |
| | Poor | 3.4 | 94.7 | 1.5 | 96.1 | 0.0 | 0.5 | 100.0 |
| Average | 2.5 | 96.0 | 1.4 | 97.5 | 0.0 | 0.0 | 100.0 | |
| Rich | 2.5 | 96.9 | 0.0 | 96.9 | 0.6 | 0.0 | 100.0 | |
| | Very rich | 2.4 | 91.6 | 2.4 | 94.0 | 1.2 | 2.4 | 100.0 |
| | The whole area | 3.0 | 95.1 | 1.3 | 96.3 | 0.3 | 0.3 | 100.0 |
| Intervention area | Very poor | 1.7 | 84.3 | 12.9 | 97.2 | 0.6 | 0.6 | 100.0 |
| | Poor | 1.3 | 82.2 | 14.2 | 96.4 | 2.2 | 0.0 | 100.0 |
| Average | 0.4 | 85.2 | 14.0 | 99.2 | 0.4 | 0.0 | 100.0 | |
| Rich | 0.0 | 88.0 | 11.6 | 99.6 | 0.4 | 0.0 | 100.0 | |
| | Very rich | 0.0 | 79.8 | 19.6 | 99.4 | 0.3 | 0.3 | 100.0 |
| | The whole area | 0.5 | 83.7 | 14.9 | 98.6 | 0.7 | 0.2 | 100.0 |
| Whole of the study area | Very poor | 2.8 | 88.6 | 7.7 | 96.3 | 0.6 | 0.3 | 100.0 |
| | Poor | 2.3 | 88.2 | 8.1 | 96.3 | 1.2 | 0.2 | 100.0 |
| Average | 1.5 | 90.9 | 7.4 | 98.3 | 0.2 | 0.0 | 100.0 | |
| Rich | 0.9 | 91.2 | 7.4 | 98.6 | 0.5 | 0.0 | 100.0 | |
| | Very rich | 0.5 | 82.1 | 16.3 | 98.4 | 0.5 | 0.7 | 100.0 |
| | The whole area | 1.5 | 88.3 | 9.4 | 97.7 | 0.6 | 0.2 | 100.0 |

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014

3.6.6. Assistance during delivery

The assistance during the delivery of the last child who is less than three years old has also been a concern during the survey. It is one thing to ensure a proper monitoring of the pregnancy but quite another to give birth by benefiting from the assistance of a well-trained medical staff. The results of the data collection show that for nine women out of ten, the last delivery was assisted by a trained health worker (93.7% of births in the monitoring area and

96.4% of those in the intervention area).

Figure 8: Percentage of women based on the qualification of the person who assisted during the last pregnancy

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.6.7. Intake of iron tablets

The intake of iron tablets by the mother during the pregnancy is fundamental because it helps avoid iron deficiency in the pregnant woman’s body. It generally starts at the end of the first term of the pregnancy and continues until delivery.

Table 18: Percentage of woman according to iron tablet intake during their last pregnancy

| Iron tablet intake by the pregnant women during the last pregnancy | | | | | |
|--|-----------|-----------------|---------|-------|------------------|
| | Yes | No | Missing | Total | T o t a l number |
| Monitoring area | 96.0 | 3.2 | 0.8 | 100.0 | 872 |
| Intervention area | 96.0 | 3.2 | 0.8 | 100.0 | 1275 |
| Number of days during which the pregnant woman took the iron tablets during her last pregnancy | | | | | |
| Are | < 90 days | 90 days or more | Missing | Total | T o t a l number |
| Monitoring area | 44.2 | 53.1 | 2.7 | 100.0 | 844 |
| Intervention area | 19.7 | 79.2 | 1.1 | 100.0 | 1238 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

Thus, if the pregnancy is well monitored, a pregnant woman would have taken at least 90 iron tablets (one tablet daily from the first term to the third term of pregnancy) before delivery. The survey reveals that 96% of the mothers in the intervention and monitoring areas respectively have taken iron tablets during their last pregnancy. Among these, only 53.1% have taken iron tablets for 90 days or more in the monitoring area while in the intervention area, more than three women out of ten (79.2%) have taken these tablets.

3.6.8. Post-partum care

The post-partum consultation is important for every woman who has recently given birth. It must be done within 6 to 8 weeks after delivery. It can be done by the doctor or the mid-wife, if the delivery and the post-partum period are normal. The post-partum visit helps, especially the mother, to be sure of the good psychomotor development of the child, to express her concerns, improve her knowledge, and benefit from advice, for her well-being and that of her child.

During the survey, the women who had live deliveries within the three years before the survey were asked if after delivery they had a post-partum check-up and if so, how long after delivery this check-up was done.

Table 19: Percentage of woman based on post-partum consultations after their last delivery

| Areas | Referral to post-partum care after the last delivery | | | Average number of days before post-partum visits | Total number |
|-------------------------|--|------|---------|--|--------------|
| | Yes | No | Missing | | |
| Monitoring area | 64.7 | 34.4 | 0.9 | 12.0 | 872 |
| Intervention area | 41.3 | 58.5 | 0.2 | 16.4 | 1275 |
| Whole of the study area | 50.8 | 48.7 | 0.5 | 14.1 | 2147 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

The above table shows that in the intervention area, less than half of the mothers (41.3%) went to a health center for post-partum check-up, against the two thirds in the monitoring area (64.7%). The women in the intervention area had on average spent more days (16.4 days) before going to a post-partum check-up after the last delivery, compared with the women in the monitoring area (12.0 years).

3.7. Infant and young child feeding practices

3.7.1. Early introduction to breastfeeding

Breastfeeding is of special importance because breast milk is safe, it transmits antibodies from the mother and all the nutritional elements necessary for the children during their first months of life. Moreover, breast milk helps to avoid nutritional deficiency and prevents diarrhea and other diseases. Therefore, considering the importance of breastfeeding, women were questioned about the breastfeeding of their children born within the three years before the survey. The answers help gather data on the early introduction of breastfeeding to the children under two years. This data is presented in the following table.

Table 20: Percentage of women from 15-49 years based on the timely introduction to breastfeeding (children from 0 -23 months)

| Time spent before the first sucking of the last born | Monitoring area | Intervention area |
|--|-----------------|-------------------|
| Immediately | 36.8 | 43.8 |
| Less than one hour | 25.5 | 18.5 |
| From one to 24 hours | 23.1 | 26.3 |
| One day or more | 14.4 | 11.4 |
| Don't know/ Can't remember | 0.2 | 0.0 |
| Total | 100.0 | 100.0 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

It shows that less than half of the children under two years old were immediately breastfed after their birth (43.8% in the intervention area and 36.8% in the monitoring area). 18.5% of the children in the intervention area were breastfed one hour after their birth against 25.5% in the monitoring area. In addition, 26.3% and 23.1% respectively of the children in the intervention and monitoring area were breastfed between 1 hour and 24 hours after their birth. Yet, it is during these first breast feedings (within the 24 hours after birth) that the child receives the colostrum containing the mother’s antibodies which are fundamental to enable the child to resist a lot of diseases. It is noted that 11.4% of the children in the intervention area and 14.4% in the monitoring area were not breastfed within the 24 hours after their birth.

3.7.2. Exclusive breastfeeding

According to the UNICEF and WHO recommendations, all children should exclusively be breastfed from birth until six months. The early introduction of other liquids is not recommended because it may expose the children to pathogen agents and increase the risk of diseases, especially diarrhea. In addition, it reduces the intake of formula by the child, and therefore the sucking which reduces milk production. Besides, among economically poor populations, other liquids or foods are not nutritious. On the other hand, from six months, breastfeeding must be supplemented by other appropriate foods to satisfy the nutritional needs of the child and enable him/her to have the best growth possible.

Table 21: Percentage of women from 15-49 years based on infants early feeding practice

| Infants early feeding practices | Monitoring area | Intervention area |
|--|-----------------|-------------------|
| Children who have received another food in addition to breast milk within the first three days after birth | 20.1 | 15.5 |
| Children exclusively fed with breast milk for the 3 days after birth | 79.4 | 84.2 |
| Missing answers | 0.5 | 0.3 |
| Total | 840 | 1257 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

During the survey, information collected about the premature introduction of foods was obtained by asking the mother if in the three first days of life her child had been given another food in addition to breast milk. The data collection results show that 15.5% of the children in

the intervention areas and 20.1% of those in the monitoring were given another food in addition to breast milk.

On average, 31.4% of the children from 0 to 5 months are exclusively breastfed in the monitoring area against 39.2% in the intervention area. These statistics are higher concerning the children who received another liquid in addition to breast milk within the first three days after birth, 52% of children in the monitoring area and 53.4% in the intervention area.

Table 22: Infants exclusively breastfeed and early feeding practices (0-5 months)

| | Monitoring area | Intervention area |
|--|-----------------|-------------------|
| Exclusive breastfeeding (0-5 months) | 31.4 | 39.2 |
| Percentage of children (0-5 months) who received another liquid/drink in addition to breast milk within the first 3 days after birth | 52.0 | 53.4 |
| Percentage of children (0-5 months) exclusively breastfed within the first 3 days of life | 2.3 | 2.3 |
| Percentage of children (0-5 months) who received plain water within the first three days of life | 37.6 | 40.7 |
| Percentage of children (0-5 months) who received a solution against abdominal pain within the first three days of life | 17.6 | 13.7 |
| Percentage of children (0-5 months) who received sugary and salty solution within the first three days of life | 6.0 | 3.2 |
| Percentage of children (0-5 months) who received fruit juices within the first three days of life | 1.4 | 0.0 |
| Percentage of children (0-5 months) who received infant formula within the first three days of life | 3.7 | 1.4 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

An average 2.3% of children were exclusively breastfed in the intervention area as well as in the monitoring area. 37.6% of the children in the monitoring area were given plain water within the first three days of life against 40.7% in the intervention area. On average 17.6% of the children in the monitoring area received medicine against stomach ache within the first three days of life against 13.7% in the intervention area. Concerning the children who received sugary and salty drinks within the first three days of life, an average of 6% are from the monitoring area and 3.2% in the intervention area.

3.7.3. Timely complementary feeding

The results of the table 23 show that a relatively small number of infants from 0 to 5 months

were given oral rehydration salts/ORS within the 24 preceding hours. It is the same case for those who had been given fruit juices or derivatives, or were given porridge.

Table 23: 0 to 5 months infants feeding practices (within the 24 preceding hours) by target group

| | Monitoring area | Intervention area |
|--|-----------------|-------------------|
| Percentage of infants (0-5months) breastfed (yesterday) | 100.0 | 100.0 |
| Percentage of infants (0-5 months) who were given vitamin syrup/ syrup against cough/ any other medicine | 6.7 | 9.5 |
| Percentage of infants (0-5months) who received oral rehydration salts / SRO | 0.0 | 0.5 |
| Percentage of infants (0-5 months) who received plain water | 59.0 | 53.1 |
| Percentage of infants (0-5 months) who received infant formula | 12.4 | 11.4 |
| Percentage of infants (0-5 months) who received milk (fresh, canned, powder) | 2.4 | 0.9 |
| Percentage of infants (0-5 months) who received juices or derivatives | 1.0 | 0.0 |
| Percentage of infants (0-5 months) who received light stock | 30.5 | 5.2 |
| Percentage of infants (0-5 months) who received other water derivative liquids | 0.0 | 0.0 |
| Percentage of infants (0-5 months) who received milk or yogurt | 1.0 | 0.5 |
| Percentage of infants (0-5 months) who received porridge | 1.0 | 0.5 |
| Percentage of infants (0-5 months) who received tea or coffee | 1.4 | 1.4 |
| Percentage of infants (0-5 months) who received other liquids | 3.8 | 5.7 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

Infants from 0-5 months who received vitamin syrup/syrup against cough/any other medicine represents an average of 6.7% of the infants of this age, in the monitoring area and 9.5% in the intervention area. For the infants from 0-5 months who have been given plain water, these values are 59% and 53.1% of the infants respectively in the monitoring and intervention area. In regards to infants who have been given infant formula, these statistics amount to an average of 12.4% in the monitoring area and 11.4% in the intervention area.

Figure 9: Percentage of infants exclusively breastfed and percentage of infants receiving solid, semi-solid or soft foods, based on the infant's age

Note: Age on the horizontal axis and percentage on the vertical axis

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.

Concerning infants under 6 months who have been given milk (fresh, canned, powder), they are respectively 2.4% in the monitoring area and 0.9% in the intervention area. 30.5% of the infants in the monitoring area and less, 5.2% in the intervention area were infants who were given light stock. The same proportion of infants (1.4%) is obtained in the monitoring area as well as in the intervention area who have been given tea or coffee. Finally, 3.8% of infants in the monitoring area and 5.7% in the intervention area have been given other liquids other than milk.

In light of the result in figure 9, the practice of exclusive breastfeeding decreases as the infants grow older. As a matter of fact, as shown in the figure, the proportion of children exclusively breastfed after six months decreases and tends towards zero from 10 months. In contrast, infants' complementary feeding increases and tends towards 100% as the infant grows older. As shown in figure 9, the proportion of infants receiving solid, semi-solid or soft foods tends towards 100% for 10 months old and older babies.

3.7.4. Continued breastfeeding after one year

On average, 94.6% of the children between 12-15 months have been breastfed within the past 24 hours in the monitoring area against 92.5% in the intervention area. 70.7% of the children between 16-23 months were breastfed in the monitoring area within the past 24 hours against 47.4% in the intervention area.

Table 24: Continued breastfeeding after 1 year and from 16 - 23 months

| | Children from 12-15 months | | Children from 16-23 months | |
|-----------------|---|--------------|---|--------------|
| | Percentage of children breastfed within the past 24 hours | Total number | Percentage breastfed within the past 24 hours | Total number |
| Monitoring area | 94.6 | 74 | 70.7 | 184 |

| | | | | |
|-------------------|------|-----|------|-----|
| Intervention area | 92.5 | 67 | 47.4 | 312 |
| Whole study area | 93.6 | 141 | 56 | 496 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.7.5. Introduction of solid, semi-solid or soft foods

The results in this table show that in the whole study areas, two third of the infants from 6 to 9 months were given solid, semi-solid or soft foods the previous day. The proportion of these children is estimated at 49.1% for the intervention area and 80.6% for the monitoring area.

In the analysis of the current infants’ breastfeeding status, very few of the non-breastfed infants (6 to 9 months) were given solid, semi-solid or soft foods the previous day. For the infants breastfed, the proportion of the infants from 6 to 9 months who were given solid, semi-solid or soft foods the previous day was estimated at 47.2% in the intervention area and 80.0% in the monitoring area.

Table 25: Percentage of infants (6-9 months) who received solid, semi-solid or soft foods the previous day

| | | Percentage | Total number |
|------------------------|-------------------|------------|--------------|
| Children non-breastfed | Monitoring area | 100.0 | 2 |
| | Intervention area | 75.0 | 4 |
| | Whole study area | 83.3 | 6 |
| Children breastfed | Monitoring area | 80.0 | 60 |
| | Intervention area | 47.2 | 53 |
| | Whole study area | 64.6 | 113 |
| All the children | Monitoring area | 80.6 | 62 |
| | Intervention area | 49.1 | 57 |
| | Whole study area | 65.5 | 119 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.7.6. Minimum feeding diversity

The feeding diversification enables the child to discover little by little new pleasant tastes. It is recommended that the baby be breastfed until at least six months before the adoption of a feeding diversification. As a matter of fact, the number of children’s food allergies increases, especially due to the early diversification of food.

The analysis of the results of the following figure shows that on the average, 23.1% of the children from 6 to 23 months received minimum acceptable feeding in the monitoring area against 27.7% of the children of the same age in the intervention area. For the children breastfed, the proportion of those who received the minimum acceptable feeding was estimated at 21.1% for the monitoring area and 21.6% for the intervention area. On the other hand, for the non-breastfed children, the proportion of those who were given the minimum acceptable feeding (in addition to breast milk) was estimated at 32.8% for the monitoring area and 38.5% for the intervention area.

Figure 10: Percentage of children from 6 to 23 months who were given the minimum acceptable feeding

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014

3.7.7. Complementary foods consumed by children in the last 6 to 23 months

The analysis of the results in the table below reveals that on the average, 49.0% of the children from 6 to 23 months have eaten dark green leafy vegetables in the monitoring area against 24.4% in the intervention area. On the other hand, 39.7% ate other vegetables in the monitoring area against 51.3% in the intervention area. The children ate more fruits richer in vitamin A in the monitoring area (3.6% of the children) than in the intervention area where children who ate other fruits (10.0% of the children).

It is noted that children eat more meat and eggs in the monitoring area, respectively 1.6% and 5.8% of children than in the intervention area (0.8% and 3.0% of the children). No matter the area, the average of children who have eaten vegetables, nuts and grains is superior to 18% but, more in the intervention area (20.6% of the children). The proportions of children who consume milk and dairy products and those of the children who have consumed oil, fats or butter or derivatives are more important in the intervention area (3.8% of children and 35.1%) than in the monitoring area (1.4% of children and 30.1%).

The proportions of children who ate enriched foods(4.8%), those who ate ingredients (66.0%) and those ate sugary foods like biscuits, candies, chocolate and pastries (20.7%) are higher in the intervention area than in the monitoring area. Children ate more salty products and other foods in the monitoring area (1.4% et 5.2%) than in the intervention area (0.2% and 3.3%).

Table 26: Percentage of infants from 6 to 23 months based on diversified feeding

| | Monitoring area | Intervention area |
|---|-----------------|-------------------|
| Percentage of children who ate deep green vegetables | 49.0 | 24.4 |
| Percentage of children ate other vegetables | 39.7 | 51.3 |
| Percentage of children who ate fruits rich in vitamin A | 3.6 | 2.0 |
| Percentage of children who ate other fruits | 8.8 | 10.0 |
| Percentage of children who ate giblets | 0.0 | 0.0 |
| Percentage of children who ate meats | 1.6 | 0.8 |
| Percentage of children ate eggs | 5.8 | 3.0 |
| Percentage of children who ate leguminous foods, nuts and grains | 18.6 | 20.6 |
| Percentage of children who ate milk and dairy products | 1.4 | 3.8 |
| Percentage of children who ate oil, fats or butter or derivatives | 30.1 | 35.1 |
| Percentage of children who ate enriched foods | 2.8 | 4.8 |
| Percentage of children who ate ingredients | 62.0 | 66.0 |

| | | |
|---|------|------|
| Percentage of children who ate sugary foods like biscuits, candies, chocolates and pastries | 15,1 | 20,7 |
| Percentage of children who ate salty foods | 1,4 | 0,2 |
| Percentage of children who ate other foods | 5,2 | 3,3 |
| <u>Source:</u> Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014. | | |

Figures 11 and 12 present the situation on the child’s feeding practice based on the age. In the light of these figures, it appears that the feeding of the children under two years is supplemented by liquid, soft, solid or semi-solid foods.

Figure 11: Children’s feeding practice by age group in the intervention area

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

In children’s feeding practices, breastfeeding can, of course, be continued according to the mother’s wishes, in addition to a varied diet. In this practice, second age milk is replaced or supplemented by adult milk formulas up to 3 years. The diversification takes place in three stages :

- first, through the gradual introduction, from four months to 8 months, of other foods besides milk. The foods are still liquid, and this stage enables the child to discover new tastes.
- Then, the discovery of solid and more varied foods is done from 9 to 12 months until three years old. This period notably enables the child to familiarize with new textures (sauces, porridges, small pieces, mashes...).

As shown by the results in figures 11 and 12, the practice of complementary feeding based on milk/formula products is as low in the intervention area as in the monitoring area. On the other hand, before four months, babies receive many other non-milk liquids such as complementary foods in addition to breast milk.

Figure 12: Children’s feeding practices by age group of children in the monitoring area

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.7.8. Minimum number of meals

The following table presents the proportion of the children from 6 to 23 months (breastfed or not) according to the minimum frequency of the meals received. The analysis of this table reveals that 52.4% of the children from 6 to 23 months in the monitoring area receive the minimum number of meals against 41.2 % in the intervention area. 56% of the children from 6-23 months breastfed in the monitoring area received the minimum number of meals daily against 41.9% in the intervention area. This tendency is inversed when the children from 6-23 months non-breastfed are concerned.

Table 27: Percentage of children from 6 to 23 months based on the minimum frequency of meals

| | Monitoring area | Intervention area |
|--|-----------------|-------------------|
|--|-----------------|-------------------|

| | | |
|---|------|------|
| Percentage of children from 6-23 months who have received the minimum frequency of meals | 52.4 | 41.2 |
| Percentage of children breastfed, from 6-23 months who have received the minimum frequency of meals | 56.9 | 41.9 |
| Percentage of children from 6-23 months who have received the minimum frequency of meals (in addition to breast milk) | 31.3 | 40.1 |
| <u>Source:</u> Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014. | | |

Box 4: Definition of minimum meals frequency norms

The minimum frequency of meals, consumed by the child within the previous day or night, is an indicator of the adequate energy content of the child’s complementary feeding based on the following minimum durations depending on the age and the status of breastfeeding. In the case of children breastfed, it contains non-liquid foods and for the non-breastfed children, contains milk flow. The minimum definitions of feeding frequency are:

- 2 times for infants from 6 - 8 months breastfed
- 3 time for infants from 9 - 23 months breastfed
- 4 times for infants from 6-23 months non-breastfed

"Meals" are comprised of meals or snacks, explored in the 24 hours recall facilitating the answer to question 21 of the survey.

Source: CARE USA, 2014

3.7.9. Average and median frequency of meals for infants from 6 - 23 months

The following table presents the average and median frequency of meals for infants from 6-23 months according to whether they are breastfed or not and based on their age groups.

The analysis of the results in this table reveals that in the intervention area, the average frequency of meals for non-breastfed children is higher than the frequency of meals given to breastfed children no matter their age. For the breastfed children in the intervention area, the children from 6 to 8 months eat more frequently (3.7 times daily on the average) compared with the children of the other age groups. Also, 50% of the children from 6 to 8 months eat less than 4 times daily. On the other hand, for the breastfed children, the frequency of meals is higher for the age group of 12-23 months (3.2 time on the average) compared with the other age groups. Furthermore, 50% of the children from 12 to 23 months eat at least 3 times daily.

On the contrary, in the monitoring area, the average frequency of meals is higher for the breastfed children than the non-breastfed children no matter their age group. For the breastfed children, the frequency of meals is higher for the age group from 12-23 months (3.1 times on the average) compared to the other age groups. Therefore, 50% of the children from 12 to 23 months take less than three meals daily.

Table 28: Average and median frequency^a of meals by age group of 6-23 months, by study area and based on the current breastfeeding status

| | | Monitoring area | | Intervention area | |
|------------------------|--|-----------------|--------|-------------------|--------|
| | | Average | Median | Average | Median |
| Non-breastfed children | | | | | |
| 6-8 months | | 2.0 | 2.0 | 3.7 | 4.0 |
| 9-11 months | | 1.5 | 1.5 | 3.0 | 3.0 |
| 12-23 months | | 3.4 | 3.0 | 3.5 | 3.0 |
| Breastfed children | | | | | |
| 6-8 months | | 2.5 | 2.0 | 2.2 | 2.0 |
| 9-11 months | | 2.6 | 2.0 | 2.4 | 2.0 |
| 12-23 months | | 3.1 | 3.0 | 3.2 | 3.0 |

(a) : These frequencies take into consideration all the children from 6 to 23 months even those who were given 0 meals
 Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014..

3.7.10. Minimum acceptable diet

The above table presents the percentage of children from 6-23 months according to the minimum acceptable feeding by study area. The table indicates that the average is higher in the monitoring area for the children from 6-23 months as they were given a minimum feeding regime (12.8 children) as well as the breastfed children who received the minimum acceptable feeding regime (15.5 children) than in the intervention area. This average of the Percentage of the children from 6-23 months who were given a minimum acceptable feeding regime (in addition to breast milk) is 1.6 in the intervention area, higher than in the monitoring area where this average is 0.

Table 29: Percentage of children from 6 to 23 months based on the minimum acceptable feeding regime

| | Monitoring area | Intervention area |
|--|-----------------|-------------------|
| Percentage of children from 6-23 months who were given a minimum acceptable regime | 12.8 | 8.8 |
| Percentage of children from 6-23 months breastfed who have received the minimum acceptable regime | 15.5 | 12.8 |
| Percentage of children from 6-23 months, non-breastfed who have received a minimum acceptable feeding regime | 0.0 | 1.6 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.7.11. Consumption of iron or foods enriched in iron

The following table presents the percentage of children from 6-23 months who take iron or iron rich foods and meats, according to the study area. This table shows that the average is higher in the intervention area for children from 6-23 months who ate food rich in iron (59.8%) than in the monitoring area (41.3%).

Table 30: Percentage of children from 6 to 23 months who take iron or eat foods rich in iron and meat

| | Monitoring area | Intervention area |
|---|-----------------|-------------------|
| Percentage of children from 6 - 23 months who were given foods rich in iron | 41.3 | 59.8 |
| Percentage of children from 6 - 23 months who were given meat | 1.6 | 0.8 |
| Percentage of children from 6 - 23 months who were given foods enriched with iron | 93.2 | 91.8 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.7.12. Bottle feeding

Breastfeeding is sometimes supplemented with bottle feeding in order to assist the mother in feeding the infant. More often, liquid complements in addition to breastfeeding are put in a bottle in order to feed the baby.

The following table shows the percentage of children from 0 to 23 months bottle fed by age and area of study. The table indicates that the number of children bottle fed in the monitoring area is higher than in the intervention area, no matter their age group.

3.7.13. Person in charge of the infant feeding

Table 31: Percentage of children from 0 to 23 months bottle fed by age group and intervention area

| | Monitoring area | Intervention area |
|--------------|-----------------|-------------------|
| 0-5 months | 76.7 | 54.7 |
| 6-11 months | 73.8 | 59.8 |
| 12-23 months | 58.6 | 28.2 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

The survey was also interested in the first person responsible for feeding the infants older than 6 months for the main meal. In the following table, the data reveals that in the intervention as well as in the monitoring area, the person in charge of the child’s feeding for the main meal is the child’s mother (respectively 95.7% and 94.1%).

Table 32: Percentage of children, according to the person responsible for providing the main meal

| Person in charge of the infant’s feeding for the main meal | Monitoring area | Intervention area |
|--|-----------------|-------------------|
| The mother | 94.1 | 95.7 |

| | | |
|----------------------------|-----|------|
| The father | 1.1 | 0.2 |
| The grand-mother | 0.9 | 1.6 |
| The aunt (mother's sister) | 0.2 | 0.2 |
| Child's sister or brother | 0.8 | 0.3 |
| Others | 3.0 | 2.1 |
| Total number of children | 665 | 1061 |

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.

In almost half of the cases, the person responsible for the infant's feeding tries many things to encourage the child to eat: 43.3% of the infants of six months or above in the intervention area and 49.8% of those in the monitoring area are regularly encouraged by their mothers to eat.

Table 33: Percentage of children who are given an incentive by the person in charge of the main meal to encourage the child to eat

| Practice incentive to encourage the infant | Monitoring area | Intervention area |
|--|-----------------|-------------------|
| Action encouraging the child to eat | 49.8 | 43.3 |
| No action is taken to encourage the child | 50.2 | 56.7 |
| Total number of children | 665 | 1059 |

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.

Table 34: Summary of the WHO's IYCF practices indicator

| IYCF key practices by indicator | Intervention area | | | | | | Monitoring area | | | | | |
|---|-------------------|-----|-------|------|------|-----|-----------------|-----|-------|------|------|-----|
| | N | n | % | [| CI | N 1 | N | n | % | [| CI | N1 |
| IYCF 1: Timely initiation to breastfeeding (0-23 months) | 714 | 441 | 62.3 | 57.8 | 66.8 | 714 | 578 | 360 | 62.4 | 57.4 | 67.4 | 578 |
| IYCF 2: Exclusive breastfeeding (0-5 months) | 202 | 83 | 41.1 | 30.5 | 51.7 | 212 | 201 | 66 | 32.8 | 21.5 | 44.2 | 210 |
| IYCF 3: Adequate and timely supplementary feeding (6-8 months) | 51 | 24 | 49.0 | 28.8 | 69.2 | 57 | 56 | 46 | 80.7 | 69.2 | 92.2 | 62 |
| IYCF 4: Introduction to solid/semi-solid or soft foods (6-8 months) | 55 | 28 | 51.9 | 33.2 | 70.5 | 57 | 59 | 49 | 81.7 | 70.7 | 92.6 | 62 |
| IYCF 5: Continued breastfeeding after one year (12-15 months) | 62 | 62 | 100.0 | 10.0 | 10.0 | 67 | 70 | 70 | 100.0 | 10.0 | 10.0 | 75 |
| IYCF 6: Minimum feeding diversity (6-23 months) | 502 | 139 | 27.7 | 20.2 | 35.1 | 502 | 368 | 85 | 23.1 | 14.1 | 32.1 | 368 |

| | | | | | | | | | | | | |
|---|-----|-----|------|------|------|------|------|------|------|------|------|------|
| IYCF 7: Minimum frequency of meals (6-23 months) | 502 | 207 | 41.2 | 34.5 | 47.9 | 50.2 | 36.8 | 19.3 | 52.4 | 45.4 | 59.5 | 36.8 |
| IYCF 8: Minimum acceptable regime (6-23 months) | 502 | 448 | 8.8 | 0.4 | 17.1 | 50.2 | 36.8 | 47 | 12.8 | 3.2 | 22.3 | 36.8 |
| IYCF 9: Solid/semi-solid foods enriched with iron (6-23 months) | 502 | 461 | 91.8 | 89.3 | 94.3 | 50.2 | 36.8 | 34.3 | 93.2 | 90.5 | 95.9 | 36.8 |
| IYCF 10: Bottle feeding (0-23 months) | 714 | 293 | 41.0 | 37.9 | 44.2 | 71.4 | 57.8 | 39.3 | 68.0 | 65.5 | 70.5 | 57.8 |

Note : N: Number of children taken into account for the criterion; n: Number of children respecting the criterion; CI : Confidence Interval

N1: Total number of children of the age group concerned

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.

3.9. Infant and young child nutritional status and health

Conventionally, there are two types of malnutrition:

- malnutrition through nutrient deficiencies occurs in two forms: general malnutrition deficiency and specific malnutrition deficiency (deficiency in iron, vitamin A, zinc, folic acid, calcium, vitamin D, vitamin C, Iodine etc.) ;
- malnutrition due to overfeeding leading to being overweight, obesity or specific metabolic troubles (type 2 diabetes, hypercholesterolemia, etc.).

In this report, we are only interested in micronutrients malnutrition, especially *general deficiency*. This type of malnutrition is expressed in three ways among children under five years old: chronic malnutrition (stunted growth), acute malnutrition (emaciation) and being underweight.

For each child, anthropometric indexes height-for-age, weight-for-height and weight-for-age are calculated in Z-scores based on his age, height and weight, by referring to WHO's multiracial reference population (WHO, 2006).

The children whose indexes are below two standard deviations of WHO's median norms are considered to be suffering from malnutrition and those below less than three standard deviations are considered to be suffering from the acute type of malnutrition.

3.9.1. Emaciation

Acute malnutrition or emaciation is the result of a recent rapid weight loss or a lack of weight gaining. It gives the best reflection of the current nutritional situation of the child (at the moment of the measuring or in a recent past) and is highly influenced by the recent events in the life of the child (diseases, severe epidemic, etc.) or nutritional deficiency (drought, hunger

periods, sudden or repeated change of diet, conflict, shocks and emergency situations). This type of malnutrition is diagnosed through the weight-for-height index.

The results show that general acute malnutrition is 5.4% (Z-score weight/height < -2 or oedema) in the intervention area against 6% in the monitoring area. The two areas are prevalent between 5 and 10%, which represents a bad nutritional situation based on the WHO threshold. Boys are more affected by acute malnutrition in the intervention area. As a matter of fact, the prevalence of acute malnutrition is 6.9% among boys against 4% among girls.

It must be highlighted that the prevalence of acute malnutrition varies according to age. The table shows that the youngest (6 to 11 months) are the most affected by the acute type of malnutrition no matter the study area.

3.9.2. Underweight

Underweight is the result of the combination of the two types of malnutrition. It is diagnosed through the weight-for-age index. In the intervention area, 17.4% of the children from 6 to 35 months are underweight, including 3.4% suffering from the acute type, against 14.4% in the monitoring area.

Like the other types of malnutrition, the prevalence being underweight varies significantly according to the socio-demographics of the child. It is more accentuated among children from 12 to 35 months, no matter the study area.

It is also noted that, the proportion of girls underweight is lower than that of the boys (14% against 20.8% in the intervention area and 12.4% against 16.2% in the monitoring area).

3.9.3. Stunted growth

Chronic malnutrition is characterized by a low height for age, resulting in growth stunting. This indicator shows the cumulative effects of a long period of inadequate feeding practices or chronic pathology, or repeated morbid episodes which happened too early in the life of the child.

Based on the results of the table concerning the height-for-age index, it is noted that in the intervention area, about two out of five children, (33.8%) ages 6 to 35 months had stunted growth: 22.8% of moderate cases and 11% of acute cases against respectively one child out of five: 19.3% and 7.6% in the monitoring area.

According to the age, it is noted that in the intervention area, stunting increases with the child's age, as moderate or acute. This proportion is 7.2% for the children from 6-11 months, 32.1% for children from 12-23 months and 40.3% for those from 24-35 months. The same percentages are observed in the monitoring area.

The prevalence of stunting is very low among girls than boys (29.6% against 38.1%) in the intervention area and (26.1% against 27.6%) in the monitoring area. Cultural factors such as sexual discrimination in feeding and care given to the child can explain this difference. In Benin, such discrimination is not obvious. However, the hypothesis that the girl is usually

closer to the mother's side, thus nibbling on foods more than the young boy, who is off playing games, may be suggested.

Table 35: Percentage of children from 6 to 35 months considered to be suffering from malnutrition by area based on the three nutritional anthropometric status indexes, according to the age and gender of the child

| Areas | Characteristics of the children | Height-for-age | | Weight-for-height | | | Weight-for-age | | | Total number of children | |
|-------------------|---------------------------------|----------------|------------|-------------------|------------|-------------|----------------|------------|-------------|--------------------------|--|
| | | Below -3 ET | Below -2ET | Below -3 ET | Below -2ET | Below +2 ET | Below -3 ET | Below -2ET | Below +2 ET | | |
| Intervention area | Age group | | | | | | | | | | |
| | 6 - 35 months | 11.0 | 33.8 | 1.3 | 5.4 | 0.0 | 3.4 | 17.4 | 0.5 | 1062 | |
| | 6 - 11 months | 1.8 | 7.2 | 0.9 | 7.3 | 0.0 | 1.8 | 12.6 | 1.8 | 112 | |
| | 12 - 23 months | 10.6 | 32.1 | 1.0 | 7.3 | 0.0 | 4.9 | 18.9 | 0.5 | 390 | |
| | 24 - 35 months | 13.1 | 40.3 | 1.6 | 3.8 | 0.0 | 2.7 | 17.4 | 0.2 | 560 | |
| | Gender of the child | | | | | | | | | | |
| | Girl | 8.3 | 29.6 | 1.1 | 4.0 | 0.0 | 2.3 | 14.0 | 0.2 | 529 | |
| | Boy | 13.6 | 38.1 | 1.5 | 6.9 | 0.0 | 4.5 | 20.8 | 0.8 | 533 | |
| Monitoring area | Age group | | | | | | | | | | |
| | 6 - 35 months | 7.6 | 26.9 | 1.1 | 6.0 | 0.0 | 3.2 | 14.4 | 0.2 | 662 | |
| | 6 - 11 months | 3.7 | 6.5 | 1.9 | 8.4 | 0.0 | 2.8 | 7.5 | 0.9 | 107 | |
| | 12 - 23 months | 7.7 | 25.3 | 1.1 | 8.0 | 0.0 | 2.7 | 16.5 | 0.0 | 261 | |
| | 24 - 35 months | 8.8 | 35.7 | 0.7 | 3.4 | 0.0 | 3.7 | 15.0 | 0.0 | 294 | |
| | Gender of the child | | | | | | | | | | |
| | Girl | 6.2 | 26.1 | 1.2 | 5.9 | 0.0 | 4.0 | 12.4 | 0.0 | 322 | |
| | Boy | 8.8 | 27.6 | 0.9 | 6.2 | 0.0 | 2.4 | 16.2 | 0.3 | 340 | |

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.

3.9.4. Children's anemia

Taking inspiration in De Maeyer's work (1989), two levels of children's anemia are considered:

- The first level characterized by State 1 anemia concerns children whose concentration

| | | | | | | | | | | | |
|-------------------|-----------|-----|------|--|-----|------|-----|--|-----|------|-----|
| Intervention area | No anemia | 8.1 | 27.9 | | 1.2 | 8.1 | 0.0 | | 4.6 | 16.5 | 1.2 |
| | Anemia | 9.8 | 23.5 | | 0.7 | 5.3 | 0.0 | | 3.3 | 19.6 | 0.0 |
| | Whole | 8.7 | 26.6 | | 1.0 | 7.3 | 0.0 | | 4.2 | 17.5 | 0.8 |
| Monitoring area | No anemia | 6.4 | 20.6 | | 2.5 | 10.3 | 0.0 | | 2.0 | 13.7 | 0.0 |
| | Anemia | 6.7 | 18.9 | | 0.0 | 5.5 | 0.0 | | 3.7 | 14.0 | 0.6 |
| | Whole | 6.5 | 19.8 | | 1.4 | 8.2 | 0.0 | | 2.7 | 13.9 | 0.3 |

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.

3.10. Child diseases

Nowadays, most of infant and child deaths are due to avoidable diseases which can be treated. Some of these deaths are partially caused by infections, diarrhea and malaria. During the survey, information was collected about all of the children born within the three years preceding the survey, helping to estimate the prevalence of the leading child diseases (acute respiratory infections, fever and diarrhea). This information is fundamental for the development of any program aiming at improving young children's survival and growth.

3.10.1. Acute respiratory infections

Acute respiratory infections, especially pneumonia, are among the first causes of children's mortality in a developing country. Based on the official statistics of the Ministry of Health of Benin, acute respiratory infections represented in 2012 were the second cause of consultation and hospitalization among children aged 0 to 5 years. During the survey, and to assess the prevalence of these infections among the children, mothers were asked if their children suffered from cough within the two weeks before the survey and if the cough was followed by short and fast breathing. Among these children under three years, it was realized that six out of ten (59.6 %) had suffered from a cough with a runny nose within the past two weeks before the survey.

Concerning this infection, there is not a great difference between the intervention and the monitoring area (respectively 59.1% and 60.3%). Moreover, this cough comes with fast or difficult breathing (acute respiratory infections) for one child out of four (25.7%) in the whole reference area. This condition is more frequent among the children in the intervention area (27.0%) than among those in the monitoring area (23.8%). It is among children from 6-11 months (28.3%) that these respiratory infections are more frequent. This could be associated with the gradual weakening of the immunity due to progressive weaning. There is a slight difference between boys and girls (respectively 26.2% and 25.0%). In addition, children whose mothers did not receive any formal education are more at risk (26.3%) than those whose mothers received a formal education (24.9%).

Table 38 : Percentage of children under 3 years based on the type of diseases contracted within the two weeks before the survey and by study area

| | Monitoring area | Intervention area | Whole area of study |
|--|-----------------|-------------------|---------------------|
|--|-----------------|-------------------|---------------------|

| | | | |
|---|------|------|------|
| Children who have suffered from runny nose and cough | 60.3 | 59.1 | 59.6 |
| Children who have suffered from acute respiratory infections | 23.8 | 27 | 25.7 |
| Children who have suffered from fever | 49.7 | 51.2 | 50.6 |
| Children who have suffered from malaria confirmed by a health agent among those who had a fever | 39.4 | 27.9 | 32.5 |
| Children who suffered from diarrhea | 18.6 | 19.6 | 19.2 |
| Children whose feces contained blood | 3.4 | 3.1 | 3.2 |
| Children who were diagnosed with intestinal worms | 8.5 | 12.4 | 10.8 |
| Total number of children | 871 | 1274 | 2145 |
| Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014. | | | |

3.10.2. Fever

Fever generally results from a bacterial or viral infection like flu, but it can also be the sign of a more serious issue such as malaria in malaria risk areas. That is why, during the survey, mothers of children under three were asked if their children had suffered from fever within the two weeks before the interview. The results in the above table show that in the survey area, one child out of two (50.6%) had suffered from fever within the two weeks preceding the interview. The prevalence of fever was 51.2% among children in the intervention area against 49.7% for those in the monitoring area. When the prevalence is considered, according to some socio-demographic characteristics, it is noted that fever was more frequent among children from 6-11 months and 12-17 months (respectively 61.2 % and 59.8 %) than among the younger ones (36.5% for those between 0 and 5 months) and the older ones 24-35 months and 18-23 months (respectively 52.2% and 50.8%). There was not a significant overall gender discrimination 50.9% of boys are concerned against 50.2% of girls.

Table 39: Percentage of children under 3 years who have suffered from the disease (cough with runny nose, acute respiratory infections, fever, malaria confirmed by a health worker) within the two weeks before the survey based on some socio-demographic characteristics

| Socio-demographic characteristics | Children under 3 years | |
|-----------------------------------|------------------------|--|
| | | Children under 3 months who have suffered from fever |
| | | |

Cough
with
runny
nose

Fast or
difficult
breathing

Fever

Total
number

Percentage
who
suffered
from
malaria
confirmed
by a health
worker

Total
number

| | | | | | | |
|---|------|------|-------|------|-------|-----|
| <u>Age of children (in months)</u> | | | | | | |
| [0-5] | 44.5 | 19.4 | 36.5 | 422 | 25.0 | 156 |
| [6-11] | 70.3 | 28.3 | 61.2 | 219 | 29.9 | 134 |
| [12-17] | 65.4 | 26.6 | 59.8 | 214 | 41.4 | 128 |
| [18-23] | 62.0 | 27.2 | 50.8 | 437 | 32.0 | 222 |
| [24-35] | 61.2 | 26.9 | 52.2 | 854 | 32.7 | 446 |
| <u>Sex</u> | | | | | | |
| Male | 58.5 | 26.2 | 50.9 | 1077 | 30.5 | 548 |
| Female | 60.5 | 25.0 | 50.2 | 1070 | 33.8 | 539 |
| <u>Mother's education</u> | | | | | | |
| Formal education | 59.1 | 24.9 | 50.7 | 889 | 37.2 | 452 |
| No formal education | 59.9 | 26.3 | 50.5 | 1249 | 28.5 | 632 |
| <u>Mother's education level</u> | | | | | | |
| Incomplete primary | 60.4 | 23.7 | 53.8 | 561 | 39.3 | 303 |
| Completed primary | 68.6 | 21.6 | 43.1 | 51 | 22.7 | 22 |
| Incomplete secondary school | 53.7 | 26.3 | 44.4 | 270 | 33.3 | 120 |
| Completed secondary school | 80.0 | 20.0 | 80.0 | 5 | 25.0 | 4 |
| Incomplete higher education | 66.7 | 66.7 | 100.0 | 3 | 100.0 | 3 |
| Completed higher education | 0.0 | 0.0 | 0.0 | 1 | -- | -- |
| <u>Area</u> | | | | | | |
| Monitoring area | 60.2 | 23.6 | 49.7 | 872 | 38.9 | 434 |
| Intervention area | 59.0 | 27.0 | 51.1 | 1275 | 27.6 | 653 |
| Whole study area | 58.9 | 24.7 | 50.6 | 898 | 37.1 | 455 |
| <u>Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.</u> | | | | | | |

Additionally, during the survey, mothers whose children suffered from fever were asked if these children also suffered from malaria confirmed by a health agent within the two weeks before the interview. The results showed that 32.5% of the children under three years had also suffered from malaria within the two weeks preceding the interview. This proportion is 27.9% for the children in the intervention area against 39.4% for those in the monitoring area. The prevalence of malaria is higher among girls (33.8%) than boys (30.5%).

3.10.3. Diarrhea

Diarrheic diseases, due to their consequences (dehydration and malnutrition), represents, directly or indirectly, a main cause of death of young children in developing countries. During

the survey, mothers were asked if their children had diarrhea within the two weeks before the survey, in order to evaluate the prevalence of diarrheic diseases among children under three years. The results of the study show that 19.2% of the children in the whole study area had diarrhea within the two weeks preceding the survey. The proportion of the children who suffered from diarrhea was slightly higher in the intervention (19.6%) than in the monitoring area (18.6%).

3.10.4. Other diseases

Other questions were also asked, during the survey, on the presence of blood in the children's feces as well as on the diagnosis of intestinal worms within the two weeks preceding the survey. The results of the analysis show that 3.2% of the children under three years had blood in their feces. This proportion depends on the study area because in the intervention area, it is 3.1% against 3.4% in the monitoring area. Equally, 10.8% of the children of the sample had intestinal worms. This proportion varies from 8.5% in the monitoring area to 12.4% in the intervention area.

3.11. Access to water and sanitation

3.11.1. Access to water by households

The following table presents the different sources of water supply per area. As a matter of fact, regardless of study area, more than half of the population has access to drinking water. On the other hand, the analysis of the results in this table reveals that 8.5% of the population has access to another source of improved water in the intervention area against 30.5% in the monitoring area. The proportion of the population who does not have access to an improved source of water is respectively 13.2% in the intervention area and 8.3% in the monitoring area.

Table 40: Percentage of households who have access to drinking water, another improved source of water and an unimproved water source, by study

| Area | Water supply source | | |
|-------------------|-----------------------------|-----------------------------------|------------------|
| | Drinking water ^a | Other improved water ^b | unimproved water |
| Monitoring area | 61,2 | 30,5 | 8,3 |
| Intervention area | 78,4 | 8,5 | 13,2 |

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.

The following table presents the percentage of the population based on time spent to fetch water from the available source, by study area. Whether in the intervention or monitoring area, the highest percentage is observed among the population who spends less than 10 minutes to reach the water source (36.2% for the monitoring area and 54.3% for the intervention area), while the lowest percentage is among the population who spends between 41 and 50 minutes before having access to a water source (3.6% for the monitoring area and 0.7% for the intervention area). Only 6.5% of the population spends more than 51 minutes before having access to water in the intervention area against 13.4% in the monitoring area.

Table 41: Percentage of women based on time spent to fetch water, by study area

| Area | <10min | 11 – 20min | 21 – 30min | 31 – 40min | 41 – 50min | M o r e t h a n 51min |
|-------------------|--------|------------|------------|------------|------------|-----------------------------|
| Monitoring area | 36.2 | 26.0 | 14.8 | 5.9 | 3.6 | 13.4 |
| Intervention area | 54.3 | 26.1 | 10.7 | 1.7 | 0.7 | 6.5 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

The following table presents the different secondary sources of water supply, by study area. As a matter of fact, whether in the intervention or in the monitoring area, more than 50% of the population has access to a secondary unimproved source of water (82.9% in the monitoring area and 68.3% in the intervention area). On the other hand, the results in this table show that only 3.4% of the population has access to a secondary source of drinking water in the monitoring area against 21.5% in the intervention area. The proportion of the population who has access to another improved secondary source of water is respectively 10.2% in the intervention area and 13.6% in the monitoring area.

Table 42: Percentage of households who have access to a secondary source of water (drinking water, other improved or unimproved water) by study area

| Area | Drinking water | Other improved water | Unimproved water |
|-------------------|----------------|----------------------|------------------|
| Monitoring area | 3.4 | 13.6 | 82.9 |
| Intervention area | 21.5 | 10.2 | 68.3 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

A low proportion of the population treats the water regardless of the area. The analysis of the results in the following table reveals that, whatever the study area, more than 3/4 of the population do not use a water treatment method (78.0% in the monitoring area and 90.0% in the intervention area), that is, only 10.0% of the population treats their water in the intervention area against 22.0% in the monitoring area.

Table 43: Percentage of households who treat water, by study area

| Area | Yes | No |
|-------------------|------|------|
| Monitoring area | 22.0 | 78.0 |
| Intervention area | 10.0 | 90.0 |

Source: Baseline survey of the nutrition at the center program, CARE Benin/Togo, 2014

The following table shows the proportion of households based on the type of treatment used to have safe drinking water. The results from the table show that 0.8 % of the households boil water in order to make it safer for drinking in the monitoring area against 0.2% in the intervention. It is also noted that 10.8% of the households add some drops of bleach to the water in the monitoring area against 6.3% in the intervention area.

The proportion of households who filter, using a linen is 4.1% in the monitoring area. No one

uses this method in the intervention area.

Whatever the area, none of the households use a filter method or a solar disinfection method. In the monitoring area, 3.4% of the households let the water stand for a while then decant it afterwards, while only 1.3% of the households in the intervention area use this method.

Concerning water treatment with purification tablets, 12.2% of the population in the monitoring area use purification tablets against 5.8% in the intervention area.

Table 44: Proportion of households based on the type of water treatment they use to obtain safe drinking water, by study area

| Area | | Boil the water | Add bleach | Filter using linen | Use water filter | Solar disinfectio n | Let stand and decant afterward s | Purificat ion tablets |
|-------------------|-----|----------------------|---------------|--------------------------|------------------------|---------------------------|--|-----------------------------|
| Monitoring area | | | | | | | | |
| | Yes | 0.8 | 10.8 | 4.1 | 0.1 | 0.0 | 3.4 | 12.2 |
| | No | 99.2 | 89.2 | 95.9 | 99.9 | 100.0 | 96.6 | 87.8 |
| Intervention area | | | | | | | | |
| | Yes | 0.2 | 6.3 | 0.0 | 0.1 | 0.1 | 1.3 | 5.8 |
| | No | 99.8 | 93.7 | 100 | 99.9 | 99.9 | 98.7 | 94.2 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

The following table shows the percentage of population who have a water conservation system, by study area. As a matter of fact, regardless of study area, more than 95% of the population has a water conservation system (97.36% in the monitoring area and 98.35% in the intervention area).

Table 45: Percentage of the population who has a water conservation system, by study area

| Study area | Yes | No |
|-------------------|-------|------|
| Monitoring area | 97.36 | 2.64 |
| Intervention area | 98.35 | 1.65 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.11.2. Sanitation in the households

The women were questioned about the moments when they wash hands. The results from the data collected were that regardless of the study area, the quasi-totality (95.2% in the monitoring area and 93.7% in the intervention area) of the women always washed their hands before eating.

On the other hand, the number of those who wash their hands before cooking was lower in both areas (39.3% for the monitoring area and 63.4% for the intervention area). Almost the same tendencies are observed concerning hand washing before feeding their child (55.8% in the monitoring area and 65.6% in the intervention area), after using latrines (65.6% in the

monitoring area and 67.1% in the intervention area) and after changing babies diapers (32.9% in the monitoring area and 48.3% in the intervention area).

Table 46: Percentage of women who wash their hands at various occasions

| Area | | Before eating | Before cooking | Before feeding the child | After using latrines | After changing the babies diapers | Other |
|--------------------------|-----------|---------------|----------------|--------------------------|----------------------|-----------------------------------|-------|
| Monitoring area | | | | | | | |
| | Never | 1.4 | 25.0 | 17.4 | 5.3 | 27.2 | 99.0 |
| | Always | 95.2 | 39.3 | 55.8 | 65.6 | 32.9 | 0.5 |
| | Sometimes | 3.4 | 35.7 | 26.7 | 29.1 | 39.9 | 0.6 |
| Intervention area | | | | | | | |
| | Never | 1.6 | 13.3 | 16.1 | 12.9 | 26.1 | 96.2 |
| | Always | 93.7 | 63.4 | 65.6 | 67.1 | 48.3 | 2.9 |
| | Sometimes | 4.7 | 23.3 | 18.3 | 20.0 | 25.6 | 0.9 |

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.

Regardless of the study area, a small proportion of the households surveyed use or have detergents (12.5% in the monitoring area and 12.3% in the intervention area), local detergents (17.1% in the monitoring area and 19.2% in the intervention area) for hand washing.

Table 47: Percentage of women who have water and detergents for hand washing, by study area

| Area | Hand washing | Detergents | | | | Local detergents | | |
|--------------------------|--------------|------------|-----------------------|-------------|------|------------------|-------|------|
| | | Soap | Powder / liquid/ glue | Liquid soap | None | Ash | Mud | None |
| Monitoring area | | | | | | | | |
| Yes | 12.5 | 11.1 | 1.9 | 0.3 | 9.6 | 3.4 | 1.0 | 17.2 |
| No | 87.5 | 88.9 | 98.1 | 99.7 | 90.4 | 96.6 | 99.0 | 82.8 |
| Intervention area | | | | | | | | |
| Yes | 12.3 | 11.4 | 1.0 | 0.2 | 7.7 | 0.4 | 0.0 | 19.2 |
| No | 87.7 | 88.6 | 99.0 | 99.8 | 92.3 | 99.6 | 100.0 | 80.8 |

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.

The following table shows the type of toilets used in the study area. The analysis of the results of this table reveals that the proportion of the population who has access to modern toilets is low. Indeed, in the whole study area, the proportion of the households who have access to modern toilets is estimated at 22.2%. The proportion of households using rudimentary toilets (77.8%) is relatively very high. The analysis based on the area reveals more disparities.

In the intervention area, only three (3) households out of ten (10) have access to modern toilets. Similarly, in the monitoring area, the proportion of the households who have access to modern toilets (12.0%) is relatively very low compared to those who have access to rudimentary toilets (88.0%).

Table 48: Percentage of households based on the type of toilets used in the study area

| Area | Modern toilets | Rudimentary toilets |
|-------------------|----------------|---------------------|
| Monitoring area | 12.0 | 88.0 |
| Intervention area | 29.2 | 70.8 |
| Whole study area | 22.2 | 77.8 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

The modern toilets are less used by the population regardless of the area, but, it is more used by the population in the intervention area, 29.2% against 12.0% in the monitoring area.

Box 3: Description of the modalities for the modern and rudimentary toilets

The types of toilets habitually used by the households are grouped in two categories: modern and rudimentary toilets:

Modern toilets are grouped in the following way:

1. Water flushing towards a draining tube
2. Water flushing towards a septic tank
3. Dry toilets
4. Draining towards another place
5. Unknown draining place or exactly known
6. Dry ventilated toilets
7. Dry toilets with slabs
8. Composting toilets

The rudimentary toilets are grouped in the following way:

1. Open dry toilets/ without slab
2. Bucket
3. Suspended toilet/latrine
4. No toilet facilities/bush/field
5. The other types unclassified somewhere else

Source: *INSAE*, 2014

3.12. Women empowerment

The study of the gender reports enables us to highlight and understand the disparities

identified in the relations between men and women. During the survey, a certain number of questions were asked in order to help evaluate the level of the indicators related to the women's status. These questions were, among others, on the mobility of women, and their decision making power in the household and in the relations with the husband/spouse.

3.12.1. Mobility of the women

To study woman's mobility, during the survey, questions were asked in order to know if the woman could go to some places alone, if she may be accompanied, or not at all. These outings were: markets, search of water source, training sessions or adult classes, health centers and participation in community meetings, visits to close friends going outside the village, church or mosque.

The results in the following table show that generally regardless of the study area, for all the mobility decisions evoked nine women out of ten think that they go alone.

For other mobility reasons such as participation to trainings including adult classes, participation to community meetings and visiting friends, the proportion of women who claim not to be able to go alone at all is higher (respectively 4.6%, 3.1% and 2.3%). These proportions are respectively 4.3%, 3.8% and 3.9% for the monitoring area against respectively 4.8%, 2.7% and 1.3% for the intervention area.

Furthermore, some women think they can go to different places accompanied with somebody else, like going to the health centers (4.9% of women in the whole area: 8.0% for the monitoring area against 2.7% for the intervention area), for a training or adult classes (3.1% for the whole area: 5.6% for the monitoring area against 1.4% in the intervention area), community meetings (2.3% for the whole area: 3.5% for the monitoring area against 1.6% for the intervention area) and finally outside the village (2.8% in the whole area: 3.2% for the monitoring area against 2.5% for the intervention area).

Table 49: Percentage of women from 15-49 years who claim to be able to go alone to some places, accompanied to some places, or not to go at all, by study area

| Women mobility indicators | Monitoring area | Intervention area | The whole study area |
|--|-----------------|-------------------|----------------------|
| Can you go alone, accompanied to the market to buy or sell things, or can you not go at all? | | | |
| Not at all | 0.8 | 0.4 | 0.6 |
| If someone accompanies me | 1.1 | 0.6 | 0.8 |
| Alone | 98.1 | 99.0 | 98.6 |
| Can you go fetch water? | | | |
| Not at all | 0.5 | 0.1 | 0.2 |
| If someone accompanies me | 0.6 | 0.4 | 0.5 |
| Alone | 99.0 | 99.5 | 99.3 |
| Can you go for training, including adult classes? | | | |

| | | | |
|---|------|------|------|
| Not at all | 4.3 | 4.8 | 4.6 |
| If someone accompanies me | 5.6 | 1.4 | 3.1 |
| Alone | 90.1 | 93.8 | 92.3 |
| Can you go to the health center (when you are sick)? | | | |
| Not at all | 1.0 | 0.3 | 0.6 |
| If someone accompanies me | 8.0 | 2.7 | 4.9 |
| Alone | 90.9 | 97.0 | 94.5 |
| Can you go to a community meeting? | | | |
| Not at all | 3.8 | 2.7 | 3.1 |
| If someone accompanies me | 3.5 | 1.6 | 2.3 |
| Alone | 92.7 | 95.7 | 94.5 |
| Can you visit some friends near your house? | | | |
| Not at all | 3.9 | 1.3 | 2.3 |
| If someone accompanies me | 1.6 | 0.9 | 1.2 |
| Alone | 94.5 | 97.8 | 96.4 |
| Can you go outside the village? | | | |
| Not at all | 1.8 | 1.8 | 1.8 |
| If someone accompanies me | 3.2 | 2.5 | 2.8 |
| Alone | 94.9 | 95.6 | 95.4 |
| Can you go to church or mosque? | | | |
| Not at all | 5.3 | 0.2 | 2.2 |
| If someone accompanies me | 1.7 | 0.7 | 1.1 |
| Alone | 93.0 | 99.1 | 96.6 |
| <u>Source:</u> Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014. | | | |

3.12.2. Women’s participation in household decision making

The following table shows the proportions of women who habitually take part in the decisions listed, either alone or together with their husband/partner. It is noted that the proportion of decision making in relation to how money is made by the woman is used in the household is higher (66.2% in the whole study area: 64.4% for the monitoring area against 67.4% for the intervention area). It is, however worth underlining that only 47.2% of these women make this decision alone. They represent 56.5% in the monitoring area against 41.0% in the intervention area.

Concerning purchases of daily needs in the household, women’s participation is significant (56.2% in the whole area: 59.6% for the monitoring area and 53.9% for the intervention area). But this participation decreases further when the decision is solely taken by the woman. As a matter of fact, one woman out of three decides alone on the purchases of the daily needs of the household. In the monitoring area, this proportion is almost double of the proportion in the intervention area (respectively 45.7% and 25.1%).

On the other hand, for the important purchases in the household (huge expenses of the household), the decision is for the most part are made by the husband (69.9% for the whole area of study: 72.8% for the monitoring area against 67.8% for the intervention area).

The results of the survey also reveal that for the whole study area, 55.9% of the women are involved in the decision to engage in income generating activities. This proportion varies according to the study area because it was recorded that, 52.5% of the women in the monitoring area against 58.3% in the intervention area make such decisions. Very few women are involved in the decision making on how the money made by the husband will be used in the household (18.7% in the whole study area: 12.7% for the monitoring area against 22.9% in the intervention area). Concerning the sale of an important asset of the household, 29.9% of women in the whole area of study participate in this decision making. They represent 29.7% in the monitoring area against 30.1% in the intervention area.

Paradoxically, it is noted that even during decision making concerning the woman's health, she is not always present. Indeed, about two women out of ten are allowed to make decisions related to their own health, alone. This proportion is higher in the intervention area than in the monitoring area (29.5% against 23.9%).

Table 50: Percentage of women from 15-49 years who habitually make some decisions, alone or with their husband, by study area

| Indicators of participation in decision making in the household | Monitoring area | Intervention area | W h o l e study area |
|---|-----------------|-------------------|----------------------|
| In your household, who makes the decisions concerning your own health? | | | |
| You (the respondent) | 29.5 | 20.1 | 23.9 |
| Your husband | 59.9 | 57.9 | 58.7 |
| You and your husband | 7.0 | 18.1 | 13.6 |
| Other members | 3.6 | 3.9 | 3.8 |
| In your household, who habitually makes decisions concerning the health of your child | | | |
| You (the respondent) | 21.5 | 15.1 | 17.7 |
| Your husband | 63.5 | 54.1 | 57.9 |
| You and your husband | 11.6 | 26.6 | 20.5 |
| Other members | 3.4 | 4.2 | 3.9 |
| In your household, who habitually makes decisions concerning important purchases in the household | | | |
| You (the respondent) | 7.5 | 7.7 | 7.6 |
| Your husband | 72.8 | 67.8 | 69.9 |
| You and your husband | 17.1 | 22.2 | 20.2 |
| Other members | 2.6 | 2.2 | 2.4 |
| In your household, who habitually makes decisions concerning purchases of the daily needs | | | |

| | | | |
|---|------|------|------|
| You (the respondent) | 45.7 | 25.1 | 33.5 |
| Your husband | 37.9 | 44.0 | 41.5 |
| You and your husband | 13.9 | 28.8 | 22.7 |
| Other members | 2.5 | 2.1 | 2.3 |
| In your household, who generally decides when you visit family, extended family or friends | | | |
| You (the respondent) | 13.9 | 10.2 | 11.7 |
| Your husband | 54.3 | 53.8 | 54.0 |
| You and your husband | 28.8 | 34.0 | 31.9 |
| Other members | 3.0 | 2.1 | 2.4 |
| In your household, who generally decides when your household will visit family/extended family | | | |
| You (the respondent) | 10.8 | 8.5 | 9.4 |
| Your husband | 55.8 | 53.2 | 54.3 |
| You and your husband | 30.2 | 36.3 | 33.8 |
| Other members | 3.2 | 2.0 | 2.5 |
| In your household, who generally decides how the money you earn is used | | | |
| You (the respondent) | 56.5 | 41.0 | 47.2 |
| Your husband | 34.4 | 31.0 | 32.4 |
| You and your husband | 7.9 | 26.4 | 18.9 |
| Other members | 1.2 | 1.7 | 1.4 |
| In your household, who generally decides how to use the money earned by your husband | | | |
| You (the respondent) | 5.6 | 4.2 | 4.8 |
| Your husband | 86.2 | 74.9 | 79.5 |
| You and your husband | 7.0 | 18.7 | 14.0 |
| Other members | 1.2 | 2.2 | 1.8 |
| In your household, who generally decides when your family sells an important asset (like a cow) | | | |
| You (the respondent) | 10.2 | 5.9 | 7.7 |
| Your husband | 67.1 | 67.2 | 67.1 |
| You and your husband | 19.4 | 24.2 | 22.2 |
| Other members | 3.2 | 2.8 | 2.9 |
| In your household, who generally decides when your family sells a small asset (like chicken) | | | |
| You (the respondent) | 34.3 | 21.1 | 26.5 |
| Your husband | 45.9 | 48.2 | 47.3 |

| | | | |
|---|------|------|------|
| You and your husband | 16.6 | 27.9 | 23.3 |
| Other members | 3.1 | 2.7 | 2.9 |
| In your household, who generally decides if you can work to earn money | | | |
| You (the respondent) | 36.9 | 26.5 | 30.7 |
| Your husband | 46.0 | 40.0 | 42.5 |
| You and your husband | 15.6 | 31.9 | 25.3 |
| Other members | 1.5 | 1.6 | 1.6 |
| Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014. | | | |

3.12.3. Decision making concerning some relations between the husband/spouse and child feeding

From the study of the following table, it results that women, more than any other person, are likely to make decisions concerning their children’s feeding. As a matter of fact, for the whole study area, more than eight women out of ten habitually participate in decision making in relation to what to give the babies in addition to breast milk during the first three days of life. The same situation applies to the ideal moment to introduce soft or solid foods in the child’s feeding for the first time. The proportions are almost the same in both areas. In the intervention area, 79.3% of the women participate in decision making concerning what to give the baby in addition to breast milk during the first three days of life against 80.1% in the monitoring area. 82.1% of the women in the intervention area make decisions concerning the moment to introduce soft or solid foods for the first time in the child’s feeding against 80.4% in the monitoring area.

It is important to specifically note that concerning what to feed the baby in addition to breast milk during the first three days of life, 64.9% of the women make the decision alone (62.2% in the intervention area against 68.9% in the monitoring area). Concerning the ideal moment to introduce a soft or solid food for the first time, the decision is solely made by 68.4% of the women (66.0% in the intervention area against 72.0% in the monitoring area).

Women participate less in decisions related to the ideal moment to have sexual relations with their husband. As a matter of fact, 3.1% of the women in the whole study area take this decision alone against 27.7% who take it together with the husband or the partner. The proportion of women who take this decision alone is 4.1% in the monitoring area against 2.4% in the intervention area. Moreover, 27.2% of the women in the monitoring area against 28.1% in the intervention area take this decision conjointly with the husband or the partner.

Table 51: Percentage of women from 15-49 years who habitually make some decisions alone or with their husband, by study area

| Indicators of decision making on some relations with husband | Monitoring area | Intervention area | W h o l e study area |
|--|-----------------|-------------------|----------------------|
| In your household, who decides when to have sexual relations with your husband | | | |
| You (the respondent) | 4.1 | 2.4 | 3.1 |
| Your husband | 71.1 | 70.2 | 70.6 |

| | | | |
|--|------|------|------|
| You and your husband | 23.1 | 25.7 | 24.6 |
| Other members | 1.6 | 1.7 | 1.6 |
| In your household, who generally decides if you should use family planning method | | | |
| You (the respondent) | 11.2 | 13.7 | 12.7 |
| Your husband | 40.1 | 44.6 | 42.7 |
| You and your husband | 41.8 | 33.4 | 36.9 |
| Other members | 1.3 | 1.1 | 1.2 |
| Don't know | 5.6 | 7.2 | 6.5 |
| In your household, who habitually decides to feed the baby something else in addition to breast milk during the first three days of life | | | |
| You (the respondent) | 68.9 | 62.2 | 64.9 |
| Your husband | 17.3 | 14.8 | 15.8 |
| You and your husband | 11.2 | 17.2 | 14.7 |
| Other members | 2.6 | 5.9 | 4.6 |
| In your household, who generally decides when to introduce soft or solid foods into the baby's feeding for the first time? | | | |
| You (the respondent) | 72.0 | 66.0 | 68.4 |
| Your husband | 16.6 | 12.9 | 14.4 |
| You and your husband | 8.4 | 16.1 | 13.0 |
| Other members | 3.0 | 5.0 | 4.2 |
| If there is not enough food in the household, who decides the way the food will be shared among the members of the household? | | | |
| You (the respondent) | 61.7 | 46.3 | 52.5 |
| Your husband | 23.0 | 20.4 | 21.4 |
| You and your husband | 13.2 | 31.2 | 23.9 |
| Other members | 2.2 | 2.1 | 2.1 |
| <u>Source:</u> Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014. | | | |

3.13. Community and social capital

This section outlines the importance of the community in the life of individuals. Solidarity between individuals has never been absent especially in difficult moments. The study therefore wanted to understand the social capital on which women can count during difficult periods.

Less than 50% of the women surveyed think the community will support them if they are going through difficulties in feeding their babies (both in the monitoring area and in the intervention area). The support of the community is more important, according to women surveyed, in case they have difficulties offering enough safe foods to the children. Community

solidarity is stronger in the intervention area than in the monitoring area: 58.4% in the monitoring area against 62.7% in the intervention area.

74.9% of the women surveyed in the intervention area against 63.4% in the monitoring area think that they can count on people in the community to take care of their children/ household if they need to go to hospital.

61.5% of the women in the intervention area against 51.4% in the monitoring area agree that they can count on the people in the community to take care of their children/household if they must go out to work.

Generally, the women surveyed in the intervention area think that community solidarity is stronger compared to women in the monitoring area.

Table 52: Percentage of women based on the type of support she can get from her community

| | | Study area | |
|--|----------------------------|-----------------|-------------------|
| | | Monitoring area | Intervention area |
| You can count on the help of the people in your community if you are facing difficulties | Totally disagree | 20.5 | 21.3 |
| | Disagree | 29.6 | 30.3 |
| You can count on the help of the people in your community if you don't have enough safe food for your child | Neither agree nor disagree | 4.9 | 4.4 |
| | Agree | 33.5 | 38.2 |
| | Totally agree | 11.5 | 5.8 |
| You can count on the help of the people in your community if you don't have enough safe food for your child | Totally disagree | 15.4 | 6.0 |
| | Disagree | 19.9 | 21.3 |
| You can count on the people in your community to take care of your children/household in case you need to go to hospital | Neither agree nor disagree | 6.3 | 10.0 |
| | Agree | 45.8 | 54.0 |
| | Totally agree | 12.6 | 8.7 |
| You can count on the people in your community to take care of your children/household in case you need to go to hospital | Totally disagree | 13.7 | 5.2 |
| | Disagree | 15.6 | 16.2 |
| You can count on the people of your community to help you in case a person in your family is violent or difficult | Neither agree nor disagree | 7.2 | 3.7 |
| | Agree | 50.6 | 62.8 |
| | Totally agree | 12.9 | 12.1 |
| You can count on the people of your community to help you in case a person in your family is violent or difficult | Totally disagree | 11.2 | 4.1 |
| | Disagree | 15.6 | 11.4 |
| You can count on the people of your community to help you in case a person in your family is violent or difficult | Neither agree nor disagree | 9.6 | 8.4 |
| | Agree | 46.8 | 60.7 |
| | Totally agree | 16.7 | 15.4 |

| | | | |
|---|----------------------------|------|------|
| You can count on the people in your community to help take care of your children/household if you should go to work | Totally disagree | 11.1 | 4.8 |
| | Disagree | 15.2 | 16.8 |
| | Neither agree nor disagree | 5.5 | 3.1 |
| | Agree | 51.4 | 61.5 |
| | Totally agree | 16.8 | 13.7 |
| Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014. | | | |

To ensure their autonomy, women are involved in income generating activities. For this reason, they are members of self-help groups or associations in various areas of life. Generally, women are not active in community groups. In the intervention area, women are more present in economic development groups (5.5%) than in the other groups where their proportion is about 2%.

Table 53: Percentage of women according to the presence of active community groups in their village

| Existence of an active group in the village and membership in: | | Area | |
|--|---|-----------------|-------------------|
| | | Monitoring area | Intervention area |
| Agriculture | Yes, there is a group but I am not a member | 9.8 | 8.2 |
| | No, there is no group or I am not aware if there is | 85.3 | 90.6 |
| | Yes, there is a group and I am an active member | 4.9 | 1.2 |
| WASH | Yes, there is a group but I am not a member | 13.2 | 5.5 |
| | No, there is no group or I am not aware if there is | 83.4 | 94.3 |
| | Yes, there is a group and I am an active member | 3.3 | 0.2 |
| Nutrition | Yes, there is a group but I am not a member | 9.2 | 7.5 |
| | No, there is no group or I am not aware if there is | 85.7 | 90.5 |
| | Yes, there is a group and I am an active member | 5.2 | 2.0 |
| Maternal health | Yes, there is a group but I am not a member | 6.8 | 8.5 |
| | No, there is no group or I am not aware if there is | 89.0 | 90.1 |
| | Yes, there is a group and I am an active member | 4.2 | 1.3 |

| | | | |
|-----------------------------|---|------|------|
| Child's health | Yes, there is a group but I am not a member | 6.8 | 8.7 |
| | No, there is no group or I am not aware if there is | 89.2 | 90.1 |
| | Yes. there is a group and I am an active member | 4.0 | 1,3 |
| Education | Yes. there is a group but I am not a member | 5.7 | 5,3 |
| | No. there is no group or I am not aware if there is | 92.0 | 93,8 |
| | Yes. there is a group and I am an active member | 2.3 | 0,9 |
| E c o n o m i c development | Yes. there is a group but I am not a member | 7.7 | 7,4 |
| | No. there is no group or I am not aware if there is | 88.6 | 87,1 |
| | Yes. there is a group and I am an active member | 3.7 | 5,5 |
| W o m e n ' s empowerment | Yes. there is a group but I am not a member | 4.2 | 4,1 |
| | No. there is no group or I am not aware if there is | 92.6 | 95,1 |
| | Yes. there is a group and I am an active member | 3.2 | 0,8 |
| Climate change | Yes. there is a group but I am not a member | 0.9 | 2,0 |
| | No. there is no group or I am not aware if there is | 96.3 | 97,8 |
| | Yes. there is a group and I am an active member | 2.8 | 0,2 |
| Other | Yes. there is a group but I am not a member | 1.4 | 1,9 |
| | No. there is no group or I am not aware if there is | 95.8 | 97,9 |
| | Yes. there is a group and I am an active member | 2.8 | 0,2 |

Source: Baseline survey of "Nutrition at the Center", CARE Benin/Togo, 2014.

In the monitoring area, women are more active in nutrition groups (5.2%), agriculture (4.9%), maternal health (4.2%) and child health (4.0%). Specifically, 3.2% of women surveyed in the monitoring area are active against 0.2% in the intervention area.

It should be noted that, according to the women surveyed, this low participation of women in community groups is due to the nonexistent community groups in the intervention area. In

each area of life, about 9 women out of 10 think that there is no community group in which they can become members.

3.14. Gender attitudes and beliefs: tolerance towards domestic violence

The improvement of women’s situation and the search of gender equity are henceforth an integrative part of human rights. The incorporation of gender dimension is from now on necessary to ensure the success of any health and population program. To assess the level of tolerance vis-à-vis domestic violence, women were asked if they think if it is justified that for certain reasons, a man can beat his wife. The results for all the women from 15-49 years are presented in the following table.

Table 54: Percentage of women from 15-49 years who think that it is justified that, for some reason, a husband can beat his wife, for a particular reason

| It is justified that a husband can beat his wife when she: | Monitoring area | Intervention area | Whole study area |
|--|-----------------|-------------------|------------------|
| Goes out without informing him | 20.6 | 29.3 | 25.7 |
| Neglects the children | 21.7 | 30.8 | 27.1 |
| Verbally fights with him | 15.8 | 24.8 | 21.2 |
| Refuses to have sexual relations with him | 12.1 | 12.3 | 12.2 |
| Does not cook well | 13.0 | 16.6 | 15.1 |
| Total number | 872 | 1275 | 2147 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

Generally, a relatively significant proportion of women surveyed still tolerate domestic violence. Indeed, in the intervention area, the proportion of women who tolerate domestic violence varies from 12.3% to 30.8% while in the monitoring area, this proportion varies between 12.1% and 21.7%.

The results based on the different reasons show that in case the woman neglects the children or goes out without informing her husband, an important proportion think it is justified that a man beats his wife: 30.8% in the intervention area and 21.7% in the monitoring area in the first case and 29.3% in the intervention area against 20.6% in the monitoring area in the second case.

One woman out of four in the intervention area (24.8%) against about one out of five in the monitoring area (15.8%) think that it is justified that a husband beats his wife if she verbally fights with him. Concerning the fact that women do not cook well, 16.6% of the women in the intervention area tolerate domestic violence. This proportion is 13.0% in the monitoring area. 12.3% of the women in the intervention area against 12.1% in the monitoring area think that it is justified that a woman be beaten if she refuses to have sex with her husband.

3.15. Participation in community groups or government social security programs

From the results in the following table, it can be noted that most of the women in the study area ignore the existence of active community groups or government social security programs in their village, and many of them do not benefit from any direct support or assistance.

3.15.1. Existence of active programs or community groups in the village

The results in the following table show that 80% of the women in the whole study area declare that there are no community programs or they are not aware of the existence of any such programs in their village, in the areas mentioned earlier.

For example, in maternal health, the proportion of women who declared that there are no such programs in their village is estimated at 89.3% in the intervention area and 87.8% in the monitoring area.

It is also noted that in the villages, few (less than 5%) women in the study area who are aware of the existence of these programs are active community group members. In the intervention area, 1.1% of the women are active members of community programs in agriculture; 0.5% in WASH programs; 2.2% in nutrition groups; 2.0% in maternal health programs.

Table 55: Percentage of women based on the presence and participation in community groups or programs

| | | Monitoring area | Intervention area | Whole study area |
|-------------|--|-----------------|-------------------|------------------|
| Agriculture | Yes there is a program but I am not a member | 9.90 | 9.20 | 9.50 |
| | No, there is not a program or I am not aware if there is | 86.50 | 89.30 | 88.20 |
| | Yes there is a program and I am an active member | 3.20 | 1.10 | 2.00 |
| | Missing | 0.50 | 0.40 | 0.40 |
| | Total number of women | 872 | 1275 | 2147 |
| WASH | Yes there is a program but I am not a member | 14.80 | 4.00 | 8.40 |
| | No, there is not a program or I am not aware if there is | 82.50 | 94.90 | 89.80 |
| | Yes there is a program and I am an active member | 2.60 | 0.50 | 1.40 |
| | Missing | 0.10 | 0.50 | 0.40 |
| | Total number of women | 872 | 1275 | 2147 |
| Nutrition | Yes there is a program but I am not a member | 8.10 | 7.10 | 7.50 |
| | No, there is not a program or I am not aware if there is | 88.20 | 90.40 | 89.50 |

| | | | |
|--|------|------|------|
| Yes there is a program and I am an active member | 3.60 | 2.20 | 2.70 |
| Missing | 0.10 | 0.30 | 0.20 |
| Total number of women | 872 | 1275 | 2147 |

| | | | | |
|-----------------------------|--|-------|-------|-------|
| Maternal health | Yes there is a program but I am not a member | 8.60 | 8.20 | 8.30 |
| | No, there is not a program or I am not aware if there is | 87.80 | 89.30 | 88.70 |
| | Yes there is a program and I am an active member | 3.40 | 2.00 | 2.60 |
| | Missing | 0.10 | 0.50 | 0.30 |
| | Total number of women | 872 | 1275 | 2147 |
| Child's health | Yes there is a program but I am not a member | 8.50 | 8.50 | 8.50 |
| | No, there is not a program or I am not aware if there is | 88.30 | 89.20 | 88.80 |
| | Yes there is a program and I am an active member | 3.10 | 1.80 | 2.30 |
| | Missing | 0.10 | 0.50 | 0.30 |
| | Total number of women | 872 | 1275 | 2147 |
| Education | Yes there is a program but I am not a member | 8.50 | 6.70 | 7.40 |
| | No, there is not a program or I am not aware if there is | 89.80 | 91.80 | 91.00 |
| | Yes there is a program and I am an active member | 1.50 | 0.90 | 1.20 |
| | Missing | 0.20 | 0.60 | 0.50 |
| | Total number of women | 872 | 1275 | 2147 |
| E c o n o m i c development | Yes there is a program but I am not a member | 7.20 | 8.50 | 8.00 |
| | No, there is not a program or I am not aware if there is | 90.40 | 86.90 | 88.30 |
| | Yes there is a program and I am an active member | 2.30 | 4.00 | 3.30 |
| | Missing | 0.10 | 0.50 | 0.40 |
| | Total number of women | 872 | 1275 | 2147 |
| W o m e n empowerment | Yes there is a program but I am not a member | 2.50 | 6.90 | 5.10 |
| | No, there is not a program or I am not aware if there is | 94.80 | 91.00 | 92.50 |
| | Yes there is a program and I am an active member | 2.50 | 1.70 | 2.00 |
| | Missing | 0.10 | 0.40 | 0.30 |
| | Total number of women | 872 | 1275 | 2147 |

| | | | | |
|----------------|--|-------|-------|-------|
| Climate change | Yes there is a program but I am not a member | 0.50 | 2.40 | 1.60 |
| | No, there is not a program or I am not aware if there is | 97.00 | 96.90 | 97.00 |
| | Yes there is a program and I am an active member | 2.40 | 0.20 | 1.10 |
| | Missing | 0.10 | 0.50 | 0.30 |
| | Total number of women | 872 | 1275 | 2147 |
| Other | Yes there is a program but I am not a member | 0.50 | 2.10 | 1.40 |
| | No, there is not a program or I am not aware if there is | 95.00 | 93.00 | 93.80 |
| | Yes there is a program and I am an active member | 2.40 | 0.00 | 1.00 |
| | Missing | 2.20 | 4.90 | 3.80 |
| | Total number of women | 872 | 1275 | 2147 |

Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014.

3.15.2. Existence of government social security programs in the village

The results in the following table reveal that a minority of women are aware of the existence of government programs on social safety net in the intervention area as well as in the monitoring area. Very few of the women who know the existence of such programs are members. Indeed, in the intervention area, there are women in the government programs for social security in agriculture (0.6%), in WASH (0.5%), in economic development (1.4%) and in maternal health (1.4%). The figures obtained in the monitoring area are also low for active members who are women in these programs. However, the results obtained in the monitoring area are less critical.

Table 56: Percentage of women based on social security participation in the village

| | | Monitoring area | Intervention area | W h o l e study area |
|-------------|--|-----------------|-------------------|----------------------|
| Agriculture | Yes there is a program but I am not a member | 7.70 | 4,70 | 5,90 |
| | No. there is not a program or I am not aware if there is | 90.70 | 94,10 | 92,70 |
| | Yes there is a program and I am an active member | 1.10 | 0,60 | 0,80 |
| | Missing | 0.50 | 0,50 | 0,50 |
| | Total number of women | 872 | 1275 | 2147 |
| WASH | Yes there is a program but I am not a member | 9.90 | 2,00 | 5,20 |
| | No. there is not a program or I am not aware if there is | 89.20 | 97,00 | 93,90 |

| | | | |
|--|------|------|------|
| Yes there is a program and I am an active member | 0.60 | 0,50 | 0,50 |
| Missing | 0.30 | 0,50 | 0,50 |
| Total number of women | 872 | 1275 | 2147 |

| | | | | |
|----------------------|--|-------|-------|-------|
| Nutrition | Yes there is a program but I am not a member | 3.00 | 3,00 | 3,00 |
| | No. there is not a program or I am not aware if there is | 96.00 | 95,10 | 95,50 |
| | Yes there is a program and I am an active member | 0.60 | 1,50 | 1,10 |
| | Missing | 0.50 | 0,40 | 0,40 |
| | Total number of women | 872 | 1275 | 2147 |
| Maternal health | Yes there is a program but I am not a member | 7.20 | 3,10 | 4,80 |
| | No. there is not a program or I am not aware if there is | 91.90 | 95,10 | 93,80 |
| | Yes there is a program and I am an active member | 0.60 | 1,40 | 1,10 |
| | Missing | 0.30 | 0,40 | 0,40 |
| | Total number of women | 872 | 1275 | 2147 |
| Child's health | Yes there is a program but I am not a member | 7.00 | 3,10 | 4,70 |
| | No. there is not a program or I am not aware if there is | 91.70 | 95,00 | 93,70 |
| | Yes there is a program and I am an active member | 0.90 | 1,50 | 1,30 |
| | Missing | 0.30 | 0,40 | 0,40 |
| | Total number of women | 872 | 1275 | 2147 |
| Education | Yes there is a program but I am not a member | 10.00 | 2,70 | 5,70 |
| | No. there is not a program or I am not aware if there is | 88.30 | 96,00 | 92,90 |
| | Yes there is a program and I am an active member | 1.10 | 0,70 | 0,90 |
| | Missing | 0.60 | 0,50 | 0,60 |
| | Total number of women | 872 | 1275 | 2147 |
| Economic development | Yes there is a program but I am not a member | 6.40 | 4,60 | 5,40 |
| | No. there is not a program or I am not aware if there is | 92.50 | 93,50 | 93,10 |
| | Yes there is a program and I am an active member | 0.70 | 1,40 | 1,10 |
| | Missing | 0.30 | 0,50 | 0,40 |
| | Total number of women | 872 | 1275 | 2147 |

| | | | | |
|--|--|-------|-------|-------|
| W o m e n empowermen t | Yes there is a program but I am not a member | 2.20 | 3,30 | 2,80 |
| | No. there is not a program or I am not aware if there is | 96.90 | 95,70 | 96,20 |
| | Yes there is a program and I am an active member | 0.60 | 0,50 | 0,60 |
| | Missing | 0.30 | 0,50 | 0,40 |
| | Total number of women | 872 | 1275 | 2147 |
| C l i m a t e change | Yes there is a program but I am not a member | 0.30 | 1,50 | 1,00 |
| | No. there is not a program or I am not aware if there is | 98.60 | 97,70 | 98,10 |
| | Yes there is a program and I am an active member | 0.70 | 0,40 | 0,50 |
| | Missing | 0.30 | 0,40 | 0,40 |
| | Total number of women | 872 | 1275 | 2147 |
| Other | Yes there is a program but I am not a member | 0.30 | 1,20 | 0,80 |
| | No. there is not a program or I am not aware if there is | 96.60 | 93,30 | 94,60 |
| | Yes there is a program and I am an active member | 0.70 | 0,40 | 0,50 |
| | Missing | 2.40 | 5,20 | 4,10 |
| | Total number of women | 872 | 1275 | 2147 |
| <u>Source:</u> Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 20144. | | | | |

3.15.3. Direct aid or assistance to women or members of their households

The analysis of the results of the following table shows that women in general, did not benefit from different direct aid/assistance. The proportion of women beneficiaries of direct assistance is lower in the intervention area (about less than 4.0%) comparatively to the monitoring area. In the intervention area: 1.6% of women receive food in exchange for work as direct support or help; 3.9% of the women are beneficiaries of school feeding programs; 1.4% of women who receive seeds in the form of direct support; 0.9% benefited plots or lands for households consumption.

Table 57: Percentage of women who were given direct support by study area

| | | Monitoring area | Intervention area | Whole study area |
|-------------------------|---------|-----------------|-------------------|------------------|
| F o o d exchange for | Yes | 13.40 | 1.60 | 6.40 |
| | No | 86.40 | 98.10 | 93.30 |
| work | Missing | 0.20 | 0.20 | 0.20 |
| Total | | 872 | 1275 | 2147 |

| | | | | |
|--|---------|-------|-------|-------|
| School feeding program | Yes | 2.30 | 3.90 | 3.30 |
| | No | 97.50 | 95.80 | 96.50 |
| | Missing | 0.20 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Plot or land for household consumption | Yes | 4.90 | 0.90 | 2.50 |
| | No | 94.80 | 99.00 | 97.30 |
| | Missing | 0.20 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Seeds | Yes | 5.80 | 1.40 | 3.20 |
| | No | 93.80 | 98.40 | 96.60 |
| | Missing | 0.30 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Agricultural machines | Yes | 0.30 | 0.20 | 0.20 |
| | No | 99.30 | 99.70 | 99.50 |
| | Missing | 0.30 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Cattle | Yes | 0.30 | 0.30 | 0.30 |
| | No | 99.40 | 99.50 | 99.50 |
| | Missing | 0.20 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Poultry | Yes | 1.30 | 1.10 | 1.20 |
| | No | 98.50 | 98.70 | 98.60 |
| | Missing | 0.20 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Fishery products | Yes | 0.90 | 0.70 | 0.80 |
| | No | 98.90 | 99.10 | 99.00 |
| | Missing | 0.20 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Car | Yes | 0.00 | 0.10 | 0.00 |
| | No | 99.80 | 99.80 | 99.80 |
| | Missing | 0.20 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Sewing-machine | Yes | 0.10 | 0.20 | 0.20 |
| | No | 99.50 | 99.60 | 99.60 |
| | Missing | 0.30 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Latrines | Yes | 0.50 | 0.50 | 0.50 |
| | No | 99.30 | 99.40 | 99.30 |
| | Missing | 0.20 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Water pump | Yes | 0.80 | 0.70 | 0.70 |
| | No | 99.00 | 99.10 | 99.00 |

| | | | | |
|--------------------|---------|------|------|------|
| | Missing | 0.20 | 0.20 | 0.20 |
| | Total | 872 | 1275 | 2147 |
| Agricultural tools | Yes | 1.30 | 0.60 | 0.90 |

| | No | 98.50 | 99.00 | 98.80 |
|---------|------|-------|-------|-------|
| Missing | 0.20 | 0.40 | 0.30 | |
| Total | 872 | 1275 | 2147 | |

| | | | | | |
|---|---------|-------|-------|-------|-------|
| | | Yes | 0.30 | 0.20 | 0.20 |
| | | No | 84.90 | 78.30 | 81.00 |
| Other | Missing | 14.80 | 21.60 | 18.80 | |
| | | Total | 872 | 1275 | 2147 |
| Source: Baseline survey of “Nutrition at the Center”, CARE Benin/Togo, 2014 | | | | | |

4. CONCLUSIONS AND IMPLICATIONS IN TERMS OF POLICIES

The baseline study initiated by CARE Benin/Togo for the initiative “Nutrition at the Centre” helps in understanding the baseline situation for monitoring-evaluation indicators of this program in the intervention areas. A general study was conducted on women empowerment, food and nutritional security as well as on the survival strategy to shocks that affect households in the different areas. This study also helps to better appreciate the aspects related to mothers and their children under three years ,regarding feeding, nutrition and health as well as households’ water and hygiene practices.

The results of this study reveal that difficulties related to the achievement of the MDGs on children’s health and to populations’ living conditions and to the environmental protection. Indeed, many people don’t have access to modern toilets and drinking water in the whole study area.

Food insecurity continues to be a challenge to which a significant proportion of the populations of the areas of intervention still face in Benin

As a whole, the results of this baseline study clearly show that the choice of CARE Benin/ Togo, with regards to the impact groups for Nutrition at the Centre initiative, seems judicious. These impact groups face many difficulties related to mother and child’s food and nutritional security and health. Thus, these results induce several efficient government actions with the support of national and international NGOs including CARE Bénin/Togo.

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6. NOTES

Appendix 1: Distribution of children aged 6-23 months

Table 58: Distribution of children ages 6-23 months per study area

| | 6-8 months | 9 - 1 1 months | 12-23 months | Effective children ages 6-23 months |
|----------------------|------------|-------------------|--------------|--|
| Commune | | | | |
| Bonou | 33 | 26 | 169 | 228 |
| Dangbo | 24 | 29 | 221 | 274 |
| Athiémé | 30 | 18 | 149 | 197 |
| Grand Popo | 32 | 27 | 112 | 171 |
| Study Area | | | | |
| Control Area | 62 | 45 | 261 | 368 |
| Intervention Area | 57 | 55 | 390 | 502 |
| Entire Study Area | 119 | 100 | 651 | 870 |

Source: Baseline Survey of the nutrition program at the center, CARE Benin / Togo, 2014

Appendix 2: Nutrition at the Centre, definitions and thresholds for test and measurement

1. Definition of anthropometric measurements (weight for height, HAZ and WAZ)

a) WHZ: measures Z-scores weight-for-height bodies. It is normally used to indicate the current nutritional status. Low WHZ identifies "waste" in children, an indicator of moderate to severe malnutrition resulting from actual weight loss or failure to gain weight. WHZ is also useful for ages that are difficult to determine.

b) HAZ: height-for-age Z-score measures height relative to age. ZAT low compared to a child of the same sex and age in the reference population is called "stunting"1.

c) WAZ: weight-for-age Z-scores measures body weight in relation to age. It is commonly used to control the growth and evaluation of the amplitude variation of malnutrition in time. A low WAZ compared to a child of the same sex and age in the reference population is called "underweight"1.

2. Z-score

We used the software ANTHRO WHO to calculate Z-score for each individual. Calculated Z-scores express anthropometric value as a number of standard deviations (SD) below or above the reference median (see below2 formula).

3. Break Points

To evaluate the anthropometric characteristics of the population, we need to define the cut-off points for the reported Z-scores. In 2006, the standard WHO Z-score cut-off points provided Z-score $<-2SD$ and was used to classify low weight-for-height (P / Z), low height-for-age (H / A), and low weight-for-age (W / A) and moderate to severe under nutrition. Similarly, the point $<-3SD$ cut is used to classify severe or chronic malnutrition.

| Status | Breaking Point |
|-------------|----------------|
| Decline | $<-2sd$ WHZ |
| Stunting | $<-2sd$ HAZ |
| Underweight | $<-2sd$ WAZ |

4. Hemoglobin

According to WHO, the cut-off value of anemia in pregnant women is 110 g / l (11.0 g / dl). In non-pregnant women over 15 years, the cut-off value of 120 g / l (12.0 g / dl).

| | Average | Moderate | Severe |
|--------------|---------|----------|---------|
| Pregnant | 10-10.9 | 7-9.9 | < 7.0 |
| Not Pregnant | 11-11.9 | 8-10.9 | < 8.0 |

*The level of "light" anemia is still considered to be a serious condition as the iron deficiency is already well advanced when anemia is detected. A deficiency has functional consequences, even when the anemia is not clinically apparent (WHO 2000).

There is no cut WHO value for anemia in children under 6 months of age. For children between 6 and 59 months, children with hemoglobin levels below 110g/l or (11.0 g/dl) are considered anemic. This value is based on data from children and therefore may not accurately reflect the appropriate hemoglobin levels in infants. Threshold values of $<105g/l$ or (10.5g/dl) at 4 and 6 months of age were used in a study of iron filled breastfed infants.

5. Body Mass Index (BMI)

BMI is a number which is calculated by weight-for-height, and is often used to classify someone who is underweight, normal and overweight.

The BMI is calculated by dividing the body weight (in kilograms) by the height (in meters) squared (BMI = weight/height²)

To be underweight is defined as a BMI of <18.50 ; A normal BMI is defined as 18.50 to 24.99.

