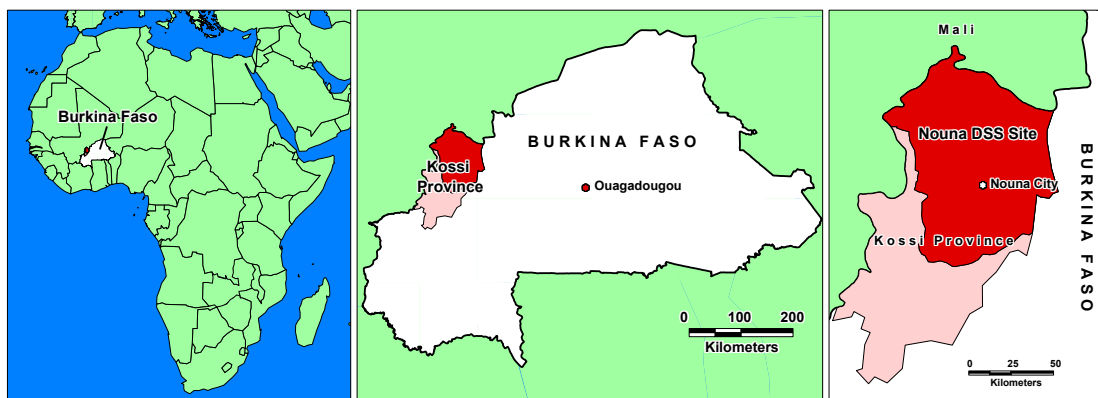


NOUNA DEMOGRAPHIC SURVEILLANCE SYSTEM

BURKINA FASO

NOUNA HEALTH RESEARCH CENTRE



LOCATION OF NOUNA DSS SITE, BURKINA FASO: 55,000 under surveillance.

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1. NOUNA DSS SITE DESCRIPTION

1.1 Physical Geography of the Nouna DSS Area

The Nouna Health Research Center (CRSN) is located in Nouna Health District in the north-west of Burkina Faso, at a distance of 300 km from the capital Ouagadougou. The Nouna area is a dry orchard savanna, populated almost exclusively by subsistence farmers of different ethnic groups. The area has a sub-sahelian climate with a mean annual rainfall of 796 mm (range 483-1083) over the past five decades.

1.2 Population Characteristics of the Nouna DSS Area

The Nouna research Center covered a population of about 55,000 individuals settled on 1,775 scare. The density of the population is about 30.98 individuals per scare. This population is rural and semi-urban (essentially living in Nouna). The main ethnic groups are the Marka the Bwaba the Samo the Mossi and the Foulani. Dioula language is widely and commonly spoken permitting communication between all these different ethnic groups. People are mostly farmers or cattle keepers having a lower economic status.

Although schools exist since 1935 most of children are not attending and the others are brought to Quoranic school; more than 80% of this population is illiterate.

The main housing configuration is grouped even if some villages have a spread configuration or farming houses round the principal settlement. Generally the main water source is wells, however, Nouna town has piped water supply for less than half of its population.

The whole district is difficult to access during the rainy season because the unpaved road leading to its center is impassable at this period. Nouna town is linked to rest of the country by telephone and a difficult system of public transport. There is an electrification source serving the town 19 hours per day.

The district has 1 district hospital, 1 medical Centre and 15 peripheral health Centres. The population of the Research Centre is in the area of 4 peripheral health centers and in the district hospital area. The health care financing system is based on user fees for the rare patient looking for modern care. ARI malaria and diarrhea are the main health problems.

The historic calendar includes events like the two wars in 1974 and 1985 against Mali, and the cholera epidemic in Nouna in 1971.

2. NOUNA DSS PROCEDURES

2.1 Introduction to the NOUNA DSS Site

The CRSN is an institution which started in the early 1990's as a collaborative project between the Department of Tropical Hygiene and Public Health of University of Heidelberg and the Ministry of Health of Burkina Faso under the name of PRAPASS (*Projet Recherche Action Pour Améliorer les Soins de Santé*). The main objectives were to: a) conceptualize and lead multidisciplinary health

research projects in the field according to the national health policy; b) disseminate the results of these research to sustain the health sector reforms; c) contribute to capacity building in health research; d) provide the MOH data for health policy and planning.

The Nouna Demographic Surveillance System of the Center has conducted regular population census since 1992 (with 26,000 individuals), and further comprises a vital event registration system and routine verbal autopsy interviews. The DSS covers 41 villages and – as of 2000 – the city of Nouna, with a total population of about 55,000 individuals. The DSS Staff is composed of one demographer, one research assistant, one database specialist, one GIS specialist, three field supervisors, six interviewers, five data entry clerks, one data entry supervisor, and two archivists.

2.2 NOUNA DSS Data Collection and Processing

2.2.1 Field Procedures

a) Initial Census

The first baseline census took place in 1992, and collected demographic information on all individuals in the study area.

b) Regular update rounds

Two censuses were held in 1994 and 1998, in order to check and add information in comparison to previous censuses. Censuses are planned every two years in addition to the vital event registration, in order to have a clear picture of the study population at certain fixed points in time.

c) Continuous surveillance

Previously programmed as a monthly activity, the vital event registration is since January 2000 is a three-month cycle data collection system. It concerns all the households of the surveillance area. The previous procedure included an interviewer visit to the key informant of the village to acquire information about any vital events in the village. Now the six interviewers are visiting each household and ask about all the members previously registered or actually living in the household. The interviewer identifies any new vital events based on recordings of previous visits. Registered variables include births, death, and pregnancies and migration out of the household, as well as information on all the dates related to these events. The Verbal autopsy file refers to deaths registered as vital events. The interviewer confirms a death by asking in a diplomatic way if the individual is present. In case of a negative response, the interviewer asks for further information on the circumstances of death. The form used by the interviewers includes identification information retrieved from the DSS. Because of ethical reasons, the interviews are held 3 months after the occurrence of a death. Subsequently, the filled questionnaires are coded by two physicians. In case the diagnoses are different, also a third physician diagnoses the questionnaire under scrutiny. The cause of death will be determined if at least two medical doctors are agreeing on one cause; otherwise the cause will be labeled as unknown.

d) Supervision and Quality Control

To reduce errors, interviewers use pre-printed database registration forms for data collection. Three field supervisors are employed to safeguard the quality of the collected data in the field by the following means:

- Examination of the questionnaires.

The supervisors examine the questionnaires in the field to check if the data collected by the interviewer makes sense.

- Supervised interviews.

The supervisors assist the interviewer at an interview without interfering in the process. The supervisor takes notes which he/she discusses after the interview with the interviewer.

- Control interview.

The supervisor takes a sample of completed questionnaires and directly returns to the households in question to verify the information. The rate of control-interviews is between 5 to 10 % of the total number of interviews.

- Blind control-interview.

The supervisor collects the data one more time himself and compares these with the data from the interviewer.

- Correction of the questionnaires.

The supervisor reads and corrects each questionnaire at the office before giving it to the data entry clerks.

2.2.2 *Data Management and Analysis*

a) Data handling and processing

The Nouna DSS employs a self-developed database, based on MS Access. This will change soon to HRSII. The database is capable to register longitudinal information and to check data consistency. The database includes information from the vital event registration and the census. Once questionnaires are filled in by interviewers, they are checked by field-supervisors and send to an archivist. The archivist sends the questionnaire for data entry to the data entry team, which is

composed of one database manager, one data entry supervisor and five data entry clerks. During data entry, questionnaires with missing or unclear information are sent back to the interviewers for correction.

b) Data Quality Assurance and links back to field operations

The data are regularly checked by one data-entry supervisor. In case of data problems, the data-entry clerk reports to the supervisor who tries to resolve the problem. Complicated problems are sent to the database manager, who can decide to contact the field team to identify the cause of the problem. The database team and the field-team work closely together, so most of the problems are quickly resolved.

Checking for data consistency data is done in two steps:

- Controlled data-entry

This data-entry screen is developed to prevent errors by applying user friendly data-entry masks, including easy-to-enter codes, two data-entry modes (read only and modify) and automatic attribution of individual IDs. It also includes an automatic validation, which uses message boxes for warning, verification of household IDs and individual IDs.

- Manual supervision

As data is entered into several computers, the data supervisor merges all the files in one single database. After the merging, specified variables are reviewed by listing and verification of all the households and individual entered (check for completeness) and by searching all variables for invalid values (this includes syntactic tests to check whether entered values are allowed, and semantic tests to compare two variables which have some logic relation). Furthermore, further validation is carried out by duplicate data entry by the data-entry supervisor of 5% of all the questionnaires.

3. NOUNA DSS BASIC OUTPUTS

3.1 Demographic Indicators Generated by the Nouna DSS Site

The following describes the 1998 data set. The population size was 30,886 individuals. This population is distributed according to the following main age group structure: 18.3 % 0-4 years, 29.9% 5-15 years; 47.7 % 15-64 years and 4.1 % for 65+ years. 50.1% of this population are women. The annual growth rate is 1.5% with a fertility rate of 6.6. Compared to the 1998 national census most of the indicators present a similar picture with no significant difference. The mean household size is 8 individuals and the dependency ratio is 109.8. Migration is dominated by the internal movement and to some extent by the external movement from the centre of the country to the borders of rivers of this zone.

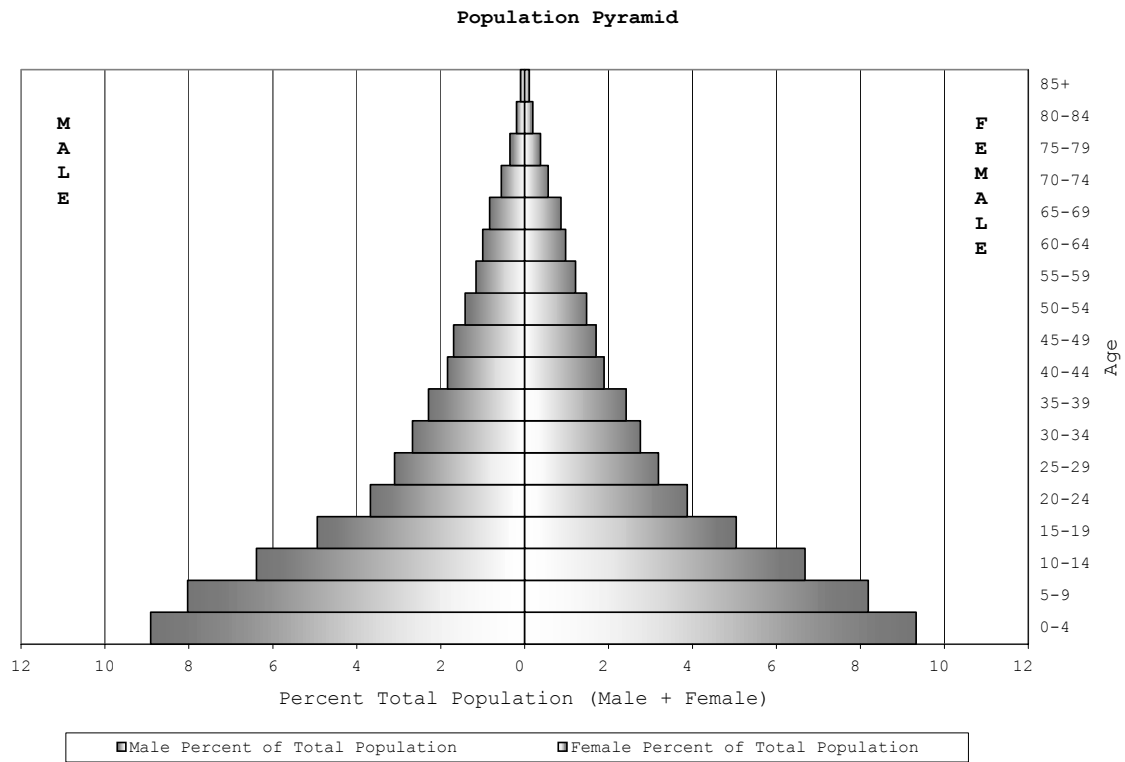


Figure 1. Population pyramid for the Nouna DSS Site

Table 1. Age and Sex Specific Mortality in the Nouna DSS Site

Age	Deaths (nDx)		Person Years (nPYx)	
	Male	Female	Male	Female
0	78	110	2,221	2,504
1-4	238	242	8,218	8,423
5-9	85	67	9,408	9,593
10-14	30	31	7,484	7,829
15-19	21	30	5,791	5,904
20-24	27	20	4,304	4,544
25-29	20	25	3,632	3,736
30-34	21	16	3,135	3,230
35-39	18	15	2,688	2,832
40-44	19	22	2,154	2,219
45-49	21	19	1,979	1,993
50-54	14	24	1,659	1,727
55-59	24	30	1,359	1,422
60-64	35	35	1,170	1,144
65-69	29	47	977	1,016
70-74	38	36	651	656
75-79	31	44	411	439
80-84	30	21	229	227
85+	12	25	114	132
Total	791	859	57,585	59,572

Births 4,602

CDR 14.08

CBR 39.28

CGR 25.20

4. REFERENCES

5. ACKNOWLEDGEMENTS

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