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AGRICULTURAL POLICY ANALYSIS PROJECT, PHASE II

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AGRICULTURAL DATA AND DATABASES

IN NIGER

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TABLE OF CONTENTS

LIST OF TABLES AND FIGURES iv

LIST OF ACRONYMS v

ACKNOWLEDGEMENTS vii

EXECUTIVE SUMMARY viii

1. INTRODUCTION 1

2. SOURCES OF PRIMARY AGRICULTURAL PRODUCTION DATA IN NIGER . . 2
   - 2.1 Survey Design: Sampling and Extrapolation 2
   - 2.2 Survey Implementation and Reporting 3
   - 2.3 Potential Sources of Error in Survey Results 4
   - 2.4 Harmonization of the Official Statistics 5
   - 2.5 General Opinions of the Implementation of MAG/EL Harvest Surveys . . . 10
   - 2.6 Overview of Small-Scale Agricultural Data Collection Efforts 11
     - 2.6.1 INRAN Baseline Surveys 12
     - 2.6.2 AGRHYMET Surveys 14
     - 2.6.3 IFPRI/ICRISAT Household Surveys 14

3. LIVESTOCK DATA AND MARKETING INFORMATION SYSTEMS 16
   - 3.1 The Classic System 16
   - 3.2 The "New" Livestock Market Information System 17

4. AGRICULTURAL PRICE AND MARKETING DATA COLLECTION 21
   - 4.1 Système d'Information sur le Marché des Céréales (SIM)/Office des Produits Vivriers du Niger (OPVN) 21
   - 4.2 Other Cereals Market Price Collection Activities 24

5. OTHER AGRICULTURE-RELATED DATA COLLECTION 25
   - 5.1 Agricultural Trade Statistics 25
   - 5.2 Natural Resource Data Sources 28
   - 5.3 Meteorological Data 29
   - 5.4 Agricultural Inputs Consumption Data 30
     - 5.4.1 Fertilizer Use 30
     - 5.4.2 Improved Seeds 30
     - 5.4.3 Pesticide 31
   - 5.5 Pest Loss Data 31

5.6 Irrigated Perimeters 31
5.7 Biomass Production Data 32
5.8 1988 Census 32
5.9 Private Sector Services and Stocks 33

6. EXISTING AGRICULTURAL DATABASES: CONTENTS, SOURCES, AND ACCESSIBILITY 34
6.1 MAG/EL Databases 34
6.2 BASDONAG 35
6.3 Ministry of Plan Socioeconomic Database 36
6.4 UNDP Socioeconomic Database 37
6.5 AGRHYMET Databases 38
6.6 DIAPER Agricultural Database 39
6.7 Other Databases 39

7. GENERAL OBSERVATIONS AND CONCLUSIONS 41

ANNEXES

Annex A: Fiches for MAG/EL Databases
Annex B: Fiches for "classic" livestock market survey
Annex C: List of MAG/EL survey activities
Annex D: BASDONAG protocol
Annex E: Ministry of Plan socioeconomic database protocol
Annex F: SAP database protocol
Annex G: List of GON databases and contacts
Annex H: List of available data from participants at MAG/EL/AGRHYMET/CRED conference on geographic information systems (1990)
Annex I: Constraints to More Efficient Agricultural Data Collection and Use: Examples from Other African Countries (Bechir Rassas)

LIST OF TABLES AND FIGURES

Tables

2.1 Data Gathered in INRAN Baseline Surveys 13

3.1 Variables Included in the New Livestock Marketing Information System 19

6.1 Contents of 1989 Agriculture Statistical Annual 35

Figures

2.1 Provisional vs. Definitive Measures, Sorghum Area, 1990 7

2.2 Provisional vs. Definitive Measures, Millet Area, 1990 8

2.3 Provisional vs. Definitive Measures, Sorghum Yield, 1990 9

2.4 Provisional vs. Definitive Measures, Millet Yield, 1990 10

5.1 Trade Figures: CRED vs Official, Cowpea Exports 27

5.2 Trade Figures: CRED vs Official, Cattle Exports 27

5.3 Trade Figures: CRED vs Official, Onion Exports 28

LIST OF ACRONYMS

ASDG	Agricultural Sector Development Grant
BASDONAG	*Base des Données sur l'Agriculture*
CA	*Centrale d'Approvisionnement*
CDA	*Chef de District Agricole*
CILSS	*Comité Permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel*
CRED	Center for Research on Economic Development, University of Michigan
CSA	*Chef de Service d'Arrondissement*
DDA	*Directeur Départemental d'Agriculture*
DEP	*Direction d'Etudes et du Programmation*
DIAPER	*Diagnostique Permanent*
FAO	Food and Agriculture Organization of the United Nations
FEWS	Famine Early Warning System
FLUP	Forestry and Land Use Planning Project
GON	Government of Niger
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFPRI	International Food Policy Research Institute
INRAN	National Agronomic Research Institute of Niger
MAG/EL	*Ministère d'Agriculture et l'Elevage*
MHE	*Ministère de Hydrologie et d'Environnement*
NDVI	Vegetation Index
NILPP	Niger Integrated Livestock Production Project
ONAHA	*Organisation Nigerien d'Aménagements Hydro-Agricoles*

OPVN	*Office des Produits Vivriers du Niger*
SAP	*Système d'Alerte Précoce*
SIM	*Système d'Information de Marchés*
TIA	Local units of measure
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
USAID	U.S. Agency for International Development

ACKNOWLEDGEMENTS

This report is actually the work of people too numerous to name. Over 30 GON officials in various divisions of nine different ministries and organizations generously gave their time to provide the information on which this report is based. Staff at several multilateral organizations also provided generous assistance for this work.

USAID/Niamey proved a consistently supportive and hospitable environment in which to undertake this effort. Several individuals in particular provided vital assistance in the preparation of this study. Commandant Saley was involved in every stage of the work. He provided substantive input, as well as outstanding logistical support. In addition, this study would not have been possible without the comprehensive and insightful input of both Dale Rachmeler (CRED), and Charlotte Sharp (FEWS). Special thanks are also due to Gregg Baker, who, in addition to designing and managing this assignment, made every effort to provide personal support and encouragement. Also, Bechir Rassas (ISTI) undertook the difficult task of researching and writing Annex I on short notice.

It goes without saying, however, that the author alone is responsible for any factual errors or misinterpretations in this study.

EXECUTIVE SUMMARY

This report seeks to provide an overview of Niger's agriculture-related data resources and to serve as a cautionary guide to users of those resources. These resources comprise the data themselves and the databases in which they are maintained. The report thus traces the networks through which agriculture-related data travel, from their points of observation to their installation in databases in Niamey.

The major emphasis is on looking "behind the scenes" at the sources of agricultural data as a means of informing users of potential sources of error and bias in the data. Much of the information in this report comes from extensive interviews with both producers and users of the data, whose opinions provide an important means of assessing the data's quality.

The strong consensus of opinion among producers and users of Niger's agriculture-related data is summarized as follows: "The data is poor, but it's better than it used to be. Also, it's the only data available, so we use it." Closer inspection reveals that the quality of the data varies by type.

The core of Niger's agricultural data system is the Ministry of Agriculture and Livestock's annual pre-harvest survey of major cereals and legumes. This survey provides the basis for the official GON statistics on area, production, and yield of major crops. Neither users nor producers of this data have much confidence in its accuracy.

Particular concern focuses on the manner in which the data are collected in the field. The survey agents are the least trained and the most heavily burdened cadres in the Ministry. In addition to their work on the harvest assessment, they undertake price collection, plant protection, and agricultural extension activities. Moreover, they are given neither the means nor the incentives to exercise great rigor in their data collection practices. There is a widespread suspicion that many survey agents either fail to visit their appointed fields or do cursory work when there.

The official production, area, and yield statistics are further suspect because they have not always been based on definitive measures made at harvest time. The GON and donors require assessments of the harvest months before the harvest itself. For a number of years, particularly during the 1980s, these pre-harvest estimates were published as official statistics, and definitive measures were never made. Changes in this practice in recent years contribute to a general sense that the quality of MAG/EL harvest data is improving.

Livestock production and marketing data appears to be in somewhat better shape. An improved livestock market information system has been in place since 1986. This system is believed to produce more accurate and timely information than that gathered by the pre-existing livestock data system (which continues to operate along with the new system).

Market price data for cereals may be among the best agricultural data collected in Niger. OPVN appears to do a good job of collecting retail prices, although wholesale prices seem to suffer from lack of clear definition. Farmgate prices remain the weak link in the cereals market information system. Nonetheless, price collection at each of these levels is generally believed to have improved during the past several years through installation of the *Système d'Information sur le Marché des Céréales au Niger.*

Reviews of the natural resources data are mixed: the water resources database is thought to be quite good, while the forest resources information seems to be relatively weaker. The difference in quality of these data is illustrated by the fact that the water resource data are available in a sophisticated database system, while the forestry service last published an annual report in 1987.

Data on international trade of agricultural and agro-pastoral products is perhaps the weakest link in the data system. It is well-known that a major portion of Niger's external trade passes unofficially (and hence unrecorded) across the long and porous border with Nigeria.

A wide range of offices scattered across several ministries collect these various types of data. Public access to this information is generally limited to the official GON statistics, which are published by the Ministry of Plan. These are precisely the same data that the technical line ministries themselves publish with various degrees of regularity.

Several significant efforts are currently underway to construct time series of socio-economic data and to organize them into formal computerized databases. To date, none of these efforts has progressed far, though the UNDP intends its database to be operational by December 1991. The essential point, however, is that each of these databases will draw on the same set of official statistics as its source.

As a general matter, Niger's agricultural data system appears to be on auto-pilot. Huge volumes of data are collected; yet, very little use is made of that data. The problem lies partly in the lack of well-trained analysts: the ability to collect data far exceeds the ability to analyze and to use them constructively.

The institutions involved are fully occupied with the substantial challenges of regular data collection and reporting. That the system operates is a significant accomplishment. Yet, there is little sense of purpose behind much of the data collection effort. This is due to the lack of demand for systematic policy analysis by decision-makers. In some sense, this is a "chicken and egg" problem: decision-makers are unlikely to ask for data-based input to the policy process when they have little confidence in the data; yet, there is no reason to think that the data quality will improve in the absence of a demand for better data. USAID's new Policy Analysis and Monitoring Project will provide an excellent opportunity to address both sides of this dilemma by simultaneously stimulating the demand for policy analysis and enhancing the capacity of local institutions to meet those demands.

1. INTRODUCTION

This report seeks to provide an overview of Niger's agriculture-related data resources, and to serve as a cautionary guide to users of those resources. The Government of Niger, donors, and participants in Niger's agricultural system all make decisions on a continual basis. For farmers, the decision may be how much sorghum to plant or whether to sell livestock; for donors, the decision may be how much food aid to supply; and for the GON, the decision may be how much to tax rice imports. In addition, the GON and donors share a need to monitor the course of structural adjustment and to define further policy reforms. The common thread is the need for a clear, realistic picture on which to base those decisions.

The accuracy and timely availability of agricultural data are critical determinants of the ability of various actors to make the best decisions. In a world of imperfect information, it is also important that consumers of data be aware of the data's shortcomings. By looking "behind the scenes" at the sources of Niger's agricultural data, this report may help users of that data to evaluate their decisions. In addition, this report may help to make the data more accessible to users by providing an inventory and description of agriculture-related databases.

Chapters 2 through 5 of this study examine the sources of different types of agriculture-related data in Niger. Chapter 2 concentrates on the data that lies at the heart of the system: area, production, and yield statistics for major cereals and legumes. The issues addressed include survey design, implementation, evaluation, and reporting of official statistics. Chapter 3 addresses livestock production and marketing data with similar questions in mind. Chapter 4 considers the sources and reliability of cereals price data, and Chapter 5 provides an overview of other related agricultural data collection activities.

Chapter 6 reviews the contents, sources, and accessibility of the major repositories of agricultural data in Niger. These databases are constructed out of the data described in the previous chapters. The concluding chapter presents general observations on Niger's agricultural data and databases, and suggests possible next steps for USAID in this area.

One should note at the outset that many of the data collection efforts and repositories described in this report have benefitted from substantial USAID support. This list includes the livestock marketing information system, Famine Early Warning System (FEWS), AGRHYMET, BASDONAG, INRAN, IFPRI, and the socioeconomic database under development at the Ministry of Plan.

2. SOURCES OF PRIMARY AGRICULTURAL PRODUCTION DATA IN NIGER

Every user of national-level agricultural production data in Niger is obligated, by lack of alternatives, to use the official statistics published by MAG/EL. While a number of small-scale agricultural data collection activities have been developed for specific purposes, the magnitude of the effort required to collect statistics on a nation-wide scale limits that activity to the GON. Most users appear to have little confidence in the accuracy of official numbers; yet these are the numbers that everyone uses. This chapter focuses primarily on describing the source of the official agricultural statistics of Niger. Issues relevant to this discussion include survey methodology, reporting procedures, quality assessment of data collection activities, and an overview of users' opinions of the data.

In particular, this chapter addresses these issues as they pertain to data on the production, area, and yield of major cereals and legumes in Niger (which include millet, sorghum, cowpeas, and peanuts). These are the essential data covered in the Ministry's annual harvest survey (*L'enquête prévision et estimation des récoltes*).

2.1 Survey Design: Sampling and Extrapolation

The ability to generalize from any sample depends critically on the structure and size of the sample. The degree of bias in the estimates depends on how representative is the sample from which the generalization is made; the precision of those estimates (e.g. the variance around the mean) depends on the sample size.

MAG/EL's annual production survey rests on a two-stage sample design. The first stage involves drawing a stratified random sample of villages in each *arrondissement*. The villages are stratified by population size, and the number of villages chosen in each department is 12 times the number of *arrondissements* in that department. The number of villages to be randomly selected in each *arrondissement* is proportional to the population of that *arrondissement*. At least six villages are selected from each *arrondissement*. The second stage of sample selection involves the random drawing of five farming units (*exploitations*) from each sample village. Each year this process yields 384 villages, each of which brings five *exploitations*, for a total sample of 1920 observations.[1] This sample comprises approximately 2.5 percent of Niger's villages, each of which is represented by approximately 10 percent of its population.

Extrapolating up to the national level from this sample is done in several stages. Within each sample *exploitation*, observations are taken from several fields. Thus, the first step is to make the appropriate calculations for each *exploitation*. The next step is to extrapolate up to the level of the sample village. This is based on the total number of *exploitations* within each village. Population-weighted averages of the sample villages are then extrapolated to the *arrondissement* level. Similar extrapolations are then done from *arrondissement* to department, and from department to national level.[2]

This sampling and extrapolation methodology was introduced in 1988, two years after CILSS, through its *Diagnostic Permanent* (DIAPER), to support MAG/EL data collection. The French FAC provided technical assistance in developing the sampling methodology.

Those interviewed, both inside and outside MAG/EL, widely agreed that the sample design is adequate, but that the sample size is too small. The statistical implications of this are that the estimates may not be biased systematically, but the margins of error around those estimates are large. In particular, FEWS and DIAPER have observed that the sample size is such that statistically significant estimates can be made down to only the departmental level. The number of observations per *arrondissement* is too small to yield statistically significant estimates at that level of disaggregation.[3]

A recent evaluation of Niger's harvest survey by DIAPER reports high margins of error for area estimates.[4] At a 95 percent confidence level, *arrondissement* level area estimates for millet, sorghum, and maize, were subject to sampling errors of greater than 45 percent in some instances, and were never below 21 percent. At the departmental level, sampling errors were over 43 percent for Diffa, and over 20 percent for Maradi. At the national level, the DIAPER evaluation calculated a sampling error of 9.2 percent at a 95 percent confidence level.

2.2 Survey Implementation and Reporting

The annual survey proceeds in five stages. Over the course of these stages, the agents fill out six standardized *fiches*, which appear in Annex A. The first stage begins in May, with the enumeration and selection of sample *exploitations*. Information collected at this stage includes a list of all the *exploitations* in the village, the head of the unit, number of households, persons, agricultural workers, and fields associated with each *exploitation*.

In June and July, the agents measure fields to estimate surface area planted in the sample *exploitations* and determine the principal crops planted in each field. This is also the time when they place area sample frames in the fields. The third phase occurs in August, when the agents question the heads of the units regarding the previous harvest. For each field, the agent records which crops were planted, and the operators' descriptions of the previous harvest. This phase of the survey began only last year, and the two years of existing data are yet to be processed.

In September, the agents make their forecasts of yield for each crop in each field. The agents employ two techniques in estimating the harvest. The first involves counting the stalks within sampling squares (*carrés*) previously placed in the fields and relating the count to the net weight harvested from a similarly sized square from the previous year.[5] The second approach involves asking the farmers' opinions regarding the relationship between last year's harvest and expectations for the present season.

The fifth stage of the annual survey involves the actual harvesting of the sample squares. For each field, the agent reports the crops, number of plants harvested, gross and net weight, number of bales harvested in total for that parcel of land, and the yield.

Reporting and aggregation of these results follows the administrative chain within MAG/EL. The agents are typically *Chefs des Districts Agricoles* (CDAs). The CDAs pass the *fiches* up to their *Chef de Service d'Arrondissement* (CSA). At this stage, the CSAs use programmed calculators to determine the areas of the parcels and their estimated production for the *arrondissement*. The CSAs then pass this information up the line to the *Directeur Départemental d'Agriculture* (DDA), as well as to the local *sous-préfet*. The DDAs do the calculations necessary to estimate area and yield for the different crops at the departmental level. The DDAs pass these estimates up to the Ministry's agricultural statistics service, as well as to the Préfet for that department. Treatment of the data at the national level involves reviews for obvious anomalies, correction of errors, and synthesis of the departmental-level calculations of predicted area, yield, and production.

Estimated results for the year's harvest are needed by October if they are to provide the basis for a food needs assessment. Yet the definitive results, based on actual harvest measures, are not available until December or January and not published until April, when the MAG/EL statistical annual report is due out.

An additional problem with this reporting structure emerged from interviews with *arrondissement*-level agricultural officials.[6] The CSAs complained that the centralization of data processing and reporting of agricultural data prevents them from seeing the results of their work at a level of disaggregation that is useful to them. Summary statistics at the *arrondissement*-level are not available. The CSAs thus expressed a preference for a more decentralized system of data processing and reporting, similar to the system currently in place for livestock surveys (described in Chapter 3). Such a system, however, would require substantial donor-funding for the provision and maintenance of computers at the department level, as well as training in data management. Such support has not been forthcoming.

2.3 Potential Sources of Error in Survey Results

Zarkovich (1966) classifies statistical errors into three broad categories: 1) errors resulting from inadequate preparations, 2) errors committed during data collection, and 3) processing errors.[7] It is highly likely that all three types of occur in the MAG/EL production survey.

Within the first category, Zarkovich distinguishes between biased procedures and biased tools. In this context, there is reason for concern about the method used by MAG/EL to estimate crop yields. The method of crop cutting to estimate yields has been shown to result in systematic over-estimation of true yields.[8] In a controlled experiment in five African countries, Scott, Marchant, and Verma found that millet yield estimates, based on

crop cuts, over-estimated yield by 32 percent in Niger.[9] In contrast, farmers' estimates of yield (in a sample excluding Niger) over-estimated yield by only 3 percent.

The sources of bias in crop cut estimations have to do with non-randomness in the placement of the *carrés*.[10] For instance, "border error" can result from the requirement that sample sub-plots fit wholly within the plot. Particularly when fields are irregularly shaped, such a requirement increases the relative probability of selecting sub-plots closer to the center of the plot. Since yields often tend to be systematically higher closer to the center of plots, this introduces an upward bias to the yield estimate.

Casely and Kumar further point out that field agents tend to avoid placing *carrés* in empty or patchy areas within the plots.[11] Since there is often no off-setting aversion to selecting particularly lush sub-plots, a further source of upward bias may be introduced to yield estimates. As presented below, *there is good reason to believe that crop cut estimates for sorghum and millet in Niger significantly overstate actual yields.*

Zarkovich divides the second category of potential errors listed above -- errors in data collection -- into three groups: 1) listing errors, 2) missing data, and 3) response or observational errors. Listing errors may occur if, for example, *exploitations* are inadvertently excluded from the village census from which random sites are selected, or if some site that was not randomly selected is included in the sample in place of one that was selected. Biased estimates can also result from missing data. For instance, if the sample plot has already been harvested by the time the agent arrives to measure a sub-plot, data will be missing. Similar bias can arise from inaccuracies in farmers' estimates of yield, although they are more likely to arise in measurements taken by agents as part of the survey. Many such opportunities arise, for example, when measuring the area of irregularly shaped fields. Finally, the ease with which errors can enter into data processing requires no elaboration.

In addition to these categories of errors, confusion arises over how to deal with inter-cropping when calculating planted area. Indeed, one observer noted that MAG/EL has changed its method for treating inter-cropping when reporting areas planted.[12] NAAR staff specifically cited 1988 as a year in which the definition changed, and inter-cropped areas were simply added to one another, resulting in a greatly exaggerated total area cropped.

2.4 Harmonization of the Official Statistics

A significant concern with regard to the official agricultural statistics has to do with the stage and manner in which the survey results are finalized. As noted above, MAG/EL and donors require provisional estimates of a given year's harvest in September/October. Toward that end, two technical missions take place during the harvest period. The first technical mission is internal to MAG/EL. This mission's goal is to collect and synthesize the departmental-level pre-harvest estimates in order to assess the country's food balance for the year. The second technical mission consists of CILSS and FAO representatives quickly touring selected areas in order to judge the validity of the MAG/EL estimates. In some

instances the CILSS/FAO team may challenge the MAG/EL estimates, which may then be amended.

The results of this harvest pre-evaluation, however, are not released until personally approved by the Minister of Agriculture. Indeed, in some past years, the Minister and the Head of State would tour certain regions to verify the pre-evaluation figures with the *préfets*, who had their own estimates of the situation. The underlying purpose of this political review is to ensure that the food needs assessment that emerges is politically acceptable.

This is not to suggest that the process leads to regular changes in the numbers prior to publication. Yet, the degree of food deficit calculated is a highly politicized number, since it bears directly upon the country's food aid level, as well as the Government's prestige. The political incentives are such that the Government wants to avoid the appearance of failing to provide for its people; yet, there is also an incentive to attract foreign food assistance.

One *Directeur Départemental d'Agriculture* described that in two years during the past decade (1984 and 1987), the politicians made significant changes in the harvest pre-evaluation figures prior to their publication. In 1984, politicians reduced the calculated food deficit by nearly 50 percent. In 1987, the definition of food needs per person was reduced, thus lowering the calculated deficit relative to a given production level. This practice, however intermittent, heightens one's skepticism about the official statistics.

Prior to 1988, field agents simply stopped following the harvest after the provisional estimates were published. Thus, definitive estimates were never made, and the official statistics published by the GON were based entirely on pre-harvest assessments. Since that time, through the influence of DIAPER, definitive harvest measures have been made, although they are not available until April of the following year.

Relying on pre-harvest estimates is problematic for many of the reasons cited above. In publishing the definitive results for the 1990 harvest, MAG/EL and SAP provided *arrondissement* level tables comparing the provisional estimates with final measures for the production, area, and yield of millet and sorghum. Figure 2.1 through 2.4 illustrate the divergence between the provisional and the definitive numbers at the departmental and national levels.

To the extent that one can take the definitive numbers as accurate, these divergences demonstrate the potential inaccuracies in the official statistics for those years prior to 1988, when definitive measures were not made.

Figures 2.1 and 2.2 show the differences for area planted in sorghum and millet, respectively. In most cases, provisional measures underestimated areas for sorghum and millet, although the degree of inaccuracy was not great. For sorghum area, the provisional estimates were 15 percent too low on average across departments, and 30 percent too low nationally.[13]

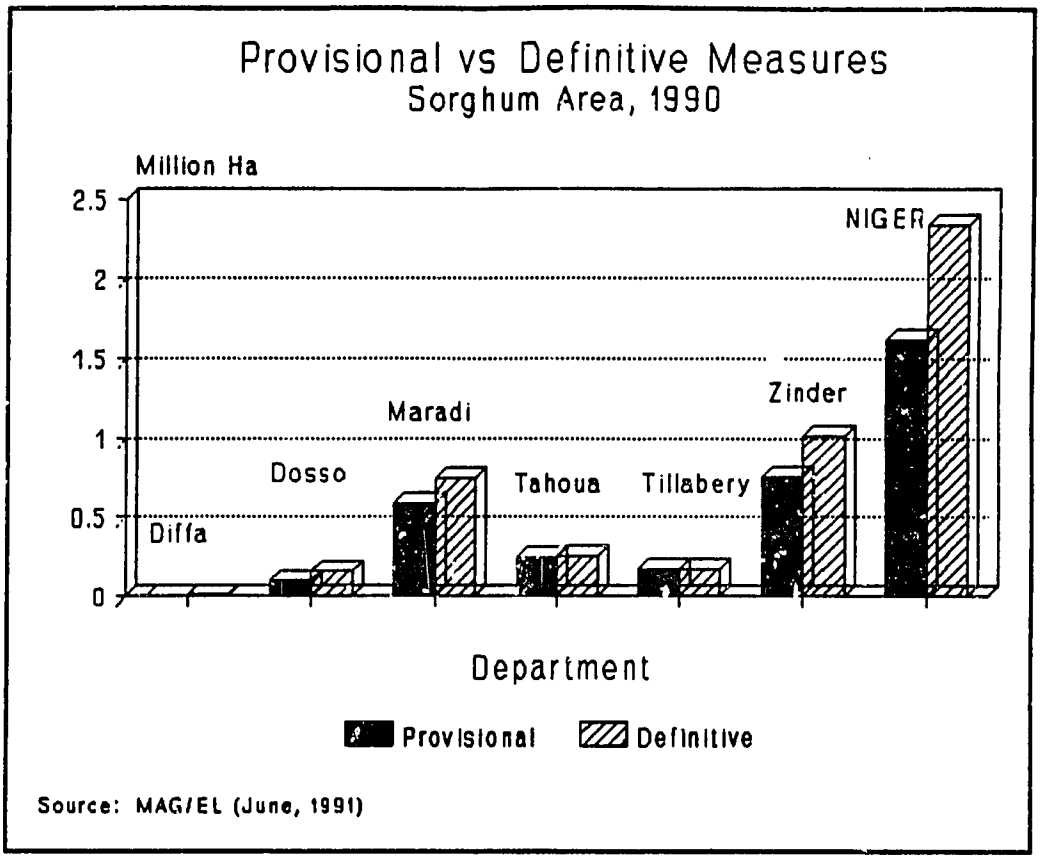
Provisional vs Definitive Measures
Sorghum Area, 1990
Million Ha
2.5
2
1.5
1
0.5
0
NIGER
Zinder
Maradi
Dosso
Tahoua
Tillabery
Diffa
Department
Provisional
Definitive
Source: MAG/EL (June, 1991)

Figure 2.1

For millet area, as shown in Figure 2.2, the average departmental provisional estimate was 17 percent too low, and 18 percent too low nationally. The comparison between provisional and definitive estimates is more disturbing for the yield estimates.

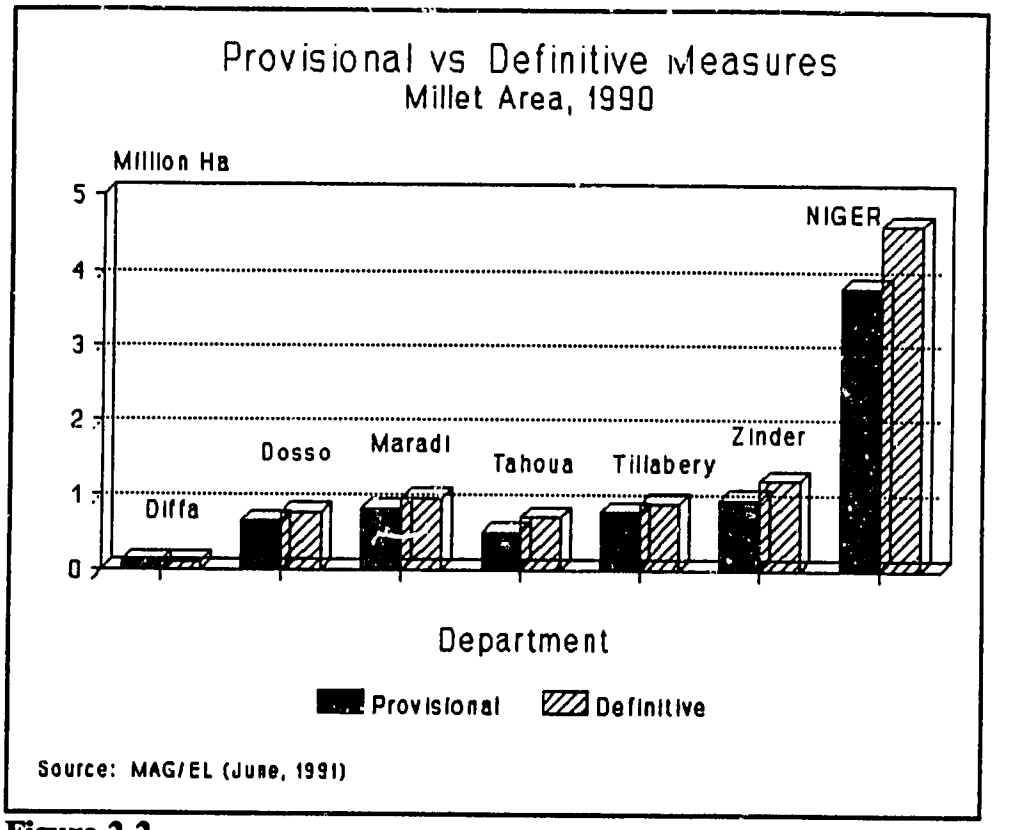

Figure 2.2

As discussed above, yield estimates tend to be too high. Figure 2.3 illustrates the divergence for sorghum yields. On average across departments, predictions of sorghum yield were 79 percent too high, and the national prediction overestimated sorghum yield by 96 percent.

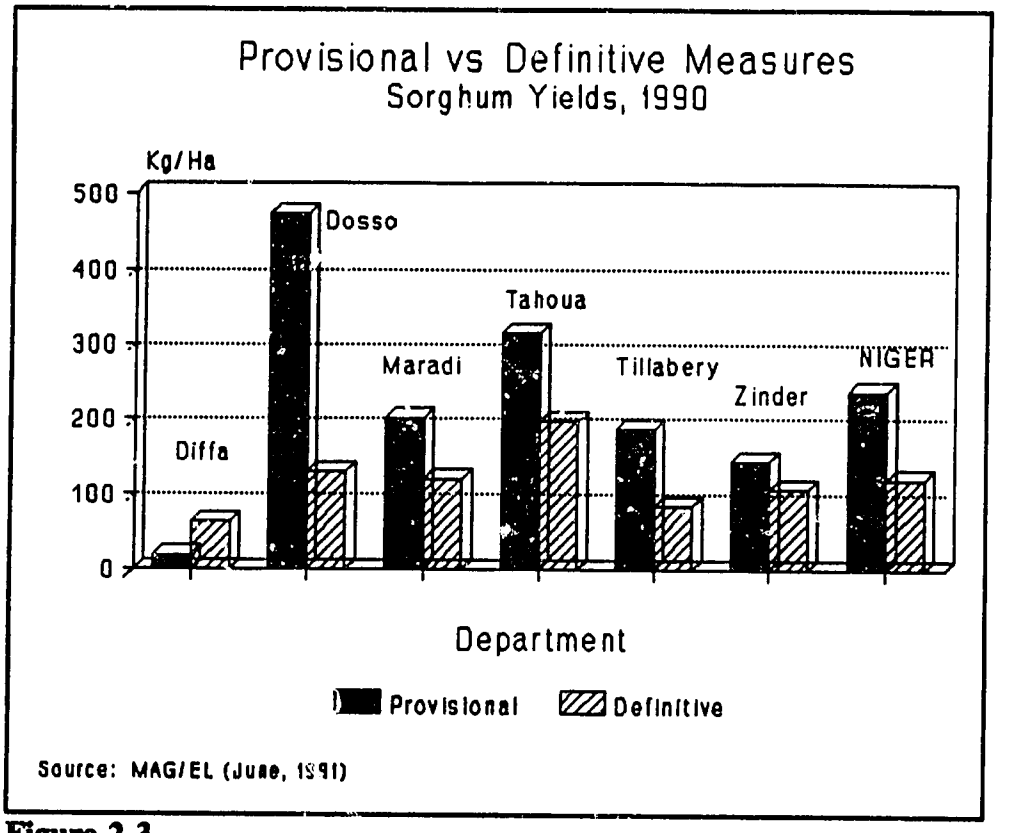

Figure 2.3

Similarly, as Figure 2.4 demonstrates, provisional estimates significantly over-stated millet yields. On average across the departments, predictions overestimated millet yields by 17 percent. Nationally, the over-estimate was 18 percent. It is also curious that for both millet and sorghum, every department significantly overestimated yield with the exception of Diffa, which significantly underestimated yields.

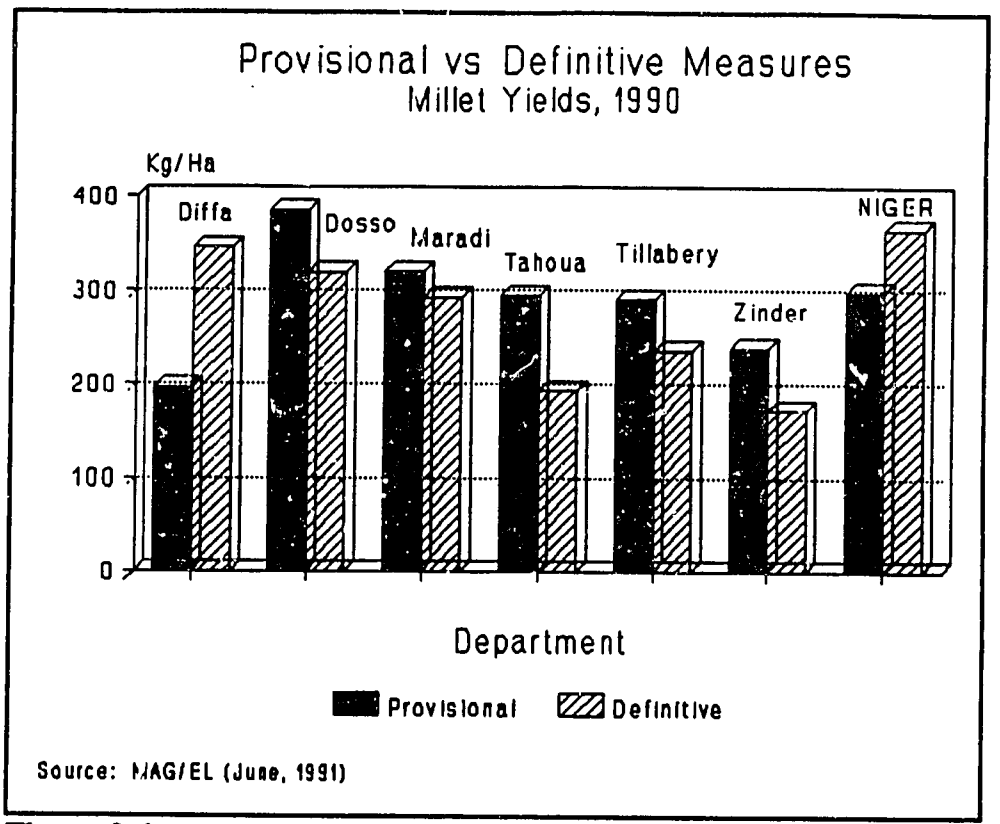

Figure 2.4

Production estimates are calculated as the product of area and yield. The net result of these over- and underestimations on a national level were that sorghum production was overestimated by 36 percent, while millet production was underestimated by 33 percent (relative to the definitive estimates).[14]

2.5 General Opinions of the Implementation of MAG/EL Harvest Surveys

Interviews with both producers and users of MAG/EL harvest survey data yielded a strong consensus of opinion, summarized as follows: "The data is poor, but it's better than it used to be. Also, it's the only data available, so we use it."

In practice, most of the potential errors described above become actual errors in the MAG/EL survey. Both users and producers of this data cited several problems repeatedly in

interviews. The most serious was a widespread suspicion that, in many instances, survey agents fail to visit the fields. One DDA explained that the Ministry does not have the means to cover agents' transportation costs. Since the agents often need to travel significant distances to reach their assigned fields, it is reasonable to expect that the added burden of having to pay their own travel expenses would provide a serious disincentive.

There is also a widespread suspicion that those agents who do go out to the fields may not apply the most rigorous means to make the necessary estimates. Crop cutting is onerous work. Thus, it is commonly thought that some agents might simply "eyeball" areas and yields, or base this year's estimates on some arbitrary adjustment to last year's harvest.

In addition, these agents (the CDAs) are charged with an overabundance of responsibilities. The same agents responsible for surveying the harvest are also responsible for undertaking price surveys, acting as agricultural extension agents, and dealing with crop protection issues. Given this range of responsibilities, it is reasonable to expect that they may not be able to devote adequate attention to the rigorous work required to estimate crop area and yield.

The CDAs are the least trained and lowest paid cadres in the Ministry. Indeed, one interviewee cited the lack of trained personnel at the bottom as the primary constraint to improved agricultural data collection in Niger.[15]

MAG/EL has neither the material nor the human resources necessary to provide close oversight of the far-flung and varied components of a nationwide data collection effort. While post hoc consistency checks are a routine part of MAG/EL's data processing, there is simply no way to verify the raw data collected (ostensibly) in the field, given the means available to MAG/EL.

In short, neither the producers nor the users of the official GON agricultural production data have much confidence in their accuracy. Several interviewees hold that the quality of the data has improved over the past several years, since CILSS has taken over technical and financial support for the survey. The data are widely accessible and widely used. Since there are no alternative data, the most that one can hope, at least in the short run, is that the quality continues to improve and that users approach the data with caution. The following section provides a brief overview of much smaller agricultural data efforts in Niger.

2.6 Overview of Small-Scale Agricultural Data Collection Efforts

While MAG/EL is the only institution equipped to attempt nationwide agricultural data collection, several organizations have mounted smaller efforts to meet their specific needs. In many instances, these data collection efforts were implemented by specific projects in need of baseline data for project evaluation. In other cases, surveys have been undertaken

for research purposes. The instances described in this section do not comprise an exhaustive list of such efforts.

2.6.1 INRAN Baseline Surveys

The National Agronomic Research Institute of Niger (INRAN) has undertaken baseline surveys of agricultural production in five regions, including Marafunda, the Niamey River area, Maradi, Birni N'Konni, and Gaya. These regions were non-randomly selected to represent a diversity of agro-climactic zones. The purpose of this research is to provide baseline information against which to evaluate the results of their agronomic research program, as well as to inform the research process regarding the specific farming practices and constraints in those regions.

This purpose dictates collection of much more detailed data than called for under the protocol for the MAG/EL harvest survey. INRAN is involved in farming systems research, a specific analytical perspective that requires detailed information on labor allocation, inputs use, practices, and household demographics, in addition to production, area, and yield data.

The specific information gathered for the trial zones is summarized in Table 2.1. In addition, for certain zones, INRAN collects detailed demographic data on the cultivators, including ethnicity, household demographics, education and skill levels of household members, household tool inventories, and household livestock inventories.

INRAN supports and manages its own staff of survey agents for this work. The relatively small scale of the activity permits INRAN adequate means to provide close oversight of its field investigators, and to review their results carefully. Clearly, the level of detail required for farming systems research, and the management control required to ensure data quality defy analogy with the national data collection effort.

INRAN staff are confident of the quality of most of their data, which is maintained on diskette. Data for two of the regions have been organized into a database. In principle, INRAN data for specific zones could be used to spot check MAG/EL data. Indeed, the NAAR project staff reports that informal efforts at this sport checking confirm the over-estimation of yields suggested above.[16] Yet, this type of cross checking is only indicative, and is possible for very few zones. Since the INRAN zones are non-randomly selected, that baseline data cannot be extrapolated to broader regions.

One should also note that INRAN does not publish this baseline data, and it is not intended for public use. It is available only by special permission from the INRAN Director General.

Table 2.1 -- Data Gathered in INRAN Baseline Surveys

Plot Characteristics

- surface area
- tenure
- distance from household
- measures of fertility
- cropping history
- crops planted for the current season
- varieties planted this season
- planting densities

Family Labor Times

- number of hours worked by men, women, and youths on a distinct task in a single day

Non-Family Labor Times

- number of hours worked by men, women, and youths on a distinct task in a given day
- terms of the labor transaction
- magnitude of payment and gifts

Consumption of Materials

- type of input
- data and type of the operation during which the input was used
- cost of input, if purchased
- quantity of input used in local units
- conversion factors for local units
- quantity of inputs used in common units

Use of Animal Traction

- number of hours animals were used
- number of animals employed
- activity for which animals were employed
- animal ownership
- equipment used

Harvest Results

- quantity of product in local units
- average weight of product in kg per local unit
- threshing yield percentage
- net product yield for the plot
- quantity of by-product in local units
- average weight of by-product per local unit
- net by-product yield for the plot

Source: INRAN

2.6.2 AGRHYMET Surveys[17]

AGRHYMET is a multi-donor, Sahel-wide program with a broad mandate to support increased food production in the Sahel through the provision of timely weather and climactic data, as well as a better knowledge of the impact of cyclical events on water, soils, vegetation, and crops. AGRHYMET gathers most of the data necessary to pursue this mandate from existing sources. The principal data that AGRHYMET does not receive from national sources are satellite data from remote sensing.

The direct agricultural data collection performed by AGRHYMET pertains to its remote sensing activities. The primary output of the remote sensing is an index of the density of vegetation on a given surface area (NDVI). AGRHYMET is working to model agricultural yield as a function of NDVI, and collects specific agricultural data through *Project ESPACE* as part of that effort.

In particular, this modelling effort requires the calibration of the satellite images to specific conditions on the ground. Thus, AGRHYMET collects weekly data from 25 sites in the Niamey district. For 45 sub-plots within each 3x3 kilometer square site, AGRHYMET agents measure the specific variables with which researchers plan to calibrate the satellite images. These variables include area, yield, density of culture, density of leaves, soil type, weeding practices, and application of purchased inputs.

This specific data collection effort is in its second year. Researchers maintain these data in a database, along with similar observations from other Sahelian countries. It is not published in the regular AGRHYMET bulletins (which are described in Chapter 6), and is intended exclusively for AGRHYMET use in its modelling research.

2.6.3 IFPRI/ICRISAT Household Surveys[18]

The International Food Policy Research Institute (IFPRI) is engaged in research on rural households' cropping choices and supply responsiveness. This research is based on data from ICRISAT surveys of households in four villages in western Niger between 1982 and 1985, as well as data from surveys of the same villages conducted by IFPRI in 1988-89. In addition, IFPRI undertook similar surveys in conjunction with INRAN in other zones during 1989-90.

The original ICRISAT survey covered 100 households, who were interviewed weekly, fortnightly, and quarterly. Data were collected on consumption, expenditures, production, marketing, stocks (crop and animal), and income from all sources (both agricultural and non-agricultural). As in the case of INRAN, described above, the purpose of this data collection was to support farming systems research. Thus, data were required at a fairly high level of detail for the sample households. The villages were selected to represent both deficit and intermediate crop production zones (Djermaganda and Dallol Bosso, respectively). The

ICRISAT data permits the comparison of a "good year" (1983-84) and a "bad year" (1984-85).

IFPRI analysis of this data began in 1987. The objective of this research was to understand the nature of rural households' responses to food policy changes, technology options, and commodity choices in the context of their overall income and food security strategies. Toward that end, IFPRI updated and expanded the data by conducting its own surveys of the ICRISAT villages and by working with INRAN on similar surveys in other areas. The resulting data will be quite detailed and of quite high quality. Consumption results from the IFPRI/INRAN study are expected in 1992. The data have been computerized, and are available from IFPRI. The original ICRISAT survey data should be available from the ICRISAT Center in Niger.

In addition to the specific data collection efforts described in this section, many individual donor projects collect and maintain small databases. Such data is be necessary for project evaluation, and covers only the specific data necessary for that purpose in the specific project zones.

This chapter has focused specifically on sources of agriculture production data. Sources of related data, such as input use, weather, and natural resources, are discussed in Chapter 5. Chapter 3 describes the primary sources of livestock production and marketing data in Niger.

3. LIVESTOCK DATA AND MARKETING INFORMATION SYSTEMS

This chapter describes two **concurrent** systems of livestock data collection, both of which are undertaken by MAG/EL. The earlier or "classic" system originated in the 1940s and continues much in its original form. The "new" system, which began to produce data in 1988, evolved out of several livestock development projects operated by donors during the 1980s.

3.1 The Classic System[19]

Niger's "classic" system of livestock market monitoring provides weekly observations on each of the country's approximately 600 livestock markets. One market agent is responsible for two to four markets, as well as related slaughterhouses, veterinary clinics, and customs offices. This survey (the *fiches* for which are included in Annex B) consists of two parts: animal health, and production/marketing of animal products.

The animal health survey records morbidity and mortality, as well as vaccination stocks and use, numbers of animals treated, and immunizations. Each of these variables is recorded according to species.

The animal product production and marketing survey is broader and more involved. This questionnaire covers rainfall data, stocks and consumption of feed, numbers slaughtered (by breed, sex, and species)[20], price per head of live animals, slaughterhouse prices by quarter and kilogram, and carcass weight. In addition, this survey records information on skins and hides (quantity, weight, and destination), herd movements, exports and imports of live animals and meats, the market prices of millet, sorghum, rice and corn. The cereals price collection activity is discussed in Chapter 4.

The livestock marketing agents pass the *fiches* from their weekly observations to the *arrondissement* livestock service, where the data is gleaned from the *fiches* and summarized in a monthly report. These reports are sent to the departmental livestock service, where they are, in turn, synthesized into monthly departmental livestock reports. Thus, the information becomes increasingly aggregated as it passes toward the national level, where the departmental reports are synthesized into monthly and annual livestock reports. One should note, however, that the most recent annual livestock activity report was published in 1987.[21]

The classic system yields a tremendous amount of historical data in Niger's livestock markets. Yet, most of this information is not easily accessible. The original *fiches* are preserved in offices at the *arrondissement* level. In addition, the monthly reports produced at each level are also retained at those levels for archival purposes. Departmental and national reports are retained at MAG/EL in Niamey. The FEWS project has recently spent one year cleaning and entering data from the classic system into a computerized database. Thus, classic system information dating from 1968 is accessible through FEWS.

Reporting procedures in the classic system are not computerized. Typically, three months may elapse from the time the data were originally collected until the national-level monthly report emerges from MAG/EL in Niamey. Analysis of this data is limited to the calculation of averages. Moreover, the delay in its transmission significantly limits its potential contributions to the policy process.

Quality checks in this system are post hoc, focusing primarily on whether there are errors in calculating the averages for different variables. Such errors are caught if they result in anomalous data. Yet, *there is no system available for confirming the validity of the data actually recorded by agents in the markets.* Thus, users of this data have little choice but to trust it, though they may rightly be skeptical of its accuracy.

The primary reason for this concern arises from the incentives facing the market agents. As noted above, each agent is responsible for two to four markets, one of which is typically his home base. The agent is thus required to travel what might be a significant distance each week to cover his markets. Until 1984, the Ministry compensated agents for their travel expenses; since that time, agents have had to travel at their own expense. Interviews at both the national and *arrondissement* level suggested that this is a powerful disincentive for agents to travel regularly to all their assigned markets, although there is no disincentive to filling out the *fiches* for those markets anyway.

A more subtle cause for concern about the accuracy of data collected in the classic system has to do with whether the agents actually arrive at the start of the market day and stay until its conclusion. If, for example, sales prices for cattle vary systematically over the course of a day (perhaps prices fall before closing), the resulting price data will be biased. A lack of resources at the ministerial level prevents careful (or perhaps any) monitoring of agents' activities. Thus, there is no post hoc method to verify the validity of the raw data. Moreover, many animal market transactions occur the day *after* the official market day. These transactions are recorded by neither the classic system nor the "new" system described below.

One might also question whether the types of data collected under the classic system are useful. For instance, prices per head mean little in the absence of estimates of the weight of the animals and descriptions of other features, such as age and health, that affect value. Thus, collecting this information for 15 different categories of animals may be a poor allocation of resources.[22] The "new" system attempts to redress some of these problems by seeking more specific information about a narrower range of animals.

3.2 The "New" Livestock Market Information System[23]

The "new" livestock marketing information system evolved from several donor-sponsored efforts during the 1980s, including the World Bank's *Projet Elevage Niger Centre-Est* (PENCE), the CILSS-funded *Diagnostic Permanent* (DIAPER), and USAID's Niger Integrated Livestock Production Project (NILPP) Livestock Marketing Service. USAID,

through ASDG, supported the development of this new livestock marketing information system (LMIS).

The new system is more modest in its geographic depth, covering 42 markets nationally. These markets were non-randomly selected to include the most important examples in each department. Market selection was also geared to ensure accessibility by monitors, ease of data transmission, coverage of a full range of species, and inclusion of major consumption markets.

Though more limited in its geographic depth, the new system attempts to gather more detailed information on certain key variables. One shortcoming of the classic system is that it does not provide a basis for calculating unit prices of live animals, since animal weights are not collected. The new system includes estimates of live animal weights (in kilograms) for animals sold. Table 3.1 lists the other specific variables collected under the new system.

The market agents pass their *fiches* to the *arrondissement*-level office, where the data is reviewed for obvious inconsistencies and staff hand calculate averages for the relevant data. The *Chef de Service d'Arrondissement* collects these weekly calculations and synthesizes them into monthly reports. These reports are circulated at the local level and passed on, along with the original *fiches*, to the departmental level.

Data processing occurs at the departmental level (with computers supplied through ASDG). The departmental offices also undertake some preliminary analysis of the data, such as constructing time series of monthly averages and comparing average monthly prices to the same month the previous year. These analyses are published in monthly departmental reports, and distributed to the local Chamber of Commerce, the regional Ministry of Economic Promotion, local political administrators (*préfets, sous-préfets*, and mayors), the Departmental *Douane*, and *Arrondissement*-level departments of livestock and agriculture. The monthly regional reports are also sent to MAG/EL in Niamey, along with the diskettes containing the processed regional data.

The central office synthesizes the monthly departmental reports into monthly national reports, as well as a statistical annual summary. The reports contain essentially the same analyses as are done at the departmental level. In addition, analysts in Niamey calculate terms of trade between cereals and meat (e.g. the rate at which one can exchange meat for cereal on the market).[24] During this process, ministry analysts review the data for anomalies, and seek explanations from the departmental chief when necessary.

Computerization of the new system allows much more timely dissemination of market information than is possible under the old system. Typically, national-level monthly reports are published by the end of the month after the transactions occurred.

Table 3.1
Variables Included in the New Livestock Marketing Information System

Market Data Sheet

- cereals prices and weights (wholesale and retail)
- numbers of animals offered for sale and number sold (for ruminants and donkeys)
- prices for individual hides and skins
- price and volume of fermented milk (retail)
- egg prices (retail)
- black market Naira/CFA exchange rate
- prices and weights for a variety of commercialized fodder

For 20 animals (covering all four ruminant species, donkeys, and poultry:

- code indicating species, sex, reproductive status
- age
- breed (cattle only)
- estimation of nutritional status, health, and skin quality
- price (exclusive of intermediary's fees)
- estimated weight
- functional source and destination
- geographic source and destination

Slaughterhouse Data Sheet

- code indicating species, sex, reproductive status
- age
- breed (cattle only)
- estimation of nutritional status, health, and skin quality
- price (exclusive of intermediary's fees)
- liveweight (estimates for large ruminants, weighed for most small animals)
- carcass weight

Source: Gray and Cook (1988), pp 7-8

The new system also provides for the rapid dissemination of a limited amount of information from 11 selected markets. Local agents telephone bi-weekly observations directly to Niamey, where the information is broadcast weekly by radio. These broadcasts started in 1990. The data collected in these sentinel markets includes numbers of animals presented and sold (by species), average unit prices of animals, cereals, skins and hides, and livestock feed.

As in the classic system, supervision of market agents is a problem. Yet, officials in the livestock statistics service are more confident of the validity of data collected under the new system, largely because each agent is responsible for only one market, and they are provided with motorcycles, to motivate them and to ensure their market access. Thus, it is much more likely under the new system that market agents actually attend their assigned

markets. It is also much more manageable to supervise data collection in 42 markets, than in the 600 markets ostensibly followed under the classic system.

The most troublesome potential source of measurement error under this system is the estimation of liveweights. It is not practical for agents to weigh the animals. Thus, the agents are trained to estimate liveweights by sight, although there is no way to verify their estimates. Thus, the unit price calculations for live animals are questionable. Ministry officials express the hope that liveweight estimates are accurate to within 15 percent; there is no way to verify the estimates, however.

MAG/EL collects data from the new system in a computerized data base, which contains the data listed above since 1988. This data is available down to a departmental level of disaggregation.

In general, the new system for livestock market data collection and reporting appears to work fairly well. Most observers believe the data is reasonably accurate, and the reporting has been timely. It is also important to note that the decentralization of data processing to the regional level makes a significant difference in terms of local dissemination of livestock marketing data. The decentralization makes it feasible to disseminate market information at a level of disaggregation that is potentially useful at the local level.[25] This stands in contrast to the current system for collecting and reporting agricultural data.

Livestock production and price data are collected in the same survey, but cereal price data are collected are collected through an entirely different survey mechanism. That mechanism is the subject of the following chapter.

4. AGRICULTURAL PRICE AND MARKETING DATA COLLECTION

Recent agricultural price data seems to be of reasonable quality, although it too comes ridden with caveats. Most people interviewed had significantly more confidence in the agricultural price data than they expressed for the production data. This chapter reviews the primary sources of agricultural price and marketing data. Relevant issues include survey methodology, reporting and dissemination of data, and data use.

4.1 Système d'Information sur le Marché des Céréales (SIM)/Office des Produits Vivriers du Niger (OPVN)

OPVN is currently the most important source of agricultural price and marketing data in Niger. OPVN implements the *Système d'Information sur les Marchés* (SIM). SIM gathers price information on six cereal commodities and on cowpeas.[26] Agents gather this information in 48 markets spread across Niger every two weeks. Within these markets, SIM's data collection methodology calls for price collection in four distinct types of markets (e.g. at four different marketing levels): 1) farmgate, 2) retail (consumer prices), 3) wholesale, and 4) border trade with Nigeria. In fact, SIM's border trade monitoring is not yet operational.

The practice of following transactions at different market levels began in 1989, prior to which time OPVN collected only retail prices (and in a largely different sample of 44 markets). In principle, this degree of specificity in market price collection is necessary in order to track marketing margins. The analysis of such margins is critical to diagnosing the efficiency of agricultural marketing, which is, in turn, critical to the development of the entire agricultural sector.

The sampling procedure for selecting these markets is non-random. SIM selects sites to represent each department. The changes in SIM's market sample, as well as the expansion of its efforts to distinguish between prices at different market levels, was the result of a new program of German (GTZ) assistance. Earlier, OPVN received FAO assistance, although price collection at that time was limited to official policy prices.

Under this improved system, the market agents mail their *fiches* directly to the central OPVN office in Niamey, as well as to the Departmental OPVN office. Computerized data processing came to OPVN in 1989. SIM thus processes the price data at its central office in Niamey, calculates averages where appropriate, and compiles the numbers into two publications: a bi-weekly price update, and a monthly report. These publications report prices at the farmgate, wholesale, and retail levels for a given week, the previous week, and the same week one year earlier. In addition to this market price data, SIM collects market prices for selected commodities at markets in northern Nigeria.

In practice, data are often missing at one or more of these market levels--most often at the farmgate level. This makes it impossible to analyze marketing margins. In fact, there is virtually no analysis of the price data that SIM collects and publishes in great volume. One expatriate agricultural economist is based at SIM. Yet, he has been unable to undertake any in-depth analysis of price data, and explains that nearly all his time must be devoted to checking data quality. OPVN is currently searching for a local counterpart for this economist, in the hope of undertaking more systematic analysis of its own data.

Since late 1989, SIM has maintained a computerized database in which all this data is stored. Earlier data (for retail prices only), dating back to OPVN's establishment in 1985 exist on the original *fiches* that were sent to Niamey from around the country. Yet, this information is not easily accessible, and, due to differences in collection methods, market level of observation, and changes in the sample, one could not easily compile these data into a consistent time series of cereal prices.

Local users (such as FEWS, INRAN, and CRED) consider the quality of the price data which is collected to be reasonably reliable. In some instances, baseline surveys of INRAN research sites have permitted loose corroboration of the OPVN price data.[27]

From a methodological perspective, the most problematic aspect of OPVN's price collection activity is that price data are recorded every two weeks, but products are weighed only every six weeks. The problem arises from the fact that quantities in the markets are measured in local units, known as TIA. For reporting purposes TIA has to be converted to kilograms, and the general presumption (at MAG/EL, for example) is that 40 TIA always equals 5 kilograms. To its credit, OPVN has demonstrated that the TIA/kg ratio in fact varies across time and place.

If one mistakenly assumed, *as the livestock service does in its cereal price collection*, that the TIA/kg ratio was constant, then variations in calculated kilogram prices could not be distinguished from variations in the TIA/kg ratio. Mathematically, it must be the case that:

$$\frac{CFA}{TIA} \times \frac{TIA}{Kg} \equiv \frac{CFA}{Kg}$$

If TIA/kg remains constant, than the CFA/kg price will vary purely as a function of changes in recorded CFA/TIA prices. Yet, unrecorded changes in TIA/kg will either magnify or counter-balance recorded changes in CFA/TIA observations in the market, depending on the direction of change in the ratio. Thus, the assumption of a constant TIA/kg ratio incorporated into the livestock service cereal price survey invalidates those data.

OPVN partially avoids this measurement error by weighing TIA at the market. Yet, OPVN does not completely avoid this problem since it records prices three times as often as it updates the TIA/kg ratio used to calculate CFA/kg.

A recent evaluation of SIM noted several other shortcomings.[28] Although the evaluation found that OPVN's retail price data was acceptable, the definition of transactions at the wholesale level was not sufficiently precise. In addition, the evaluation found difference in the collection methodologies applied at different markets. For example, some agents went outside markets to count loaded vehicles while others did not. The evaluation also faulted OPVN's verification procedures during data entry.

The principal problem cited in the evaluation was that the quantity of information collected far exceeded the quantity entered into the computerized database. Some of the uncomputerized data are processed manually, while some remains unprocessed. This finding is consistent with a more general observation about agricultural data in Niger: *the capacity to collect data significantly exceeds the ability to organize and analyze it.*

One final problem noted with regard to SIM was that the dissemination of price information is too slow. For instance, observations made in February are not ready for publication until the end of June, and the publication itself does not come out until some time in July.[29]

Despite these caveats, however, that evaluation, as well as other current users of SIM/OPVN cereals price data, consider the existence and regularity of such a large-scale price collection activity to be a success in the Nigerien context. Indeed, the FEWS representative commented that these are the best data in Niger (for her purposes).[30]

In addition to its cereals price survey, OPVN follows the relationship between prices and geographic commodity flows around the country. This information is based on survey information regarding the origin and destination of marketed produce, as well as monthly surveys of traders regarding their places of purchase and sale. This information permits OPVN to assess the degree of cereals market integration, which is pertinent since it may help explain the relationship between cereals production in a given region and local food prices. The greater the degree of market integration, the less local prices depend on the quality of local production.

It is important to note that this commodity flow information does not include data on total quantities moving between regions. SIM's sample can only be used to infer prices and directions of internal trade.

There has been little such analysis actually undertaken to date, and expatriates have done such analysis as there is.[31] Yet, this is a worthwhile pursuit for OPVN. Geographic illustrations of commodity market flows are produced fairly regularly, which will be quite

useful to any future agricultural marketing activities being considered by USAID or other donors. CRED's assessment was that this data is quite good.[32]

4.2 Other Cereals Market Price Collection Activities

Several other efforts at cereals market price collection co-exist with SIM/OPVN. These efforts, which are quite minor by comparison, include surveys by MAG/EL and the Ministry of Plan.[33] The Ministry of Plan, for example, maintains a small cadre of agents who regularly observe prices of a large range of products, including agricultural commodities, in a small number of markets nationwide. These data are sent directly to the *Direction de la Statistique et de la Demographie* at the Ministry of Plan, where a series dating back to 1983 exists on diskette. This series is not published, and the specific methodology pertaining to cereal price collection is undocumented (and therefore unscrutinized). For its calculation of large aggregates relating to market prices, the Ministry of Plan uses OPVN data.

The Ministry of Plan also uses these agents to meet needs for specific information relating to project evaluation, or for access to more timely price information than is normally available. On occasion, the Ministry uses these agents to verify other sources of price data.

The most significant price survey undertaken by the Ministry of Plan is its survey of retail markets in Niamey. This is a large-scale regular activity, which the Ministry uses to calculate consumer price indices for urban consumers. This information is available at the *Direction des Statistiques* at the Ministry of Plan.[34]

CRED also undertakes regular surveys of retail prices in Niamey food markets. A CRED market agent records retail prices for red and white maize, millet, sorghum, and cowpeas, as well as local and imported rice. CRED maintains computer files of these data from 1987 to the present.

MAG/EL also undertakes some collection of cereals market prices nationally; however, it is not clear to what extent this occurs in addition to the cereals price collection described above in the context of the livestock surveys. In any event, MAG/EL has not published any other series of cereal market prices.

This gap is particularly serious with regard to farmgate prices. Prior to 1989, when OPVN began its efforts to gather farmgate prices, the only farmgate price data released by the Ministry of Agriculture were official policy (support) prices. These prices are unlikely to bear much resemblance to actual farmgate prices. Moreover, since the liberalization of cereals markets in 1988/89, there have been no official prices to report.

5. OTHER AGRICULTURE-RELATED DATA COLLECTION

The preceding three chapters have described the primary sources of data pertaining to agricultural production, livestock, and prices. This chapter concludes the discussion of data collection by surveying various other sources of agriculture-related data in Niger. The types of data considered in this chapter include agricultural trade statistics, natural resources (water, forests, and soil), meteorological, input utilization, pest loss, biomass, demographic, and private sector agricultural services. The treatment of each of these categories will be brief, and is intended to provide an overview of data availability and quality.

5.1 Agricultural Trade Statistics

Imports and exports play an important role in Niger's agricultural economy, and are directly relevant to food needs assessment. Unfortunately, Niger's agricultural trade statistics are generally considered highly unreliable, mainly because the long and highly porous border between Niger and Nigeria prevents trade monitoring.

The Douane collects official trade statistics, based on officially registered trade flows. Since it is widely known that many, if not most, commodities crossing Niger's border with Nigeria are not officially registered, one must approach the agricultural and agro-pastoral trade figures with the presumption that the data for the most part does not reflect the true situation. Officials at the Ministry of Economic Promotion and the Chamber of Commerce readily acknowledge their lack of confidence in the official trade statistics.[35]

The *Douane* is in the process of computerizing its data collection and management system and has partially installed the SYNDONIA software developed by UNCTAD to monitor trade flows. Presently, the major frontier posts have computerized their operations, although donor support was exhausted before the process was completed. Thus, the small frontier posts continue to operate manually, bringing their *fiches* to the larger posts for entry into the database. Prior to the present efforts to computerize the system, all trade data was compiled manually from the *fiches* filled out at border posts.

This process introduces opportunities for several sources of error beyond the fact that the border posts do not even see most of what crosses the border. For instance, whether or not a given shipment gets recorded is up to the discretion of the customs agent at the border. Moreover, most border posts do not have the facilities necessary to weigh shipments crossing the border. Thus, in many instances, the quantities recorded reflect the customs agents' estimates.

For those transfers which are recorded, the *fiches* are sent to the departmental *Douane* office for compilation into departmental trade reports. These reports, along with the original *fiches* are then sent to the central customs office in Niamey, from which the official trade statistics emerge several months later. Indeed, it takes much longer for the trade data to be

officially released by the GON (which is done through the Ministry of Plan). In the Ministry of Plan's 1991 edition of national statistics, the most recent trade statistics are from 1986.

The quality of agricultural and agro-pastoral trade statistics may vary with the nature of the commodity. For instance, most onion exports from Niger travel by truck and go to other CFA zone countries, not to Nigeria. The data for onion exports may thus be more reliable than for some other commodities.[36] Livestock, on the other hand, can walk and frequently does so in both directions across the border with Nigeria. Cowpeas are similarly subject to unofficial export, since they are grown predominantly in the south, and are thought to be exported in numerous small shipments.

Fertilizer is also thought to cross the border (into Niger) in large quantities, despite the illegality of fertilizer exports from Nigeria.[37] Since it is illegal to export fertilizer from Nigeria, it is unlikely that much of this trade enters through official channels.

There is also reason to question the accuracy with which the official trade statistics are tabulated. CRED, through the ASDG program, undertook a study of agricultural and agro-pastoral trade. Researchers spent 18 months in the basement of the central *Douane* office assiduously computerizing all the *fiches* from 1981 to 1988 sent in from the frontier posts and stored in Niamey.

Comparison of the CRED agricultural trade statistics and the official statistics shows little connection between the two. Figures 5.1 through 5.3 compare the CRED export statistics with official statistics for exports of cowpeas, cattle, and onions, respectively. Neither of these studies claims to include unofficial trade flows, nor is there any reason to presume that one set of these numbers better reflects reality than the other.

Figure 5.1 shows a large divergence between the two sets of figures for cowpea exports. The fact that the official figures are significantly and uniformly higher than CRED's figures might lead one to suspect that many of the *fiches* were simply missing from CRED's search. The cause of the discrepancy is unknown; yet, CRED's figure for cowpea exports for 1986 exceeds the official number. Moreover, in the case of cattle exports, illustrated in Figure 5.2, the CRED figures are significantly higher than the official trade statistics. In the case of onion exports, the numbers also differ (and cross in 1986), although the correlation between the two sets appears to be much greater.

The point of this illustration is not to say that one set of numbers is correct while the other is wrong. Yet, the example does provide ample reason to be skeptical of Niger's trade data if two rigorous efforts to compile the same data produce such divergent results.

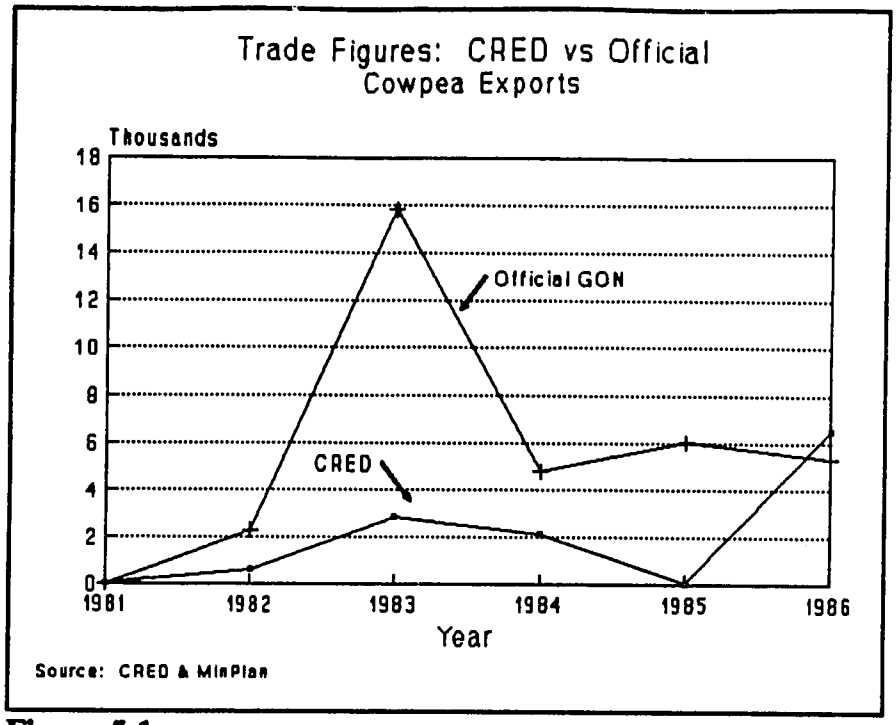

Figure 5.1

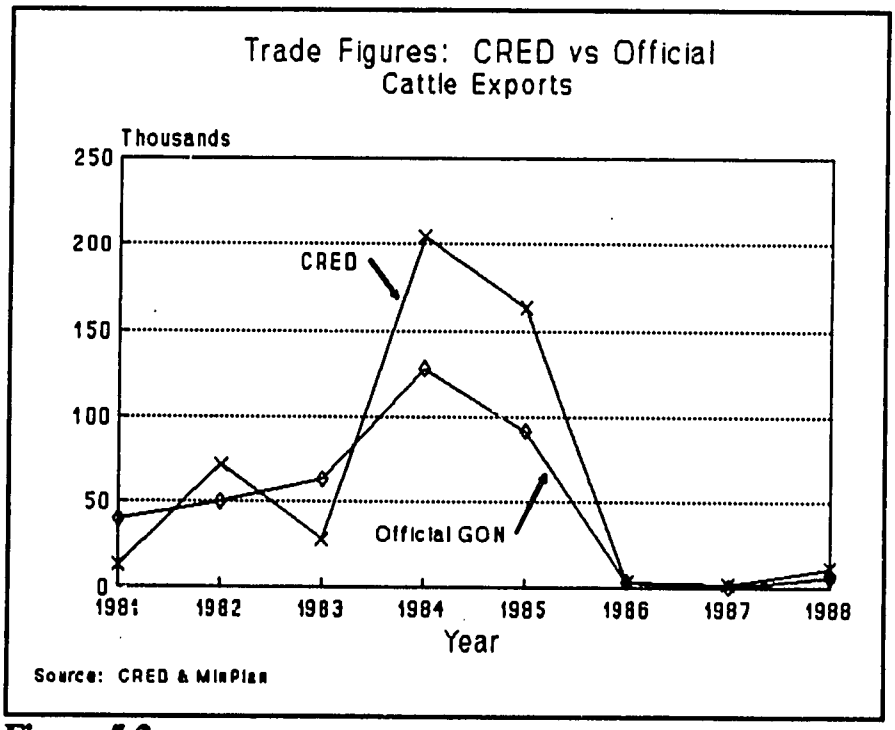

Figure 5.2

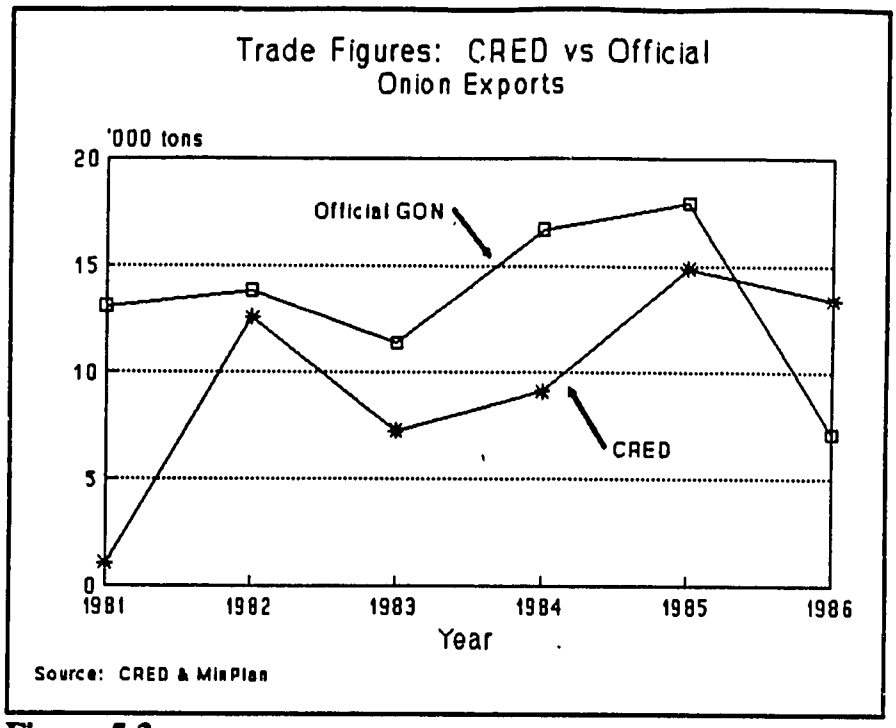

Figure 5.3

As is the case with other national-level official statistics, however, no alternative sources of information are available. Thus, flawed as they are, everyone who works with trade statistics is obliged to use the official data.

5.2 Natural Resource Data Sources

Natural resource data describes the country's resources in water, forests, and soil. These areas are the domain of the Ministry of Hydrology and Environment (MHE).[38] With regard to water, the MHE maintains a complete inventory of the country's resources, which is reputed to be among the highest quality data sources in Niger.[39] The data is collected by departmental-level agents and processed at the departmental level. Indeed, each department has a hydrology office, which maintains a computerized database of water resources in that region.

The central MHE office maintains the national inventory in a database developed with 10 years of French and UNDP support. This database includes information on groundwater aquifers, surface water, and river flows. MHE also has the capability to produce maps of the country's water resources.

In addition to collecting and maintaining these data on water sources, MHE undertakes village-level surveys to determine water needs for human consumption. This survey

started in 1984, and is also managed at the departmental level. The information is computerized and maintained in a database at each department but is not sent to Niamey. Thus, there is no centralized database for human water consumption needs.

Forest and soil information falls within the environment branch of MHE. The data collected pertains to the division of land use among forest, pasture, and cropland. Forest surface areas are measured by department-level agents. The MHE also maintains data on areas of managed forest and volumes of wood production per year. The Ministry also produces maps of land use based on this database.

The quality of the forest resource data is questionable. Forestry data collection by MHE is divided among numerous small and irregularly implemented surveys. Surveys may provide the basis to estimate wood production in a given year, but there is no means to verify that estimate. For a number of years after making an estimate, the Ministry estimates wood production by projecting its base number upward by the rate of population growth. This same system is used for a variety of data collected sporadically by MHE. It is not a good sign that the most recent activities report published for Environment came out in 1987 and described activities ending in 1985.

In addition to the national level data collected by MHE, various projects have collected forestry data for baseline and monitoring purposes. For example, USAID's Forestry and Land Use Planning Project (FLUP) collected data in its work zones to monitor progress on forest management. These data cover the period from 1986 to 1991 and include area under the management plan, area under active management, volume of wood cut, volume of hay cut, number of woodcutters, and revenue from sales of wood, hay, and other products. These data are of mixed quality and exist only for FLUP project sites. The data have been computerized and are available at USAID/Niamey.

MHE also maintains records on irrigated perimeters, with data that refer primarily to local rice production.

5.3 Meteorological Data

Météorologie Nationale collects meteorological data relating to rainfall, air and ground temperature, humidity, and evaporation. Users say these data are reliable and reported on a timely basis.[40] *Météo* currently maintains approximately 150 weather posts around the country. Approximately 25 additional posts exist but were not in operation in 1989.[41] These posts vary in size and capacity. While all report rainfall, only some are equipped to collect other types of meteorological data. Twenty-three of these stations have been operating since at least the 1940s (although not all of those have been in continuous operation). Thus, the time series available, at least for rainfall, is quite long and reliable. Météo also regularly produces pluviometric maps. In addition, this pluviometric data receives wide and regular dissemination by radio and television.

Additional meteorological data is generated by satellite and relayed to AGRHYMET. This information includes meteostat images of cloud mask and rainfall. As described in the following chapter, this meteorological data is maintained in a database at AGRHYMET.

5.4 Agricultural Inputs Consumption Data

This section considers sources of information on the major purchased agricultural inputs: fertilizer, improved seeds, herbicides, and pesticides.

5.4.1 Fertilizer Use

Prior to the recent move to privatize fertilizer trade, the parastatal *Centrale d'Approvisionnement* (CA) held the official monopoly on fertilizer supply. Official statistics on fertilizer use are, in reality, nothing more than descriptions of the quantities of fertilizer delivered by the CA. In 1985, this accounted for three-fourths of the fertilizer market (with one-quarter being in private hands).[42] Although the supply data for the period when the CA carried most of the market may be a reasonable proxy for consumption, it does not indicate whether the fertilizer was delivered in time to be applied, nor to what crops it was applied.

By 1991, the CA's share of total fertilizer use had dropped to one-quarter of the estimated total market. Yet the CA delivery data remains the only source of data on fertilizer "consumption." The official fertilizer statistics consequently suggest steep declines in fertilizer use during the period in which the CA has been phased out of the market. This data is unlikely to reflect much of the reality of fertilizer use in Niger.

Some additional information on fertilizer consumption is available from ONAHA surveys of 30 rice cooperatives on irrigated perimeters conducted in 1989. CRED tabulated these survey results as part of its analysis of input policy reform, and repeated the ONAHA survey with an expanded sample size. In addition, CRED conducted interviews with fertilizer traders along the Zinder-Maradi-Konni axis in 1986 and 1989. While these surveys are not exhaustive, they are undoubtedly the best data available on fertilizer use in Niger.

5.4.2 Improved Seeds

MAG/EL undertook three annual surveys of the use of previously released improved seeds. CILSS executed these surveys between 1988 and 1990, and USAID financed them. That support has been terminated due to problems with a seeds projects planned by ASDG. Thus, data on improved seed use exists for only 1988 and 1989; included is information on type of seed, location, origin, price, and length of use. There is no current nationwide collection of information on the consumption of improved seed.

5.4.3 Pesticide Use

The Plant Protection Division of MAG/EL oversees public distribution of pesticides. The Ministry uses a portion of this total directly in its own interventions and gives the rest to farmers free of charge. Farmers may also purchase pesticides at local cooperatives or through private sources (often in Nigeria). The cooperatives themselves acquire pesticides on the private market.

The Plant Protection Division maintains close records of the quantities and types of pesticides that pass through its network. The division's agents monitor pesticide stocks around the country every 15 days, and send that information to Niamey (by fax, where available). For the past two years, this data has been entered into a computerized database, implemented with Canadian assistance. This data, however, describes only MAG/EL pesticide stocks. To get a better idea of total pesticide use, one would have to add these figures to those available from the cooperatives' union (URC).

5.5 Pest Loss Data

The MAG/EL Plant Protection Division also receives German (GTZ) support for an annual pest loss survey. This survey pertains only to millet in southern Niger. Survey agents visit three randomly selected fields per village in three villages per department, where they interview farmers and take sample frame observations.

This survey began in 1988, and the results are maintained in a computerized database at the Division of Plant Protection.

5.6 Irrigated Perimeters

ONAHA regularly collects information relating to irrigated perimeters in Niger. Using its own agents, ONAHA surveys a random sample of irrigated perimeters at the end of each growing season (of which there are two per year). The types of data collected include irrigable surface area, area planted (by crop), yield, production, and farmgate price. The principal product produced under irrigated cultivation is rice, although there is also irrigated production of onions, maize, and a small quantity of wheat.

An ONAHA official expressed the opinion that these data are of reasonably high quality for the past four years, when their agents began using sample frames to estimate yield.[43] ONAHA has data dating from 1981, though estimates for the earlier years were made exclusively through farmer interviews. ONAHA price data for the past two years may also be useful. They attempt, through producer interviews, to gather farmgate price data. Prior to the recent liberalization of cereals markets, ONAHA recorded only official support prices.

ONAHA publishes the results of its surveys in bi-annual reports. Although they are computerized, these data are not organized into a database, as such.

5.7 Biomass Production Data

MAG/EL, through the livestock service, surveys biomass production at 36 ground truth sites across the southern extreme of the country. Two specially-trained agents are employed at the departmental level (in each relevant department) to implement this survey. Sampling for this survey is a two-stage random process, and agents are supposed to make three observations in the rainy season and three in the dry season.

The variables collected in this survey describe total production of biomass, composition by species, and rate of consumption of biomass material at the sample sites. Agents make both visual estimates and 10 percent sample cuts (to calibrate their visual estimates). The small size of this activity make management and control procedures much more feasible than in the harvest survey. MAG/EL randomly selects zones for verification of the biomass survey data and has found few problems.

Results of the biomass survey are used to model the relationship between biomass production and the greenness indicators collected by AGRHYMET. The objective of this modelling effort is to be able to predict biomass production using remote sensing data. MAG/EL also transfers the biomass results to AGRHYMET for use in its modelling activities.

5.8 1988 Census

The GON has recently published the results of its 1988 census, based on a sample of 10 percent of all households in Niger. The census is tangentially related to agriculture, particularly since the sampling methodology for the annual harvest survey is stratified by population. In addition, since the vast majority of Niger's population is rural, population growth may provide a good proxy for changes in agricultural labor supply. Food needs assessment is also clearly a direct function of changes in population characteristics. With SAP support, the census results are being refined to provide *arrondissement*-level population growth rates.

The census is divided into seven parts: 1) spatial distribution and migration, 2) household characteristics, 3) demographic and social characteristics, 4) education levels, 5) economic characteristics of households, 6) fertility and infant mortality, and 7) housing characteristics. The census, published in two volumes, is available through the Ministry of Plan.

5.9 Private Sector Services and Stocks

The Chamber of Commerce (Centre Nigerien) has undertaken two surveys of private sector activities relevant to agriculture. One survey follows cereal stocks held by large wholesalers; the other is a census of private businesses in Niamey.

The private stock survey is implemented by local Chambers of Commerce. Every two weeks, agents visit the large wholesalers in their region and record the quantities of cereals stocks held.[44] At least 15 traders are surveyed in each department, as well as in COPRO. The total number of observations is approximately 100 nationally.

The Chamber of Commerce has conducted this survey since 1986. The data is not computerized, but the *fiches* are retained in Niamey. SAP is beginning the work of computerizing them. The Chamber of Commerce started the survey in order to assess food needs. In addition, this survey is currently used as a rough check on MAG/EL production statistics.[45] This application, however, is not highly accurate.

In addition, the Chamber of Commerce in 1987 performed a census of the 400 officially registered private businesses in Niamey. The survey gathered data on the activities the company engages in, its domestic and international sales, and the name, address, and telephone number of the proprietor. The enterprises are categorized as agricultural, commercial, industrial, or service.

This data has not been analyzed, and it has not been entered into a computerized database. It was to be published in the Chamber of Commerce's annual report, but no report has been published since 1986. The Chamber is currently undertaking a similar survey, although this time sales data is not being recorded. Manual sorts of this data, which could be relevant to future studies of agricultural marketing, are possible.

In addition to these activities, the Chamber of Commerce follows port entries in coastal countries and the transport of commodities to and through Niger. This information, published in bi-monthly updates, can be a useful supplement to the official trade data.

Chapters 2 through 5 of this study have reviewed in detail the sources of agriculture-related data in Niger. Many of these data have been collected in various combinations in formal databases. The following chapter provides a guide to the major efforts in this domain.

6. EXISTING AGRICULTURAL DATABASES: CONTENTS, SOURCES, AND ACCESSIBILITY

The preceding chapters have described at length the origins of available agricultural statistics in Niger. One central theme to emerge from that discussion is that the range of sources is quite limited for the major areas of concern. National-level data for the production, area, and yield of major foodcrops and for the production and marketing of livestock products is the exclusive domain of MAG/EL. Thus, while statistics for these variables may reside in numerous databases, they are the same statistics in each case.

Several organizations in Niger have collected available statistics into formal databases. In every case, these databases contain the official statistics published by the GON through the *Direction de la Statistique et de la Demographie* of the Ministry of Plan. This chapter provides an overview of the main databases relevant to agriculture that exist in different repositories in Niger, describing for each the general contents, sources of data, and accessibility. This chapter will also note data dissemination efforts by various organizations.

6.1 MAG/EL Databases

The Ministry of Agriculture and Livestock has no centralized database per se. There are separate statistical services within the directorates of agriculture and livestock. In addition, the Division of Studies and Programming (DEP) has an office that coordinates the two statistical services.

The statistical services of agriculture and livestock maintain their own data. Although their data for recent years is computerized, it has not been organized into a formal database. The information stored in these directorates is essentially identical to what is published in the statistical annuals of the divisions of agriculture and livestock.[46] Table 6.1 lists the topics covered in the 1989 statistical annual for Agriculture, which is the most recent volume published.[47]

Much of this same information is contained in an annual document produced by MAG/EL recording the annual meeting of agricultural cadres held in Niamey in March. This meeting yields a synthesis document that reviews the previous agricultural season. This document includes several categories of information that are not published in the statistical annual, including training progress, extension reports, the food balance, marketing reviews, stock situations, and MAG/EL property updates and financial situation. This document also lists all data collection activities undertaken by the Ministry, which is included here in Annex C. This synthesis document is internal to MAG/EL, and the information in this document that is not in the statistical annual is not computerized.

Table 6.1 – Contents of 1989 Agriculture Statistical Annual

Agricultural Statistics

- characteristics of production units (*exploitations*)
- evolution of the agricultural season
- rainfall
- inventory of dry-season production survey sites
- improved seeds needs
- use of improved seeds
- use of agricultural materials
- transfer price of materials and inputs
- plant health situation
- distribution of areas by department
- evolution of the dry-season campaign
- results of the dry season campaign
- production on irrigated perimeters
- results of the rainy season campaign
- evolution of area, yield, and production (1979-89)

Environmental Statistics

- fish and aquaculture
- tree crops
- environmental protection

Evolution of Areas, Yields, and Production

- by *arrondissement*
- national statistics (tubers, sugarcane, irrigated rice)

Source: MAG/EL (1990)

6.2 BASDONAG

Also within MAG/EL, CRED has gathered a large quantity of computerized agricultural data into a collection known as BASDONAG. The name (*Base des Données Agricoles*) is somewhat misleading. BASDONAG is not a unified database, but a loose collection of 158 smaller database files and statistical tables. Indeed, BASDONAG was never intended to be a comprehensive integrated database, and evolved out of a penchant for collecting data as found in existing computer files. A list of these files, brief descriptions of the contents of each, and categorization by key word are included as Annex D.

BASDONAG contains a tremendous amount of information on Niger's agricultural sector. The files are divided into 29 categories according to theme (see Annex D for a list of themes), and can be searched by two levels of key words at MAG/EL/DEP, where the

system is based. CRED has made BASDONAG widely available on diskettes, free of charge.

BASDONAG's strength lies in its breadth of coverage. It contains some information on virtually every aspect of agriculture in Niger. BASDONAG's principal weakness lies in its accessibility to users. As noted above, BASDONAG is not a unified database. Thus, users are confronted with a long list of unrelated computer files, each of which must be accessed separately.

Many individual files are somewhat cryptic: sources of the data are rarely identified, and variables are not often defined. A recent informal internal review by USAID also faulted BASDONAG for including redundant files, files with data that contradict data in other files, and inconsistencies between the printed list of files and the diskettes.[48]

In fairness to CRED, however, it should be noted that the files included in BASDONAG were inherited from a wide range of other sources, rather than created by CRED for inclusion in a database. Thus, the specific information regarding the sources of data presented, data definitions, etc., may simply be unavailable in most cases. In fact, the current version of BASDONAG reflects substantial editing and weeding out of extraneous and redundant files. The current CRED Chief of Party has whittled BASDONAG down from 12 megabytes to approximately three megabytes of information.

6.3 Ministry of Plan Socioeconomic Database

With assistance from USAID through CRED, the Ministry of Plan (*Direction des Programmes et du Plan*) is currently constructing a general socioeconomic database. The protocol for this database, including a list of variables, administrative level at which the variables are available, and source of the data, is attached as Annex E. In addition to agriculture, the main categories of information to be included in the database include: demographics, infrastructure, weather, mineral production, energy, transportation and commerce, water resources, urban data, health, education, animal resources, and forests and fauna.

Subheads within the heading of agriculture include area cultivated, production credit, training, agricultural materials, market prices of principal cereals, farmgate prices for principal cereals, and irrigated perimeters (area and production).

Under the heading of animal resources, sub-headings include number of herds, sales of herd, market prices, slaughters, and training. The forest and fauna heading includes: forest and nursery production, wood cutting permits, poaching and illegal wood sales, distribution of managed forests, fauna inventory, and fish production.

All these data are from GON official sources. Thus, for example, all the agriculture and livestock data will be drawn from statistical annuals of MAG/EL. Similarly, the natural resources data will come from MHE. The Ministry of Plan does not generate any of these data independently of the technical ministries.

This data are intended to be the definitive multi-sector GON database for Niger. The purpose in gathering them is to establish a central repository of baseline data for use in project and program evaluation. It will be available for use by GON and donor agencies. At present, the Ministry of Plan's progress toward implementing this database is limited. The protocol has been defined in detail, and sources have been identified for the data. Yet, actual construction of the system has not progressed far beyond the planning stage.

While discussing Ministry of Plan data, one should also note the recent publication of time series data in the Ministry's statistical annual. This is a useful document that compiles historical data on a wide range of subjects. The main categories of data are natural environment, human resources, goods and services (including agriculture and livestock, as well as foreign trade), and macro-economic indicators and national accounts. These are, of course, the same official statistics as appear everywhere else; yet, the *Direction de la Statistique et de la Demographie* has done an excellent job of collecting and presenting the available data.

6.4 UNDP Socioeconomic Database

The United Nations Development Programme (UNDP) is also engaged in establishing a general socioeconomic database for Niger. This database appears to be much less ambitious than the Ministry of Plan effort.

The UNDP database is organized into six technical categories and four sectors. The categories are national accounts, public finance, prices, money and credit, balance of payments and foreign trade, and debt. In addition, there is sectoral information on rural activities, mining, manufacturing, and energy.

Information on the rural sector appears in 10 tables, listed below:

- utilization of arable land
- area, production, and yield of food crops
- area, production, and yield of garden and industrial crops
- evolution of farmgate prices
- evolution of cattle (1968-87)
- cattle population trends by department
- production and trade of fish (1981-87)
- forest classification and fauna reserves, by department (1986)
- official livestock exports by species and country of destination, and
- production and prices of principal agricultural products

All the agricultural and livestock data are official GON statistics from MAG/EL (except for prices, which are from OPVN). UNDP's objectives in establishing this database are similar to those of the Ministry of Plan. In addition, UNDP will use this database in the production of its annual activities report on Niger.

While this effort does not contribute new information, it does represent a significant effort at compiling historical time series on the variables in question. In fact, the UNDP database will include precisely the same information published by the Ministry of Plan in the statistical annual mentioned above. UNDP intends to complete data entry by December 1991.

6.5 AGRHYMET Databases

AGRHYMET is a Sahel-wide institution, based in Niamey, and heavily involved in the creation of agriculture-related databases. The organization's current plans call for the construction of six distinct databases covering:

1) meteorology
2) hydrology
3) satellite data (greenness indices)
4) pastoral resources
5) agriculture
6) phytosanitation

The meteorological database contains the data described above, in Chapter 5, as emanating from *Météorologie Nationale*: rainfall temperature (air and soil), humidity, evaporation, and solar radiation.

The hydrology database, when completed, will include MHE data on surface and groundwater resources. Progress to date in developing this database is limited. Also, to date, no progress has been made toward developing the pastoral resources database, and AGRHYMET has yet to decide what to include in the phytosanitation database.

The database of greenness indicators, on the other hand, is well-developed and fully operational. This database includes satellite observations dating from 1981 to the present. Data up to 1988 is limited to 7 kilometer resolution; since 1988, observations have been available at the 1 kilometer resolution level.[49]

AGRHYMET's agricultural database covers area, production, and yield of major crops since 1984. The source of these data is MAG/EL (statistical annuals).

In addition to its research agenda, AGRHYMET serves as a regional information source. Toward that end, AGRHYMET publishes two bulletins containing Sahel-wide updates of the data it collects. These publications are decadal (every 10 days), and monthly.

The categories of information in the AGRHYMET bulletins are identical to the list of database categories presented above. The monthly bulletins also include some cumulative and historical data for each country.

AGRHYMET has also made significant progress in facilitating dissemination of rainfall data through the development of its CLIMBAS software. This is a user-friendly database management system that greatly facilitates access to rainfall data.

6.6 DIAPER Agricultural Database

Within the context of the multi-donor famine early warning system (*Système d'Alerte Précoce*), DIAPER, too, has structured an agricultural database with official GON statistics. The schematic structure of the CILSS database, as well as a complete list of the intended tables appears as Annex F.

This database is broken into four broad areas: population, plant production, animal production, and environment. The population data include urban and rural population by sex. The sub-headings under vegetable production include factors of production, production levels, cereals trade and consumption, and prices. Under animal production, the sub-headings are factors of production, production, marketing, and consumption. Within the environmental heading, entries include institutional and environmental indicators, and physical environment. Among these sub-categories, there are 48 sub sub-categories, each of which contains from one to 30 tables.

This database structure is intended to be implemented in each of the nine CILSS countries. The Niger version exists on a computer at the DIAPER office located at the SAP office. The structure of the database per se does not reflect its actual contents in Niger. Unfortunately, no one in the country understands the computer codes necessary to access the data. Until a technician from Ouagadougou can visit Niamey to train a local staff person in how to access this database, it will remain unused. Its precise contents cannot be reported.

6.7 Other Databases

Several specific databases exist in Niger, some of which are more relevant than others to this study. Annex G contains a list of GON databases, along with names and phone numbers of contacts, and Annex H is a list of data resources, names and phone numbers of participants in last year's geographic information systems conference organized by MAG/EL, AGRHYMET, and CRED.

The most relevant among these databases have already been mentioned in Chapter 5. In particular, the Ministry of Hydrology's water resources database is considered to be of high quality and utility. In addition, ONAHA maintains a database on irrigated perimeters, which includes data on area, water resources, and production (primarily rice). The other data resources examined in Chapter 5 are not formal databases.

One such collection of information not yet mentioned is an FAO inventory of *arrondissement* characteristics relevant to food security. This document was prepared in December 1990, as preparation for phase two of the FAO's food security program for Niger. The categories of indicators collected for each *arrondissement* include population grouping, vulnerable population, degree of cereal needs covered, frequency of consumption of major food groups, migration, markets, number of cereal stock facilities, number of cooperatives, schools, health facilities, and environmental and agro-pastoral zone. The document is quite difficult to decipher, and its application is not clear.

7. GENERAL OBSERVATIONS AND CONCLUSIONS

In many respects, Niger's agricultural data system is like a pyramid balanced upside-down on its tip: official GON statistics provide a precarious, yet virtually exclusive, foundation for a broad network of databases and institutions. Official production, area, and yield statistics for cereals are the core of this network, which also includes data on livestock production and marketing, commodity prices, input use, natural resources, and international trade.

Both producers and users of this data are in broad agreement as to its quality and utility. The general view is that the data is not highly reliable but is improving.

The quality of the data varies across categories. Most interviewees had little confidence in the accuracy of the MAG/EL data on the production, area, and yield of major cereals and legumes. Yet, most also agreed that the recent support of CILSS for MAG/EL harvest data has improved the situation. There is a wide-spread suspicion that many of the estimates are made by agents who either fail to visit the fields, or who do cursory work when there. This may be true, though no one can say to what degree.

It is the case, however, that MAG/EL data collection rests on a cadre of agents who are overburdened by multiple responsibilities and who are given little incentive or means to do their job well. The Ministry itself has no means of providing close supervision to a nationwide data collection effort, and thus has no means to verify the accuracy of measures made in the field. One positive sign, however, is that during the past two years, the survey has reintroduced the practice of making definitive estimates at harvesttime. At least through most of the 1980s, official statistics were based on provisional estimates only.

Livestock production and marketing data appears to be in somewhat better shape. An improved livestock market information system has been in place since 1986. This system is regarded as producing more accurate and timely information than was gathered by the pre-existing livestock data system (which continues to operate along with the new system).

Market price data for cereals may be among the best agricultural data collected in Niger. OPVN appears to do a good job of collecting retail prices, although wholesale prices seem to suffer from lack of clear definition. Farmgate prices remain the weak link in the cereals market information system. Nonetheless, price collection at each level is generally regarded as having improved during the past several years, through the installation of the *Système d'Information sur le Marché des Céréales au Niger.*

Natural resources data is also relatively strong. One observer viewed the water resources database at the Ministry of Hydrology and Environment as the best database in Niger. Forestry and land use data, on the other hand, are of more mixed quality. Forest

resources surveys have been undertaken intermittently, and the published data generally relies on projections based on the last survey data and the country's population growth rate.

Data on international trade and agricultural input use, however, is thought to be quite poor. Trade data suffers from the obvious problem that most cross-border trade with Nigeria is unregistered. This is particularly true of livestock and cowpea trade. With regard to input data, the problem is more basic: there is no mechanism in place to measure it.

Most data that emerges from these various sources is virtually impossible to verify: there are no alternative sources of information, and there are no means for re-checking what is collected. Nonetheless, as the only data available, these are what appear in all the databases being established at various institutions.

As a general matter, Niger's agricultural data system appears to be on auto-pilot. Huge volumes of data are collected; yet, very little use is made of that data. The problem lies partly in the lack of well-trained analysts: the ability to collect data far exceeds the ability to analyze and to use the data constructively.

The institutions involved are fully occupied with the substantial challenges of regular data collection and reporting. That the system operates is a significant accomplishment. Yet, there is little sense of purpose behind much of the data collection effort.

Little use is made of the data, in part, because there is no demand for policy analysis based on that data. The system seeks to be supply-driven when it can only improve in response to a clear need. Thus, in the long run, USAID's greatest contribution to the improvement of Niger's agricultural data system might come through activities that demonstrate the benefits of sound policy analysis and stimulate demand for such analysis by Nigerien decision-makers.

USAID's support through ASDG has been an important step in this direction. Even greater opportunities in this domain lie ahead in USAID's Policy Analysis and Monitoring Project (PAM). The very existence of this project within the Ministry of Plan will provide an important source of demand for data analysis. This project will also contribute to host agency analytical skill by providing substantial training in the analysis and management of databases. Indeed, the first major phase of the PAM project will explicitly explore the data requirements of rural development policy analysis and monitoring.

The PAM project will be a major activity related to improving the generation and analysis of policy-relevant data in Niger. In addition, the work begun in this study might be followed up by several smaller USAID activities. One such step would be to examine in detail the data resources generated and maintained by other donors for their specific projects. It would be useful to trace the dissemination, if any, of those data. Though site and topic-specific, the range of projects involved could prove to be a rich source of information.

Another potentially rich source of information relevant to food security are village-level food balance surveys. Local *préfets* and *sous-préfets* regularly make inquiries of local sources to determine whether their cillage are in surplus or deficit. The methodologies applied in these surveys vary from site to site, and the results are not centralized. The Ministry of Interior is associated with this process in some way. It may be worth the effort to investigate this source as one of the next steps following from this study.

A further step could involve investigating the costs of either: 1) contributing to the improvement of MAG/EL data collection and dissemination, or 2) USAID undertaking its own data collection activity. The latter could make cost-effective use of rapid appraisal techniques to address well-specified data requirements. The rapid appraisal technique has proven particularly useful in studies of agricultural marketing systems, and could be a valuable source of information to any future USAID/Niamey activities relating to agricultural marketing.

LIST OF PERSONS CONTACTED

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* present at larger meeting, but didn't say much

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ENDNOTES

1. Sources differ as to the exact number of villages selected. The lowest number provided is 384, the highest, 408. Thus, the actual sample size is somewhere between 1920 and 2040.

2. Charlotte Sharp (FEWS) points out that field-weighted averages are generally more accurate than this type of population-weighted average.

3. DIAPER (1991), p. 69, and author's interview with Charlotte Sharp (FEWS), September 27, 1991.

4. DIAPER (1991), p. 74.

5. The area of the carrés for sorghum, millet, and cowpeas inter-cropped is 100 sq. meters; for peanuts, maze, and cowpeas under monoculture, the carré area is 25 sq. meters.

6. Author's interview with *Chefs des Services Agricoles* in Dosso. October 2, 1991.

7. Zarkovich (1966), p. 7.

8. See Casely and Kumar (1988), and Scott, Marchant, and Verma (1989).

9. Scott, Marchant, and Verma (1989), p. 7.

10. Zarkovich (1966) describes these potential sources of bias in detail.

11. Casely and Kumar, op. cit.

12. Author's interview with Jess Lowenberg-Deboer (INRAN), September 26, 1991.

13. The divergence between the departmental averages and the national figure is due to the calculation of the national figure as a weighted average. The average across departments presented here is not weighted, and simply describes the average discrepancy per department.

14. GON calculations, Ibid.

15. Author's interview with Leopold Wantisse Siry, FAO Resident Representative, October 3, 1991.

16. Author's interview with Jess Lowenberg-DeBoer (INRAN), September 26, 1991.

17. This section deals specifically with agricultural production data gathered by AGRHYMET. The more general databases maintained by AGRHYMET are described in Chapter 6, below.

18. Information in this section comes from Hopkins (1988), Hopkins and Reardon (1989), and Hopkins and Reardon (1990).

19. This section is based on the author's interviews with Maidagi Bajoudou and Chipkaou Maitrourare (MAG/EL), October 1, 1991, and Charlotte Sharp (FEWS), September 30, 1991, as well as Gray and Cook (1988), Chapter 1.

20. Species recorded include: cattle, sheep, goats, camels, fowl, hogs, and others.

21. This volume includes hydrological data, reflecting a previous institutional structure.

22. For the specific purposes of famine early warning systems, the unit price is not as important as being able to calculate the quantity of millet that one can purchase with the revenue from a livestock sale.

23. Based on Gray and Cook (1988).

24. As discussed in Chapter 4, below, problems with cereal price collection in this survey limit the validity of these analyses.

25. It is necessary to specify "potential' usefulness, since no one really knows how, or if, the information is used at the local level.

26. The cereals include millet, sorghum, maze, local rice, imported rice, and rice paddy.

27. Author's interview with J. Lowenberg-DeBoer, INRAN, September 26, 1991.

28. Evaluation by Johnny Egg and Kalifa Traore, contained in OPVN (July, 1991a).

29. Ibid., p. 30

30. Author's interview with Charlotte Sharp (FEWS), September 30, 1991.

31. See OPVN (July, 1991b).

32. Author's interview with Dale Rachmeler (CRED), September 29, 1991.

33. The Livestock Service's cereals price collection efforts are described above.

34. CRED, also undertakes regular price surveys of Niamey food markets. The results of this survey are available from CRED.

35. Author's interviews with Diallo Aissa and Diouf Abdelkardry Maissa (Chamber of Commerce), September 30, 1991, and Magagi Souleymane Moussa (Ministry of Economic Promotion), October 1, 1991.

36. Author's interview with Sidi Mohamed and George Callen (USAID), September 30, 1991.

37. Author's interview with Dale Rachmeler (CRED), September 27, 1991.

38. The forestry and environmental statistics division of the Ministry of Hydrology and Environment is housed at the Ministry of Agriculture and Livestock.

39. This was the opinion of Leopold Wantisse Siry, FAO Resident Representative, interview with author, October 3, 1991.

40. Author's interview with Hama Kontongombe (AGRHYMET), September 25, 1991.

41. AGRHYMET (1990), appendix.

42. Larry Herman (1991).

43. Author's interview with Amadou Halidou, Director General, ONAHA, October 8, 1991.

44. The survey also follows stocks of sugar, oil, and tomatoes.

45. The notion here is that stocks plus consumption plus post-harvest loss should equal production. Given their stock figures, and some estimate of consumption and loss, the Chamber of Commerce can detect gross inaccuracies in the production figures.

46. There will be no statistical annual published this year, due to the recent reorganization of MAG/EL. The most recent annual synthesis report for livestock was published in 1987.

47. A shorter activities report for 1990 includes only area, production, and yield figures for the major cereals.

48. Internal USAID memo by Barry Rands, ASDG/NRM, July 24, 1991.

49. That is, there is one observation for each square kilometer of the country.

ANNEXES

ANNEX A

Fiches for MAG/EL Databases

MINISTERE DE L'AGRICULTURE
ET DE L'ELEVAGE
DSA/E

ENQUETE PREVISION-ESTIMATION DES RECOLTES 1990

FICHE 1: DENOMBREMENT

Département: _____ Arrondissement: _____

Village: _____

Nom et prénom de l'enquêteur: _____

Nom du quartier ou partie du village	Concession				Exploitation agricole		
	Numéro de concession	Nom et prénom du chef de la concession (ou de l'exploitation)	Nombre de ménages	Nombre de personnes	Numéro d'exploita agricole	Nombre d'actifs agricoles	Nombre de champs
1	2	3	4	5	6	7	8

MINISTERE DE L'AGRICULTURE
ET DE L'ELEVAGE
DSA/E

ENQUETE PREVISION-ESTIMATION DES RECOLTES 1990

FICHE 2: EXPLOITATION

Département: _____ Arrondissement: _____

Village: _____

Exploitant: _____

Nom et prénom de l'enquêteur: _____

Activités de l'exploitation

culture uniquement ☐1 culture et élevage ☐2 culture de contre-saison ☐1

Champs cultivés			Parcelles cultivées			
Numéro de champ	Mode de culture	Type de champ	Numéro de parcelle	Cultures présentes	Situation de la campagne précédente	
					cultivée	si oui:cultures pratiquées
1	2	3	4	5	6	7

Codification:

(2) Mode de culture: pluviale=1; cuvette=2; irriguée=3

(3) Type de champ: collectif=1; individuel=2

(6) Cultivée: oui=1; non=2

(5) (7) Culture

mil=01; sorgho=02; niébé=03; arachide=04; riz=05; maïs =06; fonio=07; voandzou=08, oseille=09; sésame=10; souchet=11

30'

MINISTERE DE L'AGRICULTURE
ET DE L'ELEVAGE
DSA/E

ENQUETE PREVISION-ESTIMATION DES RECOLTES 1990

FICHE 3: MESURE DES PARCELLES

Département: _____ Arrondissement: _____

Village: _____

Exploitant: _____

Nom et prénom de l'enquêteur: _____

3.1 Numéro de champ/parcelle					
Cultures					

3.2 CONTOURS DES PARCELLES (Angles en degrés ou en grades, Distances en mètres)

Désignation	Angle | Distance	Angle | Distance	Angle | Distance	Angle | Distance	Angle | Distance
1 AB	|	|	|	|	|
2 BC	|	|	|	|	|
3 C	|	|	|	|	|
4 D	|	|	|	|	|
5 E	|	|	|	|	|
6 F	|	|	|	|	|
7 G	|	|	|	|	|
8 H	|	|	|	|	|
9 I	|	|	|	|	|
10 J	|	|	|	|	|
11 K	|	|	|	|	|
12 L	|	|	|	|	|
13 M	|	|	|	|	|
14 N	|	|	|	|	|
15 O	|	|	|	|	|

3.3 PERIMETRE ET SUPERFICIE DES PARCELLES

Périmè /1/2 P (m)	/	/	/	/	/
Superficie (m^2)					
Erreur clôture(%)					

51

MINISTERE DE L'AGRICULTURE
ET DE L'ELEVAGE
DSA/E

ENQUETE PREVISION-ESTIMATION DES RECOLTES 1990

FICHE 4: RENDEMENT PREVISIONNEL CEREALIER

Département: _____ Arrondissement: _____

Village: _____

Exploitant: _____

Nom et prénom de l'enquêteur: _____

Numéro de champ/parcelle	Culture	Nombre d'épis potentiels	Poids net estimé des épis (g)	Rendement (kg/ha)
1	2	3	4	5

MINISTERE DE L'AGRICULTURE
ET DE L'ELEVAGE
DSA/E

ENQUETE PREVISION-ESTIMATION DES RECOLTES 1990

FICHE 4 bis: PREVISION DU CHEF D'EXPLOITATION

Département: _____ ☐ Arrondissement: _____ ☐☐

Village: _____ ☐☐☐

Exploitant: _____ ☐☐☐

Nom et prénom de l'enquêteur: _____

RECOLTE DE 1989: Mil _____ bottes (*) Sorgno _____ bottes (*)

Numéro de champ/parcelle	Culture	Appréciation de la récolte	Nombre escompté de bottes (*)
1	2	3	4
☐☐ ☐☐	☐☐ _____		
	☐☐ _____		
☐☐ ☐☐	☐☐ _____		
	☐☐ _____		
☐☐ ☐☐	☐☐ _____		
	☐☐ _____		
☐☐ ☐☐	☐☐ _____		
	☐☐ _____		
☐☐ ☐☐	☐☐ _____		
	☐☐ _____		
☐☐ ☐☐	☐☐ _____		
	☐☐ _____		

(3) Appréciation de la récolte par rapport à 1989: 1=meilleure; 2=aussi bonne; 3=moins bonne; 4=mauvaise
(*) Unité locale de stockage: bottes, paniers, sacs...

MINISTERE DE L'AGRICULTURE
ET DE L'ELEVAGE
DSA/E

ENQUETE PREVISION-ESTIMATION DES RECOLTES 1990

FICHE 5: RECOLTE DES CARRES

Département: _____ Arrondissement: _____

Village: _____

Exploitant: _____

Nom et prénom de l'enquêteur: _____

Numéro de champ/parcelle	Culture	Nombre d'épis récoltés	Poids brut des épis (g)	Poids net des épis (g)	Nombre (*) de bottes récoltées	Rendement (kg/ha)
1	2	3	4	5	6	7

(*) Nombre de bottes récoltées sur la totalité de la parcelle
Unité locale de stockage: bottes, paniers, sacs...

60

ANNEX B

Fiches for "classic" livestock market survey

REPUBLIQUE DU NIGER

MINISTERE DE L'AGRICULTURE
ET DE L'ELEVAGE

RAPPORT MENSUEL

MOIS de.....19.....

SARA de.....

DDRA de.....

A. SANTE ANIMALE

1. SITUATION SANITAIRE

AFFECTIONS	LIEU	Nombre de FOYERS	Effectif Troupeau	MALADES	MORTS	Mesures Prises

2. MOUVEMENT DES STOCKS

NATURE / Mouvement	VACCINS						
	PESTE	PPCB	Ch. Bact	Ch. Symp	Past	Rage	
						Chien	Chat
Stock Résiduel							
Reçu							
Consomme							
Disponible							

A _____ le _____ 19____

le _____

62

3 TRAITEMENTS INDIVIDUELS

Affections	EQ	AS	BOV	OV	CAP	CAM	CHIENS	CHATS	VOL	DIVER
Total Mois										
BILAN AU										

BOV : **Bovins** **EQ :** **Equins :**
OV : **Ovins** **AS :** **Asins**
CAP : **Caprins** **VOL :** **Volailles**
CAM : **Camelins**

- 12

4·1 PROPHYLAXIE MEDICALE

Arrondissements	IMMUNISATIONS CONTRE LES PRINCIPALES EPIZOOTIES												
	BOVINS					OVINS				CAPRINS			
	Peste	Charb Bact	Charb Symp	PAST	PPCB.	P P R	Char Bact	PAST	AUTRES	P P C	Charb Bact	PAST	P P I
TOTAL													
BILAN AU													

4·2 AUTRE IMMUNISATIONS ET CHIMIO-PREVENTIONS

ARRONDISSEMENTS	TRAITEMENTS CHIMIO PREVENTION TRYPANOSOMIASE			VACCINATIONS DES VOLAILLES			VACCINATIONS · RAGE			
							CHIENS		CHATS	
	BOV	CAM	EQUIN	PESTE	GOMBORO	AUTRES	PRIMO	RAPPEL	PRIMO	RAPPEL
TOTAL										
Bilan au										

5-FICHE DE SAISIE

ARRONDISSEMENT

MOIS DE

NATURE / MOTIFS	SAISIES TOTALES								SAISIES PARTIELLES				
	BOV		OV		CAP		CAM						
	Nb	P		P	Nb	P	Nb	P	FOIES	LANG	CŒURS	POUM	QUARTIER
Total Mois													
Bilan au													

Nb : Nombre

P : Poids

166

REPUBLIQUE DU NIGER

MINISTERE DE L'AGRICULTURE
ET DE L'ELEVAGE

RAPPORT MENSUEL

MOIS de _____ 19 ____

SARA de _____

DDRA de _____

B Production et Commercialisation des Produits Animaux

1. PLUVIOMETRIE

Localité							
Hauteur du mois en m/m							
Hauteur Totale cumulée en m/m							
Nbre de jours de pluie du mois							
Nbre Total de jours de pluie							

2. MOUVEMENTS DES STOCKS

Nature / Mouvement	Aliments complémentaires			
	Graines de coton	Son de blé	Piérre à lécher	Vitamines
Stock résiduel				
Reçu				
Consommé				
Disponible				

A _____ le _____ 19 ____

le _____

-67

3. ABATTAGES CONTROLES

ARRONDISSEMENTS	BOVINS					OVINS		CAPRINS		CAMELINS		Porcs	Equins
	TA	B	VA	VE	T. Bov	M	F	M	F	M	F		
Total Mois													
BILAN AU													

65

4 CUIRS ET PEAUX

Conditionnement — **Exportations Controlées**

CUIRS DE BOVINS — 4.2 CUIRS BRUTS DE BOVINS

Arrondissements	BAV	BS	AB	TOTAL	DESTINATION	Nbre	Poids
Total Mois							
BILAN AU							

4. 3 PEAU DE MOUTON — 4.4 PEAUX BRUTES DE MOUTON

Arrondissement	BAV	BS	AB	TOTAL	DESTINATION	Nbre	POIDS
Total Mois							
BILAN AU							

4.5 PEAU DE CHEVRE — 4.5 PEAUX BRUTES DE CHEVRES

Arrondissements	BAV	BS	AB	TOTAL	DESTINATION	Nbre	Poids
Total Mois							
BILAN AU							

5. CONTROLE DES MARCHES : MOUVEMENTS DES ANIMAUX

ARRONDISSEMENT	MO	RV	Nombre Visite Mois	BOVINS		OVINS		CAPRINS		CAMELINS		ASINS		EQUINS	
				P	V	P	V	P	V	P	V	P	V	P	V
Total Mois															
BILAN AU															

MO : Marchés Ouverts

RV : Regulièrement Visité

P. Présentés

V. Vendu

70

ENQUETE SUR LES MARCHES DE REFERENCE

ABATTOIRS	POIDS MOYEN. CAR. CASSE				PRIX							
					PAR QUARTIER				PAR KILOGRAMME			
	BOV	OV	CAP	CAM	BOV	OV	CAP	CAM	BOV	OV	CAP	CAM

6.1 MERCURIALES : PRIX MOYEN PAR TETE

ARRONDISSEMENTS									
ESPECES		CATEG.	PM/TETE	PM/TETE	PM/TETE	PM/TETE	PM/TETE	PM/TETE	PM/TETE
BOVINS		BŒUFS							
		TAUREAUX							
		T. BOUV.							
		VACHES							
		GENISSES							
		VE.VELLES							
OVINS	ADULTES	MALES							
		FEMELLES							
	JEUNES	MALES							
		FEMELLES							
CAPRINS	ADULTES	MALES							
		FEMELLES							
	JEUNES	MALES							
		FEMELLES							
AMELINS		MALES							
		FEMELLES							

6.2 MERCURIALES (SUITE)

ARRONDISSEMENT								
ESPECES	CATEG							
ASINS	MALES							
	FEMELLES							
EQUINS	MALES							
	FEMELLES							
VOLAILLES	POULETS							
	PINTADES							
	CANARDS							
DIVERS								

PM/TETE PRIX MOYEN PAR TETE

23

7. EXPORTATIONS

7.1 ANIMAUX SUR PIED

POSTE DE DEPART	POSTE SORTIE	DESTINATION	BOV	OV	CAP	CAM	AS
Total Mois							
BILAN AU							

7.2 VIANDES FRAICHES REFRIGEREES

ORIGINE	DESTINATION	BOV	OV	CAP	EQUINS	CAM	ABATS
Total Mois							
BILAN AU							

7.3 VIANDES SECHEES FUMEES

ORIGINE	DESTINATION	VIANDES SECHEES	VIANDES FUMEES
Total Mois			
BILAN AU			

14

8.1. ANIMAUX SUR PIED (1)

ORIGINES	POSTE D'ENTREE	BOV	OV	CAP	PORCS	CAM	AS
Total Mois							
BILAN AU							

8.2. VIANDES ET PRODUITS LAITIERS

ORIGINE	POSTE D'ENTREE	VIANDE			PRODUITS LAITIERS		
		BOV	PORCS	DIVERS	LAIT	BEURRE	FRO-MAGES
Total Mois							
BILAN AU							

9. TRANSIT CONTROLE

ORIGINE	DESTINATION	BOV	OV	CAP	DIVERS
Total Mois					
BILAN AU					

(1) il s'agit des animaux étrangers présentés et vendus

15

ANNEX C

List of MAG/EL survey activities

ANNEX C

3.3 Collecte des données statistiques

Tableau N° 19 : Activités pour la collecte des données statistiques

Département	Activités	Lieux	Prévision	Réalisation	Ecart
AGADEZ	Enquête sécurité alimentaire	Arlit, Tchiro	-	Terminee	-
	Enquête Prévision Estimation Récolte	Agadez	-	Terminée	-
	Enquête utilisation semnces améliorées		-	Terminée	-
DIFFA	Enquête Prévision Estimation récolete	Arrondissements	36 vill.	36 vill.	0
	Enquête consommation céréales		10 vill.	10 vill.	0
	Enquete stocks paysans		36 vill.	36 vill.	0
	[illegible]		[illegible]	[illegible]	0
DOSSO	Enquête prevision estimation récolte	Vill. éch.	66	66	-4
	Enquête stocks paysans	Indem	66	62	
	Enquêtes utilisation semences	Idem	66	62	
	Enquêtes brigadiers	Villages	160	160	0
	Enquête brigadier resp. village	Villages	20	20	0
	Enquête consommation céréales	Villages	20	20	0
	Enquête Encadrement rapproche	Villages			-
	PC		63	63	0
	Agents		10	10	0
	Enquête suivi Marchés	Marchés	7	7	0
	Suvi Agro Météorologique	Postes	15	15	0
MARADI	-	-	-	-	-
TAHOUA	Enquête Prévision Estimation Récolte	Vill. echant.	82	80	-2
	Enquête Encadrement rapproché	Bouza, Konni,Mad	13	15	+2
	Enquête consommation céréales	Vill. échant.	20	20	0
	Enquête pertes récoltes mil	Vill. échant.	18	18	0
	Enquête suivi Marchés	Marchés éch.	6	6	0
	Enquête sécurité alimentaire	Arrdts	7	7	0
	Enquête cours des produits	Marchés	31	31	0
	Suvi campagne (SAP)	Sites éch.	21	21	0
	Enquête stocks paysans	Vill. échant.	82	80	-2
	Enquête utilisation semences	Expt échant.	410	400	-10
TILLABERI	Enquête prevision estimation récolte	77 villages	77	77	0
	Enquête suivi carrefour	Sites	25	25	0
ZINDER	Enquête prevision estimation récolte	Arrondissements	-	-	-
	Enquête stocks paysans	Arrondissements	-	-	-
	Enquête consommation semences	Arrondissements	-	-	-
	Suivi agro météorologique	Arrondissements	-	-	-
	Cours des produits	Arrondissements	-	-	-
	Enquête consommation céréales	Arrondissements	-	-	-
CUN	Cours des Produits	-	-	-	-

Commentaires: Dans le domaine des statistiques agricoles aussi bien la formation recyclage (Tableau No) que l'activité collecte données (Tableau No [illegible] été réalisé dans les limites de prévisions. Il reste le problème [illegible] la qualité et la régularité du travail accompli. Les Enquêtes ont été initié par la DEP (sécurité alimentaire), la DPV (perte récolte mil), Plan, OPVN (suivi marché) et les autres par la DSAE. Pour ce qui est du déroulement des enquêtes à Maradi et Zinder l'on déplore le retard dans la mise en place des moyens ainsi que le manque de mesure visant é motiver les Enquêteurs. A Tahoua c'est le manque de

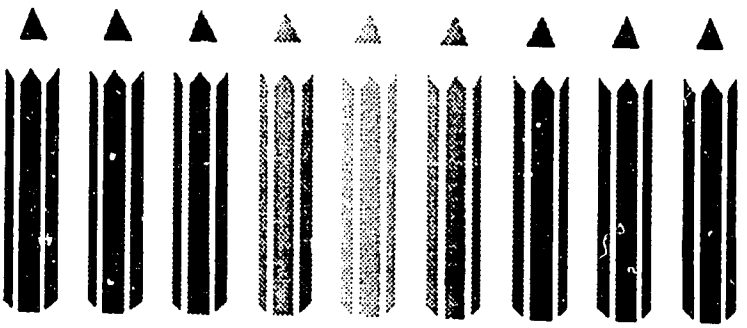
ANNEX D

BASDONAG protocol

République du Niger
Ministère de l'Agriculture et de l'Elevage
Direction des Etudes et de la Programmation

Centre de Recherche sur le Développement Economique

Documentation de la Cellule d'Analyse des Politiques Agricoles



MAI, 1991

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D-1

19

TABLE DE MATIERES
LISTE DES PRINCIPAUX THEMES
(par ordre Alphabetique)

THEMES	Page
AHA	1
ALIMENTATION	1
ANIMAUX	1
BANQUES CEREALIERS	1
BETAIL	1
BILAN	2
CEREALES	2
CHEPTEL	2
COMMERCE	2
COMMERCIAL	2
CONTRE SAISON	3
COOPERATIFS	3
ECONOMIE	3
ELEVAGE	3
ENGRAIS	3
EXPORTATION	3
IMPORTATION	3
INTRANTS	3
MATERIEL	4
PECHES	4
PLUVIOMETRIE	4

- 80

TABLE DE MATIERES
LISTE DES PRINCIPAUX THEMES
(par ordre Alphabetique)

THEMES	Page
POPULATION	4
PRIX	4
PRODUCTION	6
RENDEMENT	6
SEMENCES	6
STOCKS	7
SUPERFICIES	7
TRANSIT	7

81

CLE1	CLE2	DESCRIPTION	FICHIERS
AHA	PRODUCTION	Super. Rend. Production des aménagements 1987-1988	AHA1.WR1
ALIMENTATION	RIZICOLES	Superf. Rendem. Prod. Rizicoles des AHA du fleuve	SRP-R12
ALIMENTATION		Bilan alimentaire National 1977-1985	DEBBIE??.WK1
ANIMAUX		Bilan alimentaire 1970-91	BILALIM.WR1
ANIMAUX	MALADE	Nbre d'animaux malades/type. inf	ANIMALAD.DBF
ANIMAUX	MORTS	Nbre d'animaux morts/type	ANIMORTS.DBF
ANIMAUX	VACCINS	Nbre d'animaux vaccinés/type	VACCINAT.DBF
BANQUES CER.	CEREALES	Mouvements de stocks BC Tahoua 1985-86	CB16.WK1
BANQUES CER.	CEREALES	Mouvements stocks 12 Banques Maradi 82-87	CB4.WK1
BANQUES CER.	CEREALES	Taux rembours. annuel Maradi 1983-87	CB10.WK1
BANQUES CER.	CEREALES	Mouvements de stocks BC Projet Keita 1984-86	CB11.WK1
BANQUES CER.	CEREALES	Taux remplacement BC proj Keita 1984-86	CB13.WK1
BANQUES CER.	CEREALES	Interet/prets cerealiers Maradi 1982-87	CB15.WK1
BANQUES CER.	CEREALES	Ventes/Depenses banques ILO Maradi 1983	CB3.WK1
BANQUES CER.	CEREALES	Taux distrib/recuper Coops ILO Maradi 1982-83	CB2.WK1
BANQUES CER.	CEREALES	Taux distrib/recuper. Coops ILO Maradi 1984-85	CB1.WK1
BANQUES CER.	CEREALES	Stocks de depart proj Keita 1984-86	CB12.WK1
BANQUES CER.	CEREALES	Stocks de depart Maradi 1982-86	CB
BANQUES CER.	CEREALES	Mouvements stocks BC proj ILO Zinder 1987	CB14.WK1
BETAIL	ABATTAGES	Abattages controles 1983-86	ABATT.WK1
BETAIL	COMMERCIAL	Exportations de betail 1982-1986	BETEXP.WK1
BETAIL	EFFECTIF	Effectifs cheptel N'al 1960-86	EFFECTIF.WK1
BILAN		Bilan alimentaire 1989	BILAN89.WR1

Source: CRED/Université de Michigan/MAG/EL/DEP

CLE1	CLE2	DESCRIPTION	FICHIERS
BILAN		Evolution bilan alimentaire de 85 à 1988	BIL85-88.WR1
BILAN	RIZ	Bilan de la consommation du riz	BRIZ.WR1
CEREALES	ACHATS	Evolution des Achats Locaux OPVN	EV-ACHAT.WK1
CEREALES	AIDES	Evolution des Aides Reçues OPVN	EV-AID.WK1
CEREALES	IMPORTATIONS	Evolution des Importations OPVN	EV-IMPORT.WK1
CEREALES	VENTES	Evolution des Ventes Interieures (OPVN)	EV-VENTES.WK1
CHEPTEL	EFFECTIFS	Effectifs estim. cheptel/ zone	ELEFFECT.DBF
COMMERCE	CEREALES	Commerc.des produits/region et comparais.des quantitites	COMMER-P.WK1
COMMERCIAL		Commercialisation officielle 1970-1986	COMPROD.WK1
COMMERCIAL	CEREALES	Achats locaux céréales (Etatiques)/zone	ACHATLOC.DBF
COMMERCIAL	CEREALES	Ventes céréales/zone	VENTCERE.DBF
COMMERCIAL	COOPERATIVES	Part des coops dans commercial. officielle 1974-19	COOPMKT.WK1
COMMERCIAL	DOUANE	Flux frontaliers des produits agro-pastoraux	DOUANE.DBF
COMMERCIAL	EXPORT	Exportations Agr. 1982-1986	AGEXPORT.WR1
COMMERCIAL	IMPORTATION	Importations commerciales des céréales (Etat)	IMPCOMME.DBF
COMMERCIAL	IMPORTATIONS	Importations Agric. 1982-86	AGIMPORT.WR1
COMMERCIAL	MIL	Ventes/achats mil local, 1986	SP1986.WK1
COMMERCIAL	MIL	Ventes Locales mil/Dept/Mois 1983-1986	SEMS.WK1
COMMERCIAL	MIL	Ach/ventes mil OPVN/Dept/Mois 1983-86	INTERV.WK1
COMMERCIAL	MIL	Achats mil local/Dept/Mois 1983-86	PEMP.WK1
COMMERCIAL	OPVN	Ventes mil OPVN/Dept/Mois 1983-86	SEMS.WK1
COMMERCIAL	SORGHO	Ventes sorgho local/Dept/Mois 1983-86	SALSORG.WK1
COMMERCIAL	SORGHO	Achats/ventes sorgho OPVN/Dept/Mois 1983-86	INTERSOR.WK1

Source: CRED/Université de Michigan/MAG/EL/DEP

CLE1	CLE2	DESCRIPTION	FICHIERS
CONTRE SAISON	EVOLUTION	Evolution des cultures de contre saison	COTRESA.WR1
COOPERATIFS		Situation du mouvement Cooperatif	SIT-COOP.WK1
COOPERATIVES	BUDGET	Evolution Budgetaire Cooperatives	BUDG-COP.WK1
ECONOMIE		Chiffre Affaires sect. moderne 1970-85	CHIFFAFF.WR1
ECONOMIE	COMMERCIAL	Balance des Paiements 1978-1986	BALPAYM.WR1
ECONOMIE	ENERGIE	Consomm. essence, gaz oil 1970-85	PETROL.WR1
ECONOMIE	PIB	Repartitions du PIB par genre d'activité Economique	PIB-SECT2
ECONOMIE	PIB	Repartit. PIB entre les sect.moderne et informel	PIB-SECT
ELEVAGE	ABATTAGE	Abattages contrôlés	ELABATTA.DBF
ENGRAIS		Importations engrais 1979-86	PS3
ENGRAIS	CONSOMMATION	Utilisation engrais / zone	ENGRZON.DBF
ENGRAIS	PRIX	Prix marche SSP Maradi/Zinder 1983-86	PS5
ENGRAIS	SORGHO	Profitabil. engrais sur sorgho 1983	SORGHO1.WK1
ENGRAIS	SORGHO	Profitabil. engrais sur sorgho 1985	SORGHO2.WK1
EXPORTATION	ANIMAUX	Exportation animaux vivants	EXPANIMA.DBF
EXPORTATION	VIANDE	Exportations de viande	EXPVIAND.DBF
IMPORTATION	ANIMAUX	Importations animaux vivants	IMPANIMA.DBF
INTRANTS		Evolution demande intrants agricoles	DEMINT.WK1
INTRANTS	ENGRAIS	Consomm. engrais dans plusieurs pays africains	WAFERT.WK1
INTRANTS	ENGRAIS	Valeur livraisons engrais clients CA 1980-1985	CLIENTS.WK1
INTRANTS	ENGRAIS	Consommation unites fertil (N,P,K) 1966-84	FNUT2.WK1
INTRANTS	ENGRAIS	Livraisons engrais/Departement 1985	FERT85.WK1
INTRANTS	ENGRAIS	Profitabilite usage engrais sur sorgho	SORGHO

Source: CRED/Université de Michigan/MAG/EL/DEP

CLE1	CLE2	DESCRIPTION	FICHIERS
INTRANTS	ENGRAIS	Distribution regionale P2o5 au Niger 1982-83	REGFERT
INTRANTS	ENGRAIS	Livraisons engrais projet Maradi 1981-1986	PROMAR
INTRANTS	ENGRAIS	Consommation engrais plusieurs arrond., 1977	FBYARR.WKS
INTRANTS	ENGRAIS	Consomm. officielle unites fertil. 1966-1986	NUT.WR1
INTRANTS	ENGRAIS	Distrib. frequ. engrais aux coops 1983	DISTCOOP.WK1
INTRANTS	ENGRAIS	Livraisons engrais/Departement, 1976 - 1984	FERT??.WK?
INTRANTS	ENGRAIS	Livraisons unites fertil./Departement 1976-84	F76_84.WK1
INTRANTS	ENGRAIS	Profitabilite usage engrais sur mil	MIL83
INTRANTS	ENGRAIS	Profitabilite usage engrais sur niebe	NIEBE
INTRANTS	ENGRAIS	Pourcentage P2o5 sur cultures, 1983	FERTCROP
INTRANTS	PRIX	Depenses en intrants Agricoles, 1978-1986	MACHFERT.WK1
INTRANTS	PROD.PHYTO-SANIT.	Evolution de la consomat. des intrants agricoles	EV-INTAG.WK1
INTRANTS	SUBVENTIONS	Evolution subventions sur intrants agr. 1978-84	EVOLSUB1.WK1
MATERIEL	AGRICOLE	Matériel agricole /zone	MATERZON.DBF
PECHES	STATISTIQUES	Statistiques des Pêches	ENVIRON.WR1
PLUVIOMETRIE		Pluviométrie nationale par Dept. 70-89	RAINFALL.WK1
PLUVIOMETRIE		Moyenne Pluviometrique par Arrondissement 1970-89	RAINARON.WK1
POPULATION		Population résidente / zone	POPUZONE
POPULATION	PROJECTION	Projection Population/Arrond 1988 - 2000	AG_MODEL.WR1
POPULATION	URBAIN	Population / centre urbain	CENTURBA.DBF
PRIX		Prix aux producteurs cultures principales 1970-85	PRIXOFFI.WK1
PRIX	ACHAT	Prix officiel à la consommation	PRIXOFCO.DBF
PRIX	ACHAT	Prix officiels d'achat aux producteurs	PRIXPROD.DBF

Source: CRED/Université de Michigan/MAG/EL/DEP

CLE1	CLE2	DESCRIPTION	FICHIERS
PRIX	ANIMAUX	Prix moyens animaux/catégorie	PRIXBET.DBF
PRIX	CEREALES	Inventaire donnees/prix cereal.	PXDATAAR.WK1
PRIX	CEREALES	Prix OPVN à la consomamation des cereales	OPVN.WK1
PRIX	CEREALES	Prix céréales observés sur les marchés	PRIXCEMA.DBF
PRIX	CEREALES	Prix officiels aux producteurs 1977-1988 par Dept	PRIXAG2.WR1
PRIX	CONSOMMATION	Indice des prix à la consommation	INDPRIX.DBF
PRIX	INTRANTS	Evolution prix de vente Intrants Agricoles	INTRAGRI.WR1
PRIX	INTRANTS	Evolution prix detail, intrants agric	CESSIONE.WK1
PRIX	MIL	Comparaison prix officiel/marche mil 1982-86	SOUTIEN.WK1
PRIX	MIL	Prix deflates, production, pluviom. 1970-86	INDICES1.*
PRIX	MIL	Prix mil vs. prod.vs. pluviometrie 1970-86	PRVSPR.WK1
PRIX	MIL	Dist. freq. prix mensuels mil Niamey 1978-1986	FDISTNY.*
PRIX	MIL	Variabilite prix mil 1982-86 (dosso,Ny,Mi,Zr)	VARIAT.WK1
PRIX	MIL	Dist. frequence prix mensuels mil NY 1978-86	FDISTNY.*
PRIX	MIL	Prix mensuel mil % IPC, Niamey 1970-86	MONTHLY. WK1
PRIX	MIL	Lissage exponentiel prix mil constants NY 70-86	SMOOTH1.WK1
PRIX	MIL	Prix du mil/Arrond/mois 1982-1988	MIL82_87.WK1
PRIX	MIL	Vers. finale Smooth.wk1 (graph. lissage 1-3)	SMOOTH3.WK1
PRIX	MIL	Evolution max&min prix mil NY,ZR,DO,MA 1982-86.	ECARTS..
PRIX	RIZ	Cours mensuels riz/Dpt 1983-1987	RIZ2
PRIX	SEMENCES	Prix Moyen d'achat Semences par Arrondisemment 1989	SEMPMOY.WK1
PRIX	SEMENCES	Proposition prix moyen des semences par Arrond	SEMPP.WK1
PRIX	VIANDE	Prix du Kg de viande (marchés)	PRIXVIAN.DBF

Source: CRED/Université de Michigan/MAG/EL/DEP

CLE1	CLE2	DESCRIPTION	FICHIERS
PRODUCTION		Production du Mil, Sorgho, Niebe, Arachide	PROD.WK1
PRODUCTION		Production nationale mil/sorgho/riz 1971-1989	PRODAG.WK1
PRODUCTION	C/SAISON	Valeur brute production contre-saison 1985/86	CCSVAL.WK1
PRODUCTION	C/SAISON	Superf & production Cult contre-saison 1984-86	CCS1.WK1
PRODUCTION	C/SAISON	Proportion cultures de C-Saison 1985/86	CCS3.WK1
PRODUCTION	CEREALES	% Superf./culture/Dept. 1980-1989	PROD4.WK1
PRODUCTION	CEREALES	Prod/Arrond mil,sorgho,arach,niebe 1980-89	PROD2.WK1
PRODUCTION	CEREALES	Balance cereal provisoire 31 Arrond. 23 Sept.(bas)	BAL88C.WK1
PRODUCTION	CEREALES	Balance cereal provisoire 31 Arrond. 23 Sept (haut	BAL88D.WK1
PRODUCTION	CEREALES	Superficies cultures principales/arrond 1980-89	PROD3.WK1
PRODUCTION	CEREALES	Previsions Balance cerealiere 1987/88	BAL87_1.WK1
PRODUCTION	COTON	Coton, 1955-86 (Prod. Superf. Fertil, etc.)	COTON.WK1
PRODUCTION	MIL	Indices compares de production/prix 1970-85	COMPAR.WK1
PRODUCTION	MIL	Tableau, indices compares production/prix	COMPAR2.DOC
PRODUCTION	PROD.AGRICOLES	Toutes les données Super. Rend. Product. /arrond	RECAP.NIGER
PRODUCTION	PROD.AGRICOLES	Récapitulatif de l'évol. Super. Rend. Prod	RECAP.WR1
RENDEMENT	CEREALES	Rendements moyens / zone	RENDZONE.DBF
SEMENCE	CONTRE-SAISON	Sit. gen. vente de Semences cultures de contre-sais	SEM-REG.WK1
SEMENCES	ARACHIDE	Cout semences M3 arach/site/annee	PSEED2
SEMENCES	ARACHIDE	Cout semences M2 arach/site/annee	PSEED1
SEMENCES	MIL	Cout semences M2 mil/site/annee	MSEED1
SEMENCES	MIL	Cout semences M3 mil/site/annee	MSEED2
SEMENCES	NIEBE	Cout semences M3 niebe/site/annee	NSEED2

Source: CRED/Université de Michigan/MAG/EL/DEP

CLE1	CLE2	DESCRIPTION	FICHIERS
SEMENCES	NIEBE	Cout semences M2 niebe/site/annee	NSEED1
SEMENCES	CEREALES	Quant. moy.kg semences campag.agr.1989 par arrond	SEMQKG.WK1
STOCKS	OPVN	Ventes mil OPVN/Dept/Mois exercice 1986	SMIL86
STOCKS	OPVN	Evolution de Stocks OPVN	EV-ST-CE.WK1
STOCKS	OPVN	Stocks sorgho OPVN/Dept/Mois 1986	SSS86.WK1
STOCKS	OPVN	Aide alimentaire distr. gratuit	AIDEDIST.DBF
STOCKS	OPVN	Stocks OPVN mil,sorgho/Dpt/Mois 1983-1986	CMS8386
STOCKS	OPVN	Achats sorgho OPVN/Dept/Mois 1983-86	SORPURC
STOCKS	OPVN	Aide alimentaire vendue	AIDEVEND.DBF
STOCKS	OPVN	Aide alimentaire / donateur	AIDDONAT.DBF
STOCKS	OPVN	Aide alimentaire. reçue / produit	AIDRECUE.DBF
STOCKS	OPVN	Gestion Stocks état . céréales	GESTSTOC.DBF
STOCKS	OPVN	Stocks stabil OPVN/type/mois 1986	STABST
STOCKS	OPVN	Ventes sorgho OPVN/Dept/Mois 1983-86	SORSALE
STOCKS	OPVN	Ventes sorgho OPVN/Dept/Mois exercice 1986	SSOR86
SUPERFICIES		Utilisation des terres	UTILTERR.DBF
SUPERFICIES	CEREALES	superficies cultivées /zone	SUPEZONE.DBF
TRANSIT	BETAIL	transit bétail	TRANSBET.DBF

Source: CRED/Université de Michigan/MAG/EL/DEP

ANNEX E

Ministry of Plan socioeconomic database protocol

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED1B	DEMOGRAPHIE								
	Structure de la population par age								
		POPM_O_4		Nombre de masculin 0-4 ans	ARR/DEP/NAT	RECENSEMENT 77/88	Répartition par sexe et par	Général structure de la	
		POPF_O_4		Nombre de féminin 0-4 ans	ARR/DEP/NAT	RECENSEMENT 77/88	groupe d'age	population de base	
		POPM_5_9		•	ARR/DEP/NAT	RECENSEMENT 77/88			Les variables démographiques
		POPF_5_9		•	ARR/DEP/NAT	RECENSEMENT 77/88		Migration, santé	représentent les variables qui
		POPM_10_14			APR/DEP/NAT	RECENSEMENT 77/88		Evolution de la population	permettront le découpage des données
		POPF_10_14			ARR/DEP/NAT	RECENSEMENT 77/88			en catégories significatives de la
		POPM_15_19			ARR/DEP/NAT	RECENSEMENT 77/88			population de base
		POPF_15_19			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPM_20_24			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPF_20_24			ARR/DEP/NAT	RECENSEMENT 77/88			A étudier
		POPM_25_29			ARR/DEP/NAT	RECENSEMENT 77/88			1) Possibilité d'inclure des
		POPF_25_29			ARR/DEP/NAT	RECENSEMENT 77/88			variables d'employés par catégorie
		POPM_30_34			ARR/DEP/NAT	RECENSEMENT 77/88			d'emploi
		POPF_30_34			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPM_35_39			ARR/DEP/NAT	RECENSEMENT 77/88			2) Inclusion de variables concernant
		POPF_35_39			ARR/DEP/NAT	RECENSEMENT 77/88			la migration, existent-il des
		POPM_40_44			ARR/DEP/NAT	RECENSEMENT 77/88			sources de données généralisables,
		POPF_40_44			ARR/DEP/NAT	RECENSEMENT 77/88			et à quel niveau de détail?
		POPM_45_49			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPF_45_49			ARR/DEP/NAT	RECENSEMENT 77/88			3) Sources de données d'appoint pour
		POPM_50_54			ARR/DEP/NAT	RECENSEMENT 77/88			rectifier et préciser les
		POPF_50_54			ARR/DEP/NAT	RECENSEMENT 77/88			projections utilisées dans cette
		POPM_55_59			ARR/DEP/NAT	RECENSEMENT 77/88			catégorie de variables
		POPF_55_59			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPM_60_64			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPF_60_64			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPM_65_69			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPF_65_69			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPM_70_74			ARR/DEP/NAT	RECENSEMENT 77/88			

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED1B		POPF_70_74			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPM_75_79			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPF_75_79			ARR/DEP/NAT	RECENSEMENT 77/88			
		POPM_80PL		Nombre de masculin > 80 ans	ARR/DEP/NAT	RECENSEMENT 77/88			
		POPF_80PL		Nombre de féminins > 80 ans	ARR/DEP/NAT	RECENSEMENT 77/88			
		Structure de la population decédée							
		DECM_O_4		Nombre de décès masculin 0-4 ans	ARR/DEP/NAT	SERVICE STAT. MIN. SANTE	Accroissement de la population	Variables indicant	
		DECF_O_4		Nombre de décès féminins 0-4 ans	ARR/DEP/NAT	SERVICE STAT. MIN. SANTE	Taux de mortalité	évolution de la population	
		DECM_5_9			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE	Taux de fecondité	et problèmes particuliers	
		DECF_5_9			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE	Evolution structurelle	de santé ou d'anomie	
		DECM_10_14			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE	de la population	(déstructuration d'un groupe)	
		DECF_10_14			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECM_15_19			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECF_15_19			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECM_20_24			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECF_20_24			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECM_25_29			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECF_25_29			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECM_30_34			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECF_30_34			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECM_35_39			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECF_35_39			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECM_40_44			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECF_40_44			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECM_45_49			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECF_45_49			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECM_50_54			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECF_50_54			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECM_55_59			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECF_55_59			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			
		DECM_60_64			ARR/DEP/NAT	SERVICE STAT. MIN. SANTE			

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED1B		DECF_60_64			ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		DECM_65_69			ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		DECF_65_69			ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		DECM_70_74			ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		DECF_70_74			ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		DECM_75_79			ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		DECF_75_79			ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		DECM_80PL			ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		DECF_80PL			ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		Structure spaciale de la population							
		POP_URB		Nombre de la Population Urbaine	ARR/DEP/NAT	RECENSEMENT 1988	Répartition urbaine/Rurale	Niveau urbanisme	
		POP_RUR		Nombre de la Population rurale	ARR/DEP/NAT	RECENSEMENT 1988			
		POP_PAST		Nombre de la Population pastorale	ARR/DEP/NAT	RECENSEMENT 1988	Pop rur sedentaire/pastorale	Structure economique de	
		POP_SED		Nombre de la Population sédentaire	ARR/DEP/NAT	RECENSEMENT 1988		la population rurale	
		Structure ethnique de la population							
		POP_HAUSSA		Effectifs population Haussa	ARR/DEP/NAT	RECENSEMENT 1988			
		POP_ZERMA		Effectifs population d'jerma	ARR/DEP/NAT	RECENSEMENT 1988			
		POP_PEULH		Effectifs population Peulh	ARR/DEP/NAT	RECENSEMENT 1988	% Pop par ethnie	Structure ethnique de	
		POP_TUAREG		Effectifs population Tamachek	ARR/DEP/NAT	RECENSEMENT 1988		population	
		POP_KANOU		Effectifs population Kanouri + Manga	ARR/DEP/NAT	RECENSEMENT 1988			
		POP_TOUB		Effectifs population Toubou	ARR/DEP/NAT				
		POP_ARAB		Effectifs population Arabes	ARR/DEP/NAT				
		POP_GOUR		Effectifs population Gourma	ARR/DEP/NAT				
		POP_AUTRE		Effectifs population (Autres)	ARR/DEP/NAT	RECENSEMENT 1988			
		Population active							
		P_SALARIE		Nombre de la main d'oeuvre salarial	ARR/DEP/NAT	RECENSEMENT 1988	% population actif salarié	Premières indicateurs de	Question de disponibilité d'informations
		[illegible]		Nombre de fonctionnaires	ARR/DEP/NAT	RECENSEMENT 1988	% pop actif fonctionnaires	différentiation économique	

E3

92

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED1B									
	Population active par Branche d'activités economique								
		PA_AG_ELEV		Pop. active dans l'Agric, Chase, Elev, Pêche	DEP/NAT				
		PA_IND_EX		Pop. active dans l'Industrie extractives	DEP/NAT				
		PA_IND_MAN		Pop. active dans l'Industrie manufacturies	DEP/NAT				
		PA_EL_GZ_E		Pop. active dans l'Electricité & Gaz & Eau					
		PA_BAT_TP		Pop. active dans le Batiment et Travaux Publics					
		PA_COMMER		Pop. active dans le Commerce de gros, et Betail, Restaur. et Hôtel					
		PA_TRANSP		Pop. active dans le Transport, Entrepots					
		PA_BANQUES		Pop. active dans le Banques, Assurance, Affaires Immob. Sces fournis au Entreprises					
		PA_SERVICE		Pop. active dans les services fournis à la collectivités, Soc., et personnels					
		PA_N_DECL		Pop. active dans les activités non declare ou mal designées					
		Population scolarisable							
		POP_SCOL		Nombre de la population scolarisable	ARR/DEP/NAT	RECENSEMENT 1988	Taux scolarisation	Niveau insturction général	Ressources humaines
		Personnes par ménage							
		NBR_MEN_U		Nombre de ménages urbaines	DEP/NAT	RECENSEMENT 1988	Moyenne des personnes/Ménage	Taille d'unité production/consomation	Variable de base en économie agricole
		NBR_MEN_R		Nombre de ménages ruraux	DEP/NAT				
	Population selon la situation d'activités								
		Population active							
		PA_T_ACTIF		Population totale active	DEP/NAT	Recensement 77/88			
		PA_T_OCCU		Population active occupée	DEP/NAT	Recensement 77/88			
		PA_S_TR		Population active sans travail	DEP/NAT	Recensement 77/88			Population active sans travail = La
		Population inactive							
		PAI_T_INAC		Population totale inactive	DEP/NAT	Recensement 77/88			population active qui cherche 1er emploi
		PAI_F_FOY		Population totale des femmes au foyers inactive	DEP/NAT	Recensement 77/88			y'compris les chomeurs
		PAI_EL_ET		Population totale des élèves et etudiants inactive	DEP/NAT	Recensement 77/88			
		PAI_RETR		Population inactive	DEP/NAT	Recensement 77/88			
		PAI_AUTRE		Population autres inactive	DEP/NAT	Recensement 77/88			Population autres = Veillards,

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
									malade, infirmes, enfants et non declarés
SED1B									
		Taux croissance							
		TX_CROISS		Taux de croissance	ARR/DEP/NAT	RECENSEMENT 1988			
		NB_DECES		Nombre totales de décés	ARR/DEP/NAT	RECENSEMENT 1988			
		NAISS_M		Nombre de naissance Masculine	ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		NAISS_F		Nombre de naissance Féminine	ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		TOTM_POP		Total population Masculine	ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		TOTF_POP		Total population Féminine	ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		TOTPOP		Total population generale	ARR/DEP/NAT	SERVICE STAT MIN SANTE			
		Infrastructure Routiéres							
SED2B		ROUT_BIT		Routes bitumées	ARR/DEP/NAT	BGR/TP	Indices d'enclavement/	Variables surtout déstinées à contribuer	Variables qui n'évolueront pas
		ROUT_TM		Routes en terre moderne	ARR/DEP/NAT	BGR/TP	désenclavement	à des indicateurs de centralité et à des	rapidement, suivi assuré par le Bureau
		ROUT_TS		Routes en terre sommaire	ARR/DEP/NAT				
		PIST_RUR		Piste rurales	ARR/DEP/NAT	BGR/TP	Indice infrastructure	suivis de situation économique	de Gestion Routière, Min L'Equipement
			Climatologie						
		PLUV_ANN		Pluviométrie annuelle	ARR/DEP/NAT	METEO ET ANNUAIRE AGRIC		Indices de la situation pluviométrique	Situation suivies de près sur
		JOUR_PLUIE		Nombre de jours de pluie	ARR/DEP/NAT	METEO ET ANNUAIRE AGRIC	Mesures de la situation	et climatologique	l'ensemble du pays Utilité de
		TEM_MX_MAI		Température maximale en Mai	ARR/DEP/NAT	METEO ET ANNUAIRE AGRIC	pluviométrique	Contribution aux indicateurs de la	certains indicateurs inclus
		TEM_MN_MAI		Température minimale en Mai	ARR/DEP/NAT	METEO ET ANNUAIRE AGRIC	Mesures de la situation	situation agricole	(température et excès (sit eaux de
		TEM_MX_AOUT		Température maximale en Août	ARR/DEP/NAT	METEO ET ANNUAIRE AGRIC	climatologique générale		surface) à revoir
		TEM_MN_AOUT		Température minimal en Août	ARR/DEP/NAT	METEO ET ANNUAIRE AGRIC			
		Production Minières							
		PD_URANIUM		Production d'uranium	DEP/NAT	RAPPORT TRIM DIV MINES	Production par ressource	Evolution du secteur	Informations ventilées par minéral
		PD_CASSIT		Production de Cassitérite	DEP/NAT	RAPPORT TRIM DIV MINES	Production globale	Importance économique globale, par	plutôt que par aire géographique
		PD_CHARBON		Production de Charbon	DEP/NAT	SONICHAP		ressource	Données disponibles au niveau des
		PD_CHAUX		Production de Chaux	DEP/NAT	SONICHAUX			compagnies exploitantes

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED2B									
		VA_URANIUM		Valeur Ajoutée d'uranium en F cfa	DEP/NAT	RAPPORT TRIM DIV. MINES	Valeur ajoutée par ressource	Indices économiques	
		VA_CASSIT		Valeur Ajoutée de Cassiterite en Fcfa	DEP/NAT	RAPPORT TRIM DIV MINES		Evolution économique du secteur	
		VA_CHARBON		Valeur Ajoutée de Charbon en Fcfa	DEP/NAT	SONICHAR			
		VA_CHAUX		Valeur Ajoutée de Chaux en Fcfa	DEP/NAT	SONICHAUX			
			Emplois Miniers						
		EM_URANIUM		Nombre employés secteur Uranium	DEP/NAT	RAPPORT TRIM DIV MINES	Emplois dans le secteur	Evolution d'emplois dans le secteur	
		EM_CASSIT		Nombre employés secteur Cassiterite	DEP/NAT	RAPPORT TRIM DIV MINES	Emplois par ressource		
		EM_CHARBON		Nombre employés secteur Charbon	DEP/NAT	SONICHAR			
		EM_CHAUX		Nombre employés secteur Chaux	DEP/NAT	SONICHAUX			
		INV_MINES		Investissement Publics en millions Fcfa	DEP/NAT	DFI/DEPP M PLAN			
	ENERGIE	**Consommation Electrique/Hyrocarbures**							
		CONS_ELEC		Consommat électrique en Kw	DEP/NAT	NIGELEC	Distribution électricité par	Evolution consomation	Statistique urbaine
		CONS_HYDR		Consommat hydrocarbures	DEP/NAT	Rapport trim Div Energie	par departement/arrond	Evolution consomation	
		CONS_AB_BT		Nombre abonnés bas tension					
		CONS_AB_MT		Nombre abonnés haut tension					
		CONS_V_BT		Energie vendu en KW bas tension					
		CONS_V_MT		Energie vendu en KW haut tension					
		CONS_BT_CFA		Energie vendu en CFA bas tension				Apport à indicateurs économiques et	Statistiques urbaines et au niveau
		CONS_MT_CFA		Energie vendu en CFA haut tension				industriels	département
		Production d'energie par source (en kw)							
		PROD_NIGEL		Production d'energie de la NIGELEC	ARR/DEP/NAT	Min Mines/NIGELEC			
		PROD_SONIC		Production d'energie de la SONICHARE	DEP/NAT	Min Mines/NIGELEC			
		PROD_IMPORT		Production d'energie importée	NATIONALE	Min Mines/NIGELEC			
		[illegible]		Employés		NIGELEC			
		[illegible]		Investissement Publics en Fcfa	ARR/DEP/NAT	DFI/M PLAN			

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED2B									
Transport/Commerce									
		Catégorie de permis de conduire							
		TYPE_P_A1		Nbre de permis A1 pour le moto cycl > 125 m3	ARR/DEP/NAT	Min Transport/Tourisme			
		TYPE_P_A		Nbre de permis A pour moto cycl < ou = 125 m3	ARR/DEP/NAT	Min Transport/Tourisme			
		TYPE_P_CE		Nbre de permis CE pour le Autocars	ARR/DEP/NAT	Min Transport/Tourisme			
		TYPE_P_D		Nbre de permis D pour les voitures poids-lourds	ARR/DEP/NAT	Min Transport/Tourisme			
		TYPE_P_T		Nbre de permis T pour les Tracteurs agricoles	ARR/DEP/NAT	Min Transport/Tourisme			
		Accidents par type de permis de conduire							
		TYPE_AC_A1		Nbre d'accidents avec le permit A1	DEP/NAT	Min Transport/Tourisme			
		TYPE_AC_A		Nbre d'accidents avec le permis A					
		TYPE_AC_CE		Nbre d'accidents avec le permis CE					
		TYPE_AC_D		Nbre d'accidents avec le permis D					
		TYPE_AC_T		Nbre d'accidents avec le permis T					
		Véhicules immatriculés pour la 1er fois							
		MOTO_125_1		Nombre des motos = 125 m3	DEP/NAT	RAP ANNUEL MIN TRANSP	Effectifs totales et par	Indices économiques	Informations dans ce secteur
		MOTO_125_2		Nombre des motos = > 125 m3	DEP/NAT	RAP ANNUEL MIN TRANSP	catégorie	Indices de différentiation	disponibles au niveau national et
		VE_PERS		Nombre de vehicules personnels	DEP/NAT			Mesures de services	département
		VE_CAMMION		Nombre de camionnette 9 places	DEP/NAT			Evolution des effectifs	
		VE_CAMIONS		Nombre de camions	DEP/NAT				
		VE_REMORQ		Nombre de remorque	DEP/NAT				
		VE_AUTOCAR		Nombre de Autocars	DEP/NAT				
		VE_TRANCT		Nombre de tracteurs agricoles sans permis	DEP/NAT				
		Véhicules mise en circulation immatriculés							
		MOT 125 1		Nombre des motos = 125 m3	DEP/NAT	RAP ANNUEL MIN TRANSP	Effectifs totales et par	Indices économiques	Informations dans ce secteur
		MOT 125 2		Nombre des motos = > 125 m3	DEP/NAT	RAP ANNUEL MIN TRANSP	catégorie	Indices de différentiation	disponibles au niveau national et
		CI PERS		Nombre de vehicules personnels	DEP/NAT			Mesures de services	département
		CI CAMMION		Nombre de camionnette 9 places	DEP/NAT			Evolution des effectifs	

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED2B									
		CI_CAMIONS		Nombre de camions	DEP/NAT				Données disponibles soit en circulation moyenne soit en circulation maximale et minimale dans l'année
		CI_REMORQ		Nombre de remorque	DEP/NAT				
		CI_AUTOCAR		Nombre de Autocars	DEP/NAT				
		CI_TRANCT		Nombre de tracteurs agricoles sans permis	DEP/NAT				
HYDRAULIQUE		Modes distribution							
		AEP_URB		Nombre d'AEP Urbaines	ARR/DEP/NAT	RAP. MHE	Population servie	Couverture	Secteur faible en statistiques recueillies au niveau du Ministère, informations à rechercher dans les rapports de projets
		AEP_VILLAG		Nombre d'AEP Villages	ARR/DEP/NAT	RAP. MHE		Evolution du secteur	
		SD_RETENU		Nombre des retenues				Indices de services (différentiation)	
		SD_POMPES		Nombre de pompes					
		SD_PUITS		Nombre de puits					
		SD_FORAGES		Nombre de forages					
		SD_AUTRES		Nombre sources d'eau autres					
		Type d'ouvrages							
		PUITS_TRAD		Nombre de puits traditionnels	ARR/DEP/NAT	RAP. MHE	Distribution par catégorie	Couverture/besoins	A rechercher indicateurs d'utilisation de points d'eau modernes, indicateurs de résultats d'efforts en animation, indicateurs de prise en charge locale d'entretien de pompes (i.e. comités ou caisses villageoises)
		PUITS_MOD		Nombre de puits modernes cimentés	ARR/DEP/NAT	RAP. MHE	Pts d'eau modernes/population	Evolution du secteur	
		FORAG_PUITS		Nombre de forages/puits	ARR/DEP/NAT	RAP. MHE	Pts d'eau modernes/trad	Indices de services	
		POMP_MARCH		Nombre de pompes en marche	ARR/DEP/NAT	RAP. MHE			
		ZONE_POUISA		Zones de puisards					
		PUIT_TR_AME		Nombre de puits trad. améliorés					
		PUITS_MARAI		Nombre de puits maraichers					
		PUITS_CIMENT		Nombre de puits cimentés					
		FORAG_EXPL		Nombre de forages exploitables					
		FORAG_PAST		Nombre forages pastoraux					
		SOND_RECON		Nombre de sondage reconnaissance					
		POINT_PRIVES		Nombre de points eau privés					
		ADDUCT_URB		Nombre adduction urbaine					
		SOURCE_EAU		Nombre de sources d'eau					
		NBRE_MARES		Nombre de mares					
		NBRE_BARRAG		Nombre des barrages					
		POINTS_EAU		Nombre de cours d'eau permanents	ARR/DEP/NAT	RAP. MHE			
		POMP_M_HUM		Nombre de pompe motricité humaine					
		POINT_AUTR		Nombre d'autres points d'eau	ARR/DEP/NAT	RAP. MHE			
		INV_HYDR		Investissement Publics en millions Fcfa	DEP/NAT	DFI/DPP M. PLAN			

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED2B			URBANISME						
		NBR_H_LOT		Nombre de hectares lotis	ARR/DEP/NAT	DIR URBANISME/MAIRIE		Indices économiques	CPCT= Caisse de Prêt
		NBR_PARC		Nombre de parcelle				Indices de différentiation	Collectivité Territoriale
		NBR_F_CPCT		Nombre de parcelle sur fin. CPCT	ARR/DEP/NAT	DIR URBANISME/MAIRIE			
		NBR_F_PRO		Nombre de parcelle sur fin. propre	ARR/DEP/NAT				
		MONT_CPCT		Montant financement CPCT	ARR/DEP/NAT				
		MONT_F_PRO		Montant financement propre	ARR/DEP/NAT				
		ASAINISSEMENT							
		METR_CAN		Nombre de metres de canaux	ARR/DEP/NAT	RAP MIN TP		Indices de services	
		INV_URB		Investissement Publics en milions Fcfa	DEP/NAT	DFI/DPP M PLAN		Evolution de l'investissements	
		POSTES ET TELECOMMUNICATIONS							
		ABON_TELE		Nombre d'abonnés téléphone	ARR/DEP/NAT	RAP MIN PTT	Montat/Population servie	Evol secteur, indices différentiation	
		ABON_TELX		Nombre d'abonnés telex	DEP/NAT	RAP MIN PTT	Montant moyen de mandats		Disponibilité d'informations à verifier
		NBR_M_EM_IN		Montant de mandats emis interne	ARR/DEP/NAT	RAP MIN PTT		Indicateurs économiques i.e. de	
		NBR_M_EM_EX		Montant de mandats emis externe	ARR/DEP/NAT	RAP MIN PTT		ressources externes (ressortissants)	Disponibilité d'informations à verifier
		NBR_M_P_INT		Montant de mandats payés interne	ARR/DEP/NAT				
		NBR_M_P_EXT		Montant de mandats payés externe	ARR/DEP/NAT				
		INV_TELECO		Investissement Publics en milions Fcfa	DEP/NAT	RAP MIN PTT	Montant moyen de mandats	ressources externes (ressortissants)	Disponibilité d'informations à verifier
	SANTE		Infrastructure						
		NB_HOPIT		Nombre Hopitaux	ARR/DEP/NAT	Annuaires SANTE	Couverture géographique	Couverture en services sanitaires	Voir un consultant de WHO "Measurement
		LITS_HOPIT		Nombre de lits à l'Hôpital	ARR/DEP/NAT	Annuaires SANTE	Couverture démographique		of Levels of Health" pour discussion
		NB_DISP_PM		Nombre des dispensaires/poste medicaux	ARR/DEP/NAT	Annuaires SANTE	Infrastruc totales et	Evolution du secteur en infrastructure	de mesures de zone de couverture en
		NB_C_MEDIC		Nombre des centre medicaux	ARR/DEP/NAT		par categorie		milieu Africain
		NB_CEN_PMI		Nombre de Centre PMI	ARR/DEP/NAT	Annuaires SANTE			
		NB_MATER		Nombre des maternités					

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED3B			Personnel						
		PERS_ADMIN		Nombre de personnel Administratif	DEP/NAT	Annuaires SANTE	Effectifs de personnel par	Distribution des ressources personnel	Niveau correspondants à des catégories
		PERS_MEDEC		Nombre de Médécins	DEP/NAT	Annuaires SANTE	catégorie	Niveau de couverture en ressources	de personnel suggerés par le Directeur
		PERS_INFIRM		Nombre de Infirmiers d'Etat	ARR/DEP/NAT	Annuaires SANTE	Effectifs de personnel par	personnel	du bureau de statistiques du M. Santé
		PERS_SAGEF		Nombre de Sages-femmes	ARR/DEP/NAT	Annuaires SANTE	niveau (catégories à	Evolution du secteur en ressources	
		PERS_MATRO		Nombre de Matrones	ARR/DEP/NAT	Annuaires SANTE	déterminer)	personnel	
		PERS_I_CER		Effectif infirmiès certifiés					
			Natalité						
		MORTS_NES		Nombre de Morts-nés	ARR/DEP/NAT	Annuaires SANTE			1) Données pas encore disponibles pour
		MORT_MATER		Nombre de Morts maternelles	ARR/DEP/NAT	Annuaires SANTE	Indices situation maternelle	Indices PQLI	l'ensemble du pays - actuellement pour
		MORT_NNPR		Nombre de mortalité neo-natale precoce	ARR/DEP/NAT	Annuaires SANTE	Taux de natalité	Evolution démographique	la Commune de Niamey seul - Mais
		MORT_NNTR		Nbre de morts neo-natale tardives (10 jours à 3 mois	ARR/DEP/NAT	Annuaires SANTE	Mesures de mortalité infactile	Indices de couverture de soins maternels	prévus avant fin 1990
		AVOR_PRECO		Nombre d'avortements precoce < 3 mois	ARR/DEP/NAT	Annuaires SANTE		Indices d'utilisation de services	2) PQLI=indice standard de qualité de
		AVOR_TARDIV		Nombre d'avortements tardifs > 6 mois	ARR/DEP/NAT	Annuaires SANTE		modernes	vie physique (Physical Quality of Life
		G_MULTIPAR		Nombre des femmes accouchant > 6 gosses	ARR/DEP/NAT	Annuaires SANTE		Indices situation sociale (i.e. mères	Index)
		MULTIPARES		Nombre des femmes accouchant 2 - 6 gosses	ARR/DEP/NAT	Annuaires SANTE		célibataires)	3) Ces indicateurs seront
		PRIMIPARES		Nombre de Mortalités maternelles	ARR/DEP/NAT	Annuaires SANTE			contributions importantes si ils sont
		MERE_CELER		Nombre de Mères celibataires	ARR/DEP/NAT	Annuaires SANTE	Indice utilisation services		disponibles de façon régulière,
		PARTUR_DOM		Nombre de Parturition à domicile					cependant, la nécessité de ce niveau
		AGE_PRIMI		Age moyenne de primiparité					détail est à étudier
			Consultations						
		CONS_PREV		Nombre de consultations Préventives	DEP/NAT	Annuaires SANTE	Distribution de consultations	Indices de demande et de couverture en	Voir secteur Santé - Données axées sur
		CONS_CUR		Nombre de consultations Curatives	DEP/NAT	Annuaires SANTE	par catégorie	soins médicales	centres hôpitaliers
			Hospitalisations						
		OCCUP_LITS		Taux d'occupation hospitalières des lits	DEP/NAT	Annuaires SANTE	Indices d'utilisation de		Voir secteur Santé - Données axées sur
		ROTA_LITS		Nombre de rotation lits	DEP/NAT	Annuaires SANTE	services		centres hôpitaliers
		DUR_SEJOUR		Durée moyenne séjour	DEP/NAT	Annuaires SANTE	Indices nature	Evolution de demande et de couverture	
		SORT_GUER		Nombre de sortant guéris	DEP/NAT	Annuaires SANTE	d'interventions et de	Utilisations de services	
		SORT_DECES		Nombre de Sortant décédés	DEP/NAT	Annuaires SANTE	résultats	Evolution des résultats dans le secteur	
		SORT_EVAS		Nombre de Sortant évadés	DEP/NAT	Annuaires SANTE			
			Vaccinations						
		VAC_BCG		Nombre de vaccinations au BCG	ARR/DEP/NAT	Annuaires SANTE			Catégorie à revoir, données
		VAC_ROUG		Nombre de vaccinations aux Rougiole					
		VAC_VAT2		Nombre de vaccinations au VAT2					

E10

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED3B		VAC_DTC3		Nombre de vaccinations aux DTC3					
		INV_SANTE		Investissement Publics en millions Fcfa	DEP/NAT	BUDGET/ M PLAN	Evolution de l'investissement		définitives pas disponibles à present
	EDUCATION								
		Population par niveau enseignement							
		NIV_CEPE		Nombre de population avec le niveau CEPE	ARR/DEP/NAT	RECENSEMENT 1988	Effectifs scolaires par	Evolution population scolarisée	Catégories niveau enseignement à revoir
		NIV_BEPC		Nombre de population avec le niveau BEPC		RECENSEMENT 1988	niveau et par sexe	Evolution situation scolaire par sexe	
		NIV_BAC		Nombre de population avec le niveau BAC		RECENSEMENT 1988			
		NIV_UNIV		Nbre de pop. avec le Niveau Univ ou plus		RECENSEMENT 1988			
		Etablissements Publics							
		G_PRIM_PU		Nombre Garçons - primaire	ARR/DEP/NAT	Annuaires Min Education	Effectif scolaires par niveau	Evolution population scolarisée	Variables de base pour suivi du secteur
		F_PRIM_PU		Nombre Filles - primaires	ARR/DEP/NAT	Annuaires Min Education	et par sexe	Evolution situation scolaire par sexe	
		G_CYCLE1_PU		Nombre Garçons - secondaire 1er cycle	ARR/DEP/NAT	Annuaires Min Education		Evolution demande	
		F_CYCLE1_PU		Nombre Filles - secondaire 1er cycle	ARR/DEP/NAT	Annuaires Min Education			
		G_CYCLE2_PU		Nombre Garçons - secondaire 2ème cycle	ARR/DEP/NAT	Annuaires Min Education	Taux d'entrée et d'avancement	Evolution demande	
		F_CYCLE2_PU		Nombre Filles - secondaire 2ème cycle	ARR/DEP/NAT	Annuaires Min Education			
		G_CY2_TE_PU		Nombre Garçons - Lycée Tech	ARR/DEP/NAT	Annuaires Min Education			
		F_CYL_TE_PU		Nombre Filles - Lycée Tech	ARR/DEP/NAT	Annuaires Min Education			
					ARR/DEP/NAT	Annuaires Min Education			
		Etablissements Privées							
		G_PRIM_PR		Nombre Garçons - primaire	ARR/DEP/NAT	Annuaires Min Education	Effectif scolaires par niveau	Evolution population scolarisée	
		F_PRIM_PR		Nombre Filles - primaires	ARR/DEP/NAT	Annuaires Min Education	et par sexe	Evolution situation scolaire par sexe	
		G_CYCLE1_PR		Nombre Garçons - secondaire 1er cycle	ARR/DEP/NAT	Annuaires Min Education		Evolution demande	
		F_CYCLE1_PR		Nombre Filles - secondaire 1er cycle	ARR/DEP/NAT	Annuaires Min Education			
		G_CYCLE2_PR		Nombre Garçons - secondaire 2ème cycle	ARR/DEP/NAT	Annuaires Min Education	Taux d'entrée et d'avancement	Evolution demande	
		F_CYCLE2_PR		Nombre Filles - secondaire 2ème cycle	ARR/DEP/NAT	Annuaires Min Education			
					ARR/DEP/NAT	Annuaires Min Education			

E11

108

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED3B		Etablissements Professionnels							
		Centre de Formation et de Recyclage							
		CFR_E_AG_T		Effectifs niveau agent Tech.	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		CFR_D_AG_T		Effectifs diplomé niveau Agent Tech	NAT	Annuaires Min. Education			
		CFR_E_ADJ_T		Effectifs niveau Adj. Technique	NAT	Annuaires Min. Education			
		CFR_D_ADJ_T		Effectifs diplomé niveau Adj. Technique	NAT	Annuaires Min. Education			
		CFR_E_PROG		Effectifs niveau programmeurs	NAT	Annuaires Min. Education			
		CFR_D_PROG		Effectifs diplomé niveau programmeurs	NAT	Annuaires Min. Education			
	Centre Nat. d'Instruction en Poste et Telecommunication								
		CNIPT_E_CER		Effectifs niveau certifié	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		CNIPT_D_CER		Effectifs diplomé niveau certifié	NAT	Annuaires Min. Education			
		CNIPT_E_MOY		Effectifs niveau moyen	NAT	Annuaires Min. Education			
		CNIPT_D_MOY		Effectifs diplomé niveau moyen	NAT	Annuaires Min. Education			
	Centre de Formation et de Perfectionnement Professionnel								
		CFPP_E_CY_L		Effectifs cycle long	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		CFPP_D_CY_L		Effectifs diplomés cycle long	NAT	Annuaires Min. Education			
		CFPP_E_CY_C		Effectifs cycle cours	NAT	Annuaires Min. Education			
		CFPP_D_CY_C		Effectifs diplomés cycle cours	NAT	Annuaires Min. Education			
		Ecole Nationale Santé Publique							
		ENSP_N_CERT		Effectifs niveau certifié	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		ENSP_D_CERT		Effectifs diplomé niveau certifié	NAT	Annuaires Min. Education			
		ENSP_N_MOY		Effectifs niveau moyen	NAT	Annuaires Min. Education			
		ENSP_D_MOY		Effectifs diplomé niveau moyen	NAT	Annuaires Min. Education			
		ENSP_N_SUP		Effectifs niveau sup	NAT	Annuaires Min. Education			
		ENSP_D_SUP		Effectifs diplomé niveau sup	NAT	Annuaires Min. Education			
		Centre Technique de Kaimaharo							
		CTK_EFF		Effectifs inscrits	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		CTK_DIPL		Effectifs diplomés	NAT	Annuaires Min. Education			

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED3B									
Institut de formation aux Technique de l'information et de la Communication									
		IFTIC_N_MOY		Effectifs niveau moyen	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		IFTIC_N_MOY		Effectifs diplomés niveau moyen	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		IFTIC_D_SUP		Effectifs niveau sup.	NAT	Annuaires Min. Education			
		IFTIC_D_SUP		Effectifs diplomé niveau sup.					
	Institut de Perfectionnement de Developement Rural								
		IPDR_N_MOY		Effectifs niveau moyen	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		IPDR_N_MOY		Effectifs diplomés niveau moyen					
		Ecole Normale de Tillabery							
		ENTI_EFF		Effectifs inscrits	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		ENTI_DIP		Effectifs diplômés					
		ENTI_PROF		Effectifs professeurs					
		Ecole Normale de Dosso							
		END_EFF		Effectifs inscrits	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		END_DIP		Effectifs diplômés					
		END_PROF		Effectifs professeurs					
		Ecole Normale de Tahoua							
		ENTA_EFF		Effectifs inscrits	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
		ENTA_DIP		Effectifs diplômés					
		ENTA_PROF		Effectifs professeurs					
		Ecole Normale de Zinder							
		[illegible]		Effectifs inscrits	NAT	Annuaires Min. Education	Effectif scolaires par niveau	Evolution population scolarisée	
				Effectifs diplômés					
				[illegible]					

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED3B		**Etudiants à l'Université**							
		ETU_NG_FS		Etudiants Nigériens à la Fac. de Sciences	NAT	Annuaires Min. Education	Effectif etudiants par facultés	Evolution population scolarisée	
		ETU_ET_FS		Etudiants Etrangers à la Fac. de Sciences	NAT				
		ETU_NG_FA		Etudiants Nigériens à la Fac. d'Agronomie	NAT				
		ETU_ET_FA		Etudiants Etrangers à la Fac. d'Agronomie	NAT				
		ETU_NG_FSS		Et. Nigériens à la Fac. de Sciences et de la Santé	NAT				
		ETU_ET_FSS		Et. Etrangers à la Fac. de Sciences et de la Santé	NAT				
		ET_NG_FSCEJ		Et. Nigériens à la Fac. de Sciences Econ. et Jurid.	NAT				
		ET_ET_FSCEJ		Et. Etrangers à la Fac. de Sciences Econ. et Jurid.	NAT				
		ETU_NG_FP		Etudiants Nigériens à la Fac. de Pedagogie	NAT				
		ETU_ET_FP		Etudiants Etrangers à la Fac. de Pedagogie	NAT				
		ETU_NG_FLSH		Et. Ng. à la Fac. des Lettres et Sci. Humaines	NAT				
		ETU_ET_FLSH		Et. Etran. à la Fac. des Lettres et Sci. Humaines	NAT				
		Profeseurs à l'Université							
		PROF_NG_FS		Professeurs Nigériens à la Fac. de Sciences	NAT	Annuaires Min. Education	Effectifs professeurs par facultés		
		PROF_ET_FS		Professeurs Etrangers à la Fac. de Sciences	NAT				
		PROF_NG_FA		Professeurs Nigériens à la Fac. d'Agronomie	NAT				
		PROF_ET_FA		Professeurs Etrangers à la Fac. d'Agronomie	NAT				
		PR_NG_FSS		Prof. Ng à la Fac. de Sciences et de la Santé	NAT				
		PR_ET_FSS		Prof. Etrang. à la Fac. de Sci. et de la Santé	NAT				
		P_NG_FSCEJ		Prof. Ng à la Fac. de Sciences Econ. et Jurid.	NAT				
		P_ET_FSCEJ		Prof. Etrang. à la Fac. de Sciences Econ. et Jurid.	NAT				
		PROF_NG_FP		Professeurs Nigériens à la Fac. de Pedagogie	NAT				
		PROF_ET_FP		Prof. Etrangers à la Fac. de Pedagogie	NAT				
		PR_NG_FLSH		Prof. Ng à la Fac. des Lettres et Sci. Humaines	NAT				
		PR_ET_FLSH		Prof. Etran. à la Fac. des Lettres et Sci. Humaine	NAT				
		Candidats présentées aux examen							
		C_PRE_CFEPD		Nbre de candidats presentés au exam. CFEPD	ARR/DEP/NAT	Annuaires Min. Education			
		C_ADM_CFEPD		Nbre de candidats admis au exam. CFEPD					
		C_PRE_BEPC		Nbre de candidats presentés au exam. BEPC	ARR/DEP/NAT	Annuaires Min. Education			
		C_ADM_BEPC		Nbre de candidats admis au exam. BEPC					
		C_PRE_BAC		Nbre de candidats presentés au exam. BAC	ARR/DEP/NAT	Annuaires Min. Education			
		C_ADM_BAC		Nbre de candidats admis au exam. BAC					

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED3B									
	Redoublements Etablissements Publics								
		REDOU_CM2		Nbre de Redoublements primaire	ARR/DEP/NAT	Annuaires Min Education			
		REDOU_1CYL		Nombre de Redoublements 1er cycle					
		REDOU_2CYL		Nombre de Redoublements 2 eme cycle					
	Salle de classes Etablissement Publics								
		SALL_PRIM		Nbre classes-primaires au total	ARR/DEP/NAT	Annuaires Min. Education	Classes par niveau et par	Evolution couverture scolaire/en	
		SALL_SECON		Nbre classes-secondaires au total			qualité infrastructure	infrastructure	
		N_S_DUR_PR		Nombre de salle de classe en dur au primaire			Eléves/classe/niveau		
		N_S_S_D_PR		Nbre de salle de classe en semi-dur au prim.					
		N_S_B_PR		Nombre de salle de classe en banco au prim.					
		N_S_1cyc		Nombre de salle de classe au 1 er cycle					
		N_S_2cyc		Nombre de salle de classe au 2 eme cycle					
			Enseignants						
		ENSEI_PRIM		Nombre d'enseignats au primaire	ARR/DEP/NAT	Annuaires Min Education	Nombres enseignats/élève	Couverture scolaire en personnel	Plus de détail voulu?
		INSTITUTEUR		Nombre d'enseignants instituteurs					
		INSTI-ADJ		Nombre d'enseignats instituteurs-adjoints					
		ENSEI_MONI		Nombre d'enseignats moniteurs					
		PR_1CYL_NG		Nombre professeurs Nigeriennes 1er cyle	ARR/DEP/NAT	Annuaires Min Education			
		PR_1CYL_ET		Nombre professeurs Etrangéres 1er cyle					
		PR_2CYL_NG		Nombre professeurs Nigeriennes 2ème cyle	ARR/DEP/NAT	Annuaires Min Education			
		PR_2CYL_ET		Nombre professeurs Etrangérs 2 ème cyle					
		PRO_TECH_NG		Nbre prof. Nig. au Lycées tech					
		PRO_TECH_ET		Nbre prof etrangérs au Lycée tech.	ARR/DEP/NAT	Annuaires Min Education			
		PRO_UNIV_NG		Nombre prof Nigérienne à l'Université					
		PRO_UNIV_ET		Nombre prof. Etrangérs à l'Université					
			Institutions						
		INST_PRIM		Nombre de Institutions Primaire	ARR/DEP/NAT	Annuaires Min Education			
		INST_1cyc		Nombre de Institutions 1 er cycle	ARR/DEP/NAT	Annuaires Min. Education			
		INST_2cyc		Nombre de Institutions 2 eme cycle	ARR/DEP/NAT	Annuaires Min Education			
		INV_EDUCA		Investissement Publics en millions Fcfa	DEP/NAT	Annuaires Min Education			

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED4B									
AGRICULTURE									
		Superficie cultivée							
		SUP_MIL		Mil (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV			
		SUP_SORG		Sorgho (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV			
		SUP_MAIS		Mais (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV	Superficies cultivées en	Evolution d'exploitation agricole	A rechercher: structure de production,
		SUP_RIZ		Riz (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV	total et par culture	Evolution importance par culture et par	marchés de main d'oeuvre agricole,
		SUP_NIEBE		Niébé (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV	Distribution cultures	catégorie de culture	structure de redevance foncier, autres
		SUP_COTON		Coton (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV	vivrières et commerciales	Variables de base pour calculs de de	indices de structure sociale agricole
		SUP_ARACH		Arachide (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV		redement et pour mesures	non-évidentes en statistiques
		SUP_BLE		Blé (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV		d'intensification et diversification	existantes
		SUP_MARAI		Maraichage (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV		agricole	
		SUP_AUTRE		Autre (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV			
		SUP_CULTVE		Total superficie cultivée (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV			
		SUP_IRRGEE		Total superficie irrigée (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV			
		SUP_IRRGLE		Total superficie irrigable (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV			
		SUP_COU_FO		Superficie couverture forestières (en hectares)	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV			
			Production						
		PROD_MIL		Production de Mil en tonnes	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV	Production totale et par	Evolution d'exploitation agricole	
		PROD_SORG		Production Sorgho en tonnes	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV	culture	Evolution importance par culture et par	
		PROD_MAIS		Mais	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV	Distribution de production	catégorie de culture	
		PROD_RIZ		Riz	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV	par catégorie et Valeurs de	Variables de base pour calculs de de	
		PROD_NIEBE		Niébé	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV	production	redement et pour mesures	
		PROD_COTON		Coton	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV		d'intensification et diversification	
		PROD_ARACH		Arachide	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV		agricole	
		PROD_BLE		Blé	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV		Production par exploitant	
		PROD_MARAI		Maraichage	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV			
		PROD_AUTRE		Autre	ARR/DEP/NAT	Annuaires Stat. MAG/ELEV			
			Crédit						
		CREDIT_SEMEN		Total Crédit pour Semences	ARR/DEP/NAT	Rap. CNCA	Crédit octroyé	Evolution de crédits par catégorie et	Disponibilité de ces données pas
		CREDIT_MATER		Total Crédit pour Matériel	ARR/DEP/NAT	Rap. CNCA	Distribution par catégorie	par sommes offertes	encore vérifiée
		CREDIT_ENGRA		Total Crédit pour Engrais	ARR/DEP/NAT	Rap. CNCA	Distribution par reçevant	Evolution d'offres et demandes	

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
		NB_DEM_CRE		Nombre demande crédit			Relation demande/octroi		
SED4B		NB_RECU_CR		Nombre crédit reçues					
			Encadreurs						
		AG_ENCAD		Nombre d'encadreurs Agricole	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Effectifs personnel/paysan	Evolution effectifs et de couverture	
			Matérial agricole						
		MAT_TRACAN		Nombre unités Traction animale	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Effectifs matériel par	Evolution de la technologie agricole	
		MAT_MECHAN		Nombre de matérial mechanisée	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	catégorie et par paysan	Indices d'intensification	
		MAT_IRRIG		Nombre de material d'irrigation	ARR/DEP/NAT	Annuaires Stat MAG/ELEV			
			Prix de Marché sur les principaux céréals						
		PRI_MIL_M		Prix du Marché sur le Mil					
		PRI_SORG_M		Prix du Marché sur le Sorgho					
		PRI_MAIS_M		Prix du marché sur le Maïs					
		PRI_RIZ_M		Prix du marché sur le Riz					
		PRI_NIEBE_M		Prix du marché sur le Niébé					
			Prix de Ferme sur les principaux céréals						
		PRI_MIL_F		Prix du ferme sur le Mil					
		PRI_SORG_F		Prix du ferme sur le Sorgho					
		PRI_MAIS_F		Prix du ferme sur le Maïs					
		PRI_RIZ_F		Prix du ferme sur le Riz					
		PRI_NIEBE_F		Prix du ferme sur le Niébé					
			Amenagement Hydro-Agricole						
		AHA_S_N_IR		Superficie nette irrigable					
		AHA_S_EX		Superficie exploitée					
		AHA_N_EXP		Nombre d'exploitations					
		AHA_P_MIL		Production du mil					
		AHA_P_SORG		Production du sorgho					
		AHA_P_MAIS		Production du maïs					
		AHA_P_RIZ		Production du riz					
		AHA_P_NIEB		Production du niébé					

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED4B									
		INV_AGRI		Investissement Publics en millions Fcfa					
RESOURCES ANIMALES									
		Nombre de Troupeaux							
		NB_BOVINS		Nombre de Bovins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Cheptel en unité standardisé	Evolution du cheptel	A rechercher, indicateurs de
		NB_OVINS		Ovins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	(i.e UBT)	Transformations structurelles	troupeaux/exploitant, indicateurs de
		NB_CAPRIN		Caprins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Proportions du cheptel par		structure de troupeaux, indicateurs de
		NB_CAMEL		Camelins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	espèce		proportions du troupeau possédé/prêté
		Vente de Troupeaux							
		VEN_BOVINS		Nombre Bovins Vendues	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Ventes par espèce par rapport	Indices d'économie rurale	A rechercher, sources de données
		VEN_OVINS		Ovins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	au total; ventes en unité	Evolution des marchés bétail	d'appoint permettant estimations de
		VEN_CAPRIN		Caprins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	standardisé, revenus	Situation pastorale	ventes hors marchés officiels (études
		VEN_CAMEL		Camelins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV		Transformations structurelles	de projets, etc)
		Prix au Marché							
		PRI_BOVINS		Bovins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Revenus globaux éleveurs	Mesures comparatives	
		PRI_OVINS		Ovins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Revenus par espèce	Evolution des prix, directe et en	
		PRI_CAPRIN		Caprins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	% fluctuation de prix	comparaison avec prix vivriers	
		PRI_CAMEL		Camelins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV			
			Abbatages						
		ABA_BOVINS		Nombre de Bovins abbatus	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Abattages par espèce	Indicateurs proximatives d'écoulement	
		ABA_OVINS		Ovins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Production viande approx		
		ABA_CAPRIN		Caprins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV			
		ABA_CAMEL		Camelins	ARR/DEP/NAT	Annuaires Stat MAG/ELEV			
		Encadreurs Ressources Animales							
		RA_ENCAD		Ressources Animales	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Effectifs personnel	Couverture personnel	
		INV_RES_AN		Investissement Publics en millions Fcfa	DF/M PLAN	Annuaires Stat MAG/ELEV			
FORETS/FAUNE									
		PERS_FORET		Nombre de personnel forêts	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Effectifs personnel catégorie	Evolution sit	Secteur faible en données recueillies
		PERS_FAUNE		Nombre de personnel faune	ARR/DEP/NAT	Annuaires Stat MAG/ELEV		Couverture per	régulièrement Informations en

BANQUE DE DONNEES SOCIO-ECONOMIQUE

LISTE DE VARIABLES DE LA BDSE

FICHIER	SECTEUR	CODES	CATEGORIES	DONNEES SIMPLES	NIVEAUX	SOURCES DE BASE	VARIABLES CALCULEES	INDICATEURS	OBSERVATIONS
SED4B		PERS_PECHE		Nombre de personnel Pêche	ARR/DEP/NAT	Annuaires Stat MAG/ELEV			
		Interventions forestières							catégories "pêche"pas verifiées
		PROD_PEPIN		Production Pépinière en plants	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Indice effort en reboisement	Evolution efforts reboisement	
		SUP_PL_HA		Nombre Superficies plantées en Ha	ARR/DEP/NAT	Annuaires Stat MAG/ELEV			
		SUP_PL_KM		Nombre Superficies plantées en Km					
		Permis coupe de bois							
		PERM_COUPE		Nombre de Permis coupe de bois	ARR/DEP/NAT	Annuaires Stat MAG/ELEV		Indicateur proximatif d'utilisation bois	
		Procès-verbaux dressés							
		PV_BRACON		Nombre de cas de Braconniers	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Indices actions illégales	Incateurs proximatifs d'efforts de	
		PV_BOIS_IL		Nombre de cas Commerce de bois illégal	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	dans ces domaines (?)	contrôle, succès de ces efforts	
		Distribution foyers ameliorés							
		FOYER_AMEL		Nombre de foyers ameliorés distribuées	ARR/DEP/NAT	Rap Min Mines/Energie	Indice couverture/acceptance	Appoint à estimations utilisation bois	
		Inventaires faune							
		INV_FAUNE		Investissement Publics en millions Fcfa	DFI/M PLAN	Budget D'Investiss /MP			
		Production poisson							
		PROD_POISS		Production poisson	ARR/DEP/NAT	Annuaires Stat MAG/ELEV	Prod brute, par catégories (?)	Indicateurs du secteur économique	
		INV_FORETS		Investissement Publics en millions Fcfa	DFI/M. PLAN	Budget D'Investiss /MP			

ANNEX F

SAP database protocol

DONNEES DE BASE

DOMAINE 1: POPULATION

s:

ATION/ZONE
ATION/ACTIVITE

DOMAINE 2: PRODUCTION VEGETALE

THEME 1: FACTEURS DE PRODUCTION

FICHIERS

3 - EXPLOITATION: EQUIPEMENT
4 - MATERIEL AGRICOLE: PRODUCTION ET IMPORTATION
5 - MATERIEL AGRICOLE: ACQUISITIONS ET STOCKS
6 - ANIMAUX DE LABOUR
7 - SEMENCES AMELIOREES: PRODUCTION ET COMMERCIALISATION
8 - SEMENCES AMELIOREES: PRIX MOYEN
9 - SEMENCES: PRODUCTION ET TAUX D'UTILISATION
10 - ENGRAIS ET PRODUITS PHYTOSANITAIRES: PRODUCTION ET IMPORTATION
11 - ENGRAIS ET PRODUITS PHYTOSANITAIRES: VENTES ET PRIX

THEME 2: PRODUCTION: PARAMETRES ET NIVEAU

FICHIERS

12 - PRODUCTION VEGETALE DE SAISON
13 - PRODUCTION VEGETALE HORS-SAISON
14 - CULTURES ASSOCIEES DE SAISON
15 - CULTURES ASSOCIEES HORS-SAISON

THEME 3: RESSOURCES ET EMPLOI DES CEREALES

FICHIERS

16 - IMPORTATION DES CEREALES
17 - EXPORTATION DES PRODUITS VEGETAUX
18 - AIDES ALIMENTAIRES
19 - COMMERCE NATIONAL DES CEREALES
20 - STOCK CEREALIERS: QUANTITES STOCKEES
21 - STOCK CEREALIERS: CAPACITE DE STOCKAGE
22 - CONSOMMATION HUMAINE DES CEREALES ET AUTRES UTILISATIONS
23 - CONSOMMATION HUMAINE APPARENTE

THEME 4: REVENUES ET DEPENSES DU SECTEUR DE LA PRODUCTION

FICHIERS

24 - PRIX DES PRODUITS CEREALIERS
25 - PRIX DES PRODUITS NON CEREALES
26 - PRIX D'IMPORTATIONS DES CEREALES
27 - PRIX D'EXPORTATION DES FOURNISSEURS
28 - PRIX D'EXPORTATION DES PRODUITS VEGETAUX

DOMAINE 3: PRODUCTION ANIMALE

THEME 1: FACTEURS DE PRODUCTION

FICHIERS

29 - ALIMENT BETAIL: PRODUCTION ET PRIX
30 - EQUIPEMENT - INFRASTRUCTURES
31 - SANTE ANIMALE
32 - PRODUITS SANITAIRES: PRODUCTION ET COMMERCIALISATION
33 - PRODUITS SANITAIRES: IMPORTATIONS

THEME 2: PARAMETRES DE PRODUCTION DU BETAIL

FICHIERS

34 - ABATTAGES
35 - EFFECTIFS BETAIL: SEXE ET CATEGORIE
36 - PARAMETRES DE LA DYNAMIQUE ET D'EXPLOITATION DU TROUPEAU
37 - PRODUITS ANIMAUX: PRODUCTION

THEME 3: COMMERCIALISATION

FICHIERS

38 - COMMERCE NATIONAL DU BETAIL: OFFRE ET VENTES
39 - COMMERCE NATIONAL DU BETAIL: PRIX
40 - COMMERCE NATIONAL DES PRODUITS ANIMAUX: PRIX
41 - IMPORTATION: BETAIL ET PRODUITS ANIMAUX
42 - EXPORTATION: BETAIL ET PRODUITS ANIMAUX

THEME 4: CONSOMMATION

FICHIERS

43 - CONSOMMATION DES PRODUITS ANIMAUX
44 - COMMERCE NATIONAL DU BETAIL: PRIX

DOMAINE 4: ENVIRONNEMENT

THEME 1: ENVIRONNEMENT ECONOMIQUE ET INSTITUTIONNEL

FICHIERS

45 - INDICATEURS ECONOMIQUES

ENVIRONNEMENT INSTITUTIONNEL (*)

THEME 2: ENVIRONNEMENT PHYSIQUE

FICHIERS

46 - PLUVIOMETRIE
47 - DESTINATION DES SUPERFICIES ET AMENAGEMENT HYDRO-AGRICOLE
48 - HYDROGRAPHIE

: RAPPORT PAR PAYS SUR L'ORGANISATION ADMINISTRATIVE ET INSTITUTIONNELLE

110

LISTE DES VARIABLES CONTENUES DANS LA CENTRALE D'INFORMATION

DOMAINE 1: DEMOGRAPHIE

FICHIER N 1:

Population urbaine active hommes
Population urbaine active femmes
Population urbaine non active hommes
Population urbaine non active femmes
Population urbaine active totale
Population urbaine totale femmes
Population urbaine totale hommes
Population urbaine totale
Population rurale sédentaire active hommes
Population rurale sédentaire active femmes
Population rurale sédentaire non active hommes
Population rurale sédentaire non active femmes
Population rurale nomade active hommes
Population rurale nomade active femmes
Population rurale nomade non active hommes
Population rurale nomade non active femmes
Population rurale totale active hommes
Population rurale totale active femmes
Population rurale totale non active hommes
Population rurale totale non active femmes
Population rurale sédentaire active totale
Population rurale nomades active totale
Population rurale sédentaire totale femmes
Population rurale sédentaire totale femmes
Population rurale sédentaire totale hommes
Population rurale nomade totale hommes
Population rurale nomade totale femmes
Population rurale totale hommes
Population rurale totale femmes
Population active totale hommes
Population active totale femmes
Population non active totale hommes
Population non active totale femmes
Population rurale sédentaire totale
Population rurale nomade totale
Population rurale totale
Population hommes totale
Population femmes totale
Population active totale
Population non active totale
Population totale

FICHIER N 2:

Exploitation - Personnes par genre d'activité: 1ère activité
Exploitation - Personnes par genre d'activité: 2ème activité
Exploitation - Personnes hommes par genre d'activité: 1ère activité
Exploitation - Personnes femmes par genre d'activité: 1ère activité
Exploitation - Personnes hommes: 2ème activité
Exploitatio - Personnes femmes: 2ème activité

DOMAINE 2: PRODUCTION VEGETALE

THEME 1: Facteurs de production

FICHIER N 3:

Exploitations equipées avec animaux de labour
Exploitationts equipées sans animaux de labour
Exploitations non equipées avec animaux de labour
Exploitations equipées totale
Exploitations non equippées totales
Exploitations avec animaux de labour totales
Exploitations sans animaux de labour totales
Exploitation total

FICHIER N 4:

Production de matériel agricole par type - Quantités
Production de matériel agricole par type - Prix
Importations de matériel agricole - Quantités
Importations de matériel agricole - Prix

FICHIER N 5:

Acquisitions de matériel agricole - Quantités
Acquisitions de matériel agricole - Prix
Stock de matériel

FICHIER N 6:

Animaux de labour-effectifs par espèces

FICHIER N 7:

Semences améliorées par produit: Production
Semences améliorées par produit: Commercialisation

FICHIER N 8:

Semences améliorées par produit: Prix moyen

FICHIER N 9:

Production de semences par produit
Taux d'utilisation par produit

FICHIER N 10:

Production des engrais et produits phytosanitaires par type: Quantité
Production des engrais et produits phytosanitaires par type: Prix
Importations des engrais et produits phytosanitaires par type: Quantité
Importations des engrais et produits phytosanitaires par type: Prix

FICHIER N 11:

Ventes des engrais et produits phytosanitaires par type: Quantité
Ventes des engrais et produits phytosanitaires par type: Prix officiel
Ventes des engrais et produits phytosanitaires par type: Prix de marché

THEME 2: Production: végétale: paramètres et niveau de production

FICHIER N 12:

Production végétale de saison: Superficie corrigée par produit
Production végétale de saison: Rendement corrigé par produit
Production végétale de saison: Production par produit
Production végétale de saison: Taux de perte par produit

FICHIER N 13:

Production végétale hors-saison: Superficie corrigée par produit
Production végétale hors-saison: Rendement corrigé par produit
Production végétale hors-saison: Production par produit
Production végétale hors-saison: Taux de perte par produit

FICHIER N 14:

Cultures associées de saison: Rendements bruts - 1ère culture par produit
Cultures associées de saison: Rendements bruts - 2ème culture par produit
Cultures associées de saison: Superficies brutes

FICHIER N 15:

Cultures associées hors-saison: Rendement bruts - 1ère culture par produit
Cultures associées hors-saison: Rendement bruts - 2ème culture par produit
Cultures associées hors-saison: Superficies brutes

THEME 3: Ressources et emploi des céréales

FICHIER N 16:

Importations commerciales privées des céréales par produit
Importations commerciales publiques des céréales par produit

FICHIER N 17:

Exportation des produits végétaux par produit

FICHIER N 18:

Aide structurelle alimentaire par produit
Aide d'urgence alimentaire par produit

FICHIER N 19:

Commerce national des céréales: Ventes par organismes
Commerce national des céréales: Distribution gratuite par organismes
Commerce national des céréales: Achats par organismes

FICHIER N 20:

Quantités stockées: Stocks céréaliers de sécurité par produit
Quantités stockées: Stocks céréaliers des organismes d'aide par produit
Quantités stockées: Céréales stockés par produit - Offices de commercialisation
Quantités stockées: Stocks des commerçants privés
Quantités stockées: Stocks des organisations villageoises
Quantités stockées: Stocks des coopératives des consommateurs
Quantités stockées: Stocks des entreprises
Quantités stockées: Stocks paysans

FICHIER N 21:

Stocks céréaliers: Capacité de stockage de la construction
Stocks céréaliers: Bâche
Stocks céréaliers: Capacité de stockage total

FICHIER N 22:

Consommation humaine urbaine par tête de céréales par produit
Consommation humaine rurale par tete de céréales par produit - Autofourniture
Consommation humaine rurale par tête de céréales par produit - Achats
Consommation humaine rurale par tête de céréales par produit - Ensemble
Aliment bétail par produit
Transformation en produit non alimentaire par produit

FICHIER N 23:

Consommation humaine apparente

THEME 4: Revenus et dépenses du secteur de la production

FICHIER N 24:

Prix au producteur des produits céréaliers
Prix au grossiste des produits céréaliers
Prix à la consommation des produits céréaliers
Prix général des produits céréaliers

FICHIER N 25:

Prix au producteur des produits non céréaliers
Prix au grossiste des produits non céréaliers
Prix à la consommation des produits non céréaliers
Prix général des produits non céréaliers

FICHIER N 26:

Prix à l'importation des céréales

FICHIER N 27:

Prix d'exportation des céréales des fournisseurs

FICHIER N 28:

Prix à l'exportation des produits végétaux

DOMAINE 3: PRODUCTION ANIMALE

THEME 1 : Facteurs de production

FICHIER N 29:

Production des aliments bétail par produit
Prix d'achat des aliments bétail par produit

FICHIER N 30:

Infrastructures liées à la production animale

FICHIER N 31:

Santé animale: animaux atteints par maladie
Santé animale: cas de décès par maladie

FICHIER N 32:

Production des produits sanitaires par produit - Quantité
Production des produits sanitaires par produit - Prix
Ventes des produits sanitaires par produit - Quantité
Ventes des produits sanitaires par produit - Prix

FICHIER N 33:

Importations des produits sanitaires par produit - Quantité
Importations des produits sanitaires par produit - Prix

THEME 2 : Paramètres de production du bétail

FICHIER N 34:

Abattages familiaux par espèce
Abattages commerciaux par espèce
Poids moyen carcasse par espèce

FICHIER N 35:

Effectifs des troupeaux: Mâles jeunes par espèce
Effectifs des troupeaux: Femelles jeunes par espèce
Effectifs des troupeaux: Mâles adultes en pleine carrière
Effectifs des troupeaux: Mâles adultes entiers en pleine carrière
Effectifs des troupeaux: Mâles adultes castrés en pleine carrière
Effectifs des troupeaux: Femelles adultes en pleine carrière par espèce
Effectifs des troupeaux: Mâles adultes en fin de carrière par espèce
Effectifs des troupeaux: Mâles adultes entiers en fin de carrière par espèce
Effectifs des troupeaux: Mâles adultes castrés en fin de carrière
Effectifs des troupeaux: Total mâles
Effectifs des troupeaux: Total femelles
Effectifs des troupeaux: Total

FICHIER N 36:

Paramètres de la dynamique et d'exploitation du troupeaux par espèces

FICHIER N 37:

Produits Animaux: Production par produit

THEME 3: Commercialisation

FICHIER N 38:

Commerce national de bétail: Têtes offertes
Commerce national de bétail: Têtes vendues

FICHIER N 39:

Prix du bétail: Mâles jeunes par espèce
Prix du bétail: Femelles jeunes par espèce
Prix du bétail: Mâles adultes en pleine carrière
Prix du bétail: Mâles adultes entiers en pleine carrière
Prix du bétail: Mâles adultes castrès en pleine carrière
Prix du bétail: Femelles adulte en pleine carrière par espèce
Prix du bétail: Mâles adultes en fin de carrière par espèce
Prix du bétail: Mâles adultes entiers en fin de carrière par espèce
Prix du bétail: Mâles adultes castrés en fin de carrière
Prix du bétail: Totales mâles
Prix du bétail: Totales femelles
Prix du bétail: Total

FICHIER N 40:

Commerce national des produits animaux: Prix de gros 1ére qualité
Commerce national des produits animaux: Prix de gros 2ème qualité
Commerce national des produits animaux: Prix de gros Ensemble
Commerce national des produits animaux: Prix à la consommation 1ére qualité
Commerce national des produits animaux: Prix à la consommation 2ème qualité
Commerce national des produits animaux: Prix à la consommation Ensemble
Commerce national des produits animaux: Prix du lait
Commerce national des produits animaux: Prix des oeufs

FICHIER N 41:

Importations du bétail et des produits animaux: Nombre de têtes et quantités
Importations du bétail et des produits animaux: Prix

FICHIER N 42:

Exportations du bétail et des produits animaux: Nombre de têtes et quantités
Exportations du bétail et des produits animaux: Prix

THEME 4: Consommation

FICHIER N 43:

Consommation urbaine par tête des produits animaux par produit
Consommation rurale par tête des produits animaux par produit
Consommation totale par tête des produits animaux par produit

FICHIER N 44:

Consommation apparente des produits animaux

DOMAINE 4: ENVIRONNEMENT

THEME 1: Environnement économique et institutionnel

FICHIER N 45:

Taux des taxes et impôts
Taux des taxes statistiques
Taux de change officiel
Taux de change parallel
Indice des prix à la consommation

THEME 2: Environnement physique

FICHIER N 46:

Hauteur des pluies
Nombre des jours de pluie

FICHIER N 47:

Superficies par déstination
Superficies par aménagement agricole

FICHIER N 48:

Niveau de crue des flueves et des lacs
Hauteur maximum des flueves et des lacs
Hauteur minimum des flueves et des lacs

ANNEX G

List of GON databases and contacts

The list of Government ministries/organisations where a data bank exits.

- MHE/DRE	(données sur les modes distribution et sur le types d'ouvrages)
- MTP/BGR	(données sur infrastructure routière)
- MTT	(données sur immatriculation et circulation des vehicules, accidents par type de route et type de permis et sur le secteur tourisme)
- ONAHA	(données sur AHA, et Coopératives)
- MSP	(données sur infrastructure sanitaire, natalité, consultations, hospitalisations, vaccinations Sanitaire etc....)
- M.PLAN/DSD	(données sur les variables démographique)
- M.PLAN/DAEP	(donnés économiques à l'échelle nationale)
- M.Plan/DDRM	(données sur les projets micro-réalisations regionale)
- M.Plan/DPP	(données sur les projets multi-sectorielle programmé sur le Budget d'investissement de l'Etat)
- MAG/EL	(données sur la production, superficies des cereales, ressources animales)
NIGELEC	(données sur la consomation electrique et la production d'énergie)
SNE	(données sur la consomation d'eau)
OPVN	(données des prix sur les cereales principales)

121

LISTE DES MINISTERES/ORGANISATIONS QUI DISPOSE D'UNE BANQUE DES DONNEES

- MHE/DRE (données sur les modes distribution et sur le types d'ouvrages)

  Responsable: Mr. Hassane Adamou
  Tel: 72.30.42

- MTP/BGR (données sur infrastructure routière)

  Responsable: Mr. Habibou Saidou
  Tel: 72.28.48

- MTT (données sur immatriculation et circulation des véhicules, accidents par type de route et type de permis et sur le secteur tourisme)

  Responsable: Mr. Ali Boubakar
  Tel: 73.44.42

- ONAHA (données sur AHA, et Coopératives)
  à rechercher

- MSP (données sur infrastructure sanitaire, natalité, consultations, hospitalisations, vaccinations Sanitaire etc....)

  Responsable: Mr. Ibrahim Chaibou
  Tel: 72.35.03

- M.PLAN/DSD (données sur les variables démographique)

  à rechercher

- M.PLAN/DAEP (donnés économiques à l'échelle nationale)

  Responsable: Mr. David Nodé
  Tel: 72.38.38

122

- M.Plan/DDRAT (données sur les projets micro-réalisations régionale)

Responsable: Mr. Idrissa Dan. Inna
Tel: 72.24.50

- M.Plan/DPP (données sur les projets sectorielles programmé sur le Budget d'investissement de l'Etat, la partie programmation et l'évaluation)

Responsable: Mr. Moussa Abdou
Tel: 72.28.45 Poste 377

- M.Plan/DFI (données sur les projets sectorielles programmé sur le Budget d'investissement de l'Etat, la partie financière)

Responsable: Mr. Ali Idi
Tel: 72.21.58

- M.Plan/DPP (données socio-économiques)

Responsable: Mr. Dan Bakoye Chaibou
Tel: 72.28.45 poste 364

- MAG/EL (données sur la production, superficies des céréales, ressources animales)

Responsable: CRED/Université du Michigan
Tel: 73.46.69

NIGELEC (données sur la consommation électrique et la production d'énergie)

Responsable: Mr. Bello
Tel: 73.38.71

122

SNE	(données sur la consommation d'eau) à rechercher

OPVN	(données des prix sur les céréales principales) à rechercher

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124

ANNEX H

List of available data from participants at MAG/EL/AGRHYMET/CRED conference on geographic information systems (1990)

TABLEAU RECAPITULATIF

LES DONNEES DISPONIBLES AUPRES DU RESEAU SIG/NIGER

INSTIT.	NATURE DES DONNEES	DISPONIBILITE	PERS.-CONTACT
MAG/EL/PADE	* Produc. biomasse 1985-90 * Indice végé. 1985-1990	* MA/E Dir. Elev.	* Fode C. MAG/EL/PADE B.P. 12168 NY.
MH/E/PROJ.NEEM	* Cartes local.arbres	* MH/E Cell. Infor.	* MAHAMANE GUERO Ser. Ame.Res.Fore. B.P. 12520 NY.
MH/E/Pro.NER/86/001	* Ress. eau sout. * Fichiers frontière	* S.G. MH/E * Dir Res. Eau. * Dir Dev. Hydr. * Serv.Inv.Res.en eau * Proj. PNUD NER/86/001	* Adouna Hassane MH/E/Serv. Inv. Res. Hydr. B.P. 578 NY. * Jackou Koure * Bonnier Andre B.P. 578 NY.
INRAN/TROPSOILS	* Cartes photoaér. * GIS	* MA/E/INRAN/Dir.Res. Ecolo. * Dir. Stat. Inform.	* Mahamadou Ouattara INRAN/TROPSOILS B.P. 429 NY. * Mahamane Bachir INRAN/TROPSOILS B.P. 429 NY.
AGRHYMET	* Données météorol. * Hydrolog. * Agricoles * Phytosan. * Res. Pasto. * Télédétect. * Réf. Spatia.	* Dir. Météo. Natio. B.P. NY. * AGRHYMET/Dir. Géné. B.P. 11011 NY.	* Boulama Mohamed Dir. Météo. Natio. B.P. NY. * Hama Kontongombe AGRHYMET/Dir. Prog. S.R.B.D. B.P. 11011 NY.-

126

MP/Dir. Dev.Re . Amen. Terr.	* 103 variables socio-éco à l'échelle arrond. * Cartes en EDICART * Données urbaines (en projet)	* MP/Dir. Dev. Reg. Amen. Terr. B.P. 862 NY.	* Massot Daniel MP/DDRAT B.P. 862 NY. * Kader Mahamane MP/DDRAT B.P. 862 NY. * Madi Abdou MP/Serv.Archives B.P. 862 NY. * Dir. Stat. Démog. MP/DSD B.P. 862 NY.
MP/Bur.Cent. Rec	* Cartes censitaires cantonnales * Croquis localités à échelle variable selon localités	* Secr. Géné. MP B.P. 862 NY.	* Madi Abdou MP/Serv.Archives B.P. 862 NY. * Dir. Stat. Démog. MP/DSD B.P. 862 NY. * Proj. Rec. Pop MP/Bur. Cent. Rec. B.P. 862 NY.
MF/Serv. Topo.	* Inv. photos aér.de base	* MF/Serv. Topo. Cartothèque Inst. Géo. Natio. France	
MA/E/DEP	* Données agricoles * Elevage	* Contact direct * Dir. Elev. MA/E B.P. 12168 NY.	* Singellos Philippe MA/E/DEP/CRED B.P. 11201 NY. * Manzo Issoufou MA/E/DEP B.P. 12168 NY. * Fode Camara Sanoussi MA/E/PADE Serv. Elev. B.P. 12168 NY.
ICRISAT	* Images satellites * Données de biomasse * Base données/mots clé	* Dir. Exécutif ICRISAT B.P. 12404 NY.	* Serv. Concerné
MAS/DPF	* Données en formation sanitaire * Données en planification familiale	* Contact direct	* Kadi Amadou MAS/DPF/Bur. Rech. Stat B.P. 11286 NY.

127

Météo. Natio.	* Postes climatolog. * Pluviométrie * Stations ?	* Dir. Météo. Natio B.P. 218 NY.	
Secr. Perm. Code Rural	* Données foncières	* S.P.C.R. B.P. 12277 NY.	* Aicha Mamadou S.P.C.R. 12277 NY.
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ANNEX I

Constraints to More Efficient Agricultural Data Collection and Use: Examples from Other African Countries

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The objective of this report is to provide a brief overview of the state of agricultural statistics in African countries, the constraints to the collection and use of agricultural data in Africa, and examples of successful related projects/activities. Information in this overview was obtained through interviews conducted in Washington, D.C. with specialists from A.I.D., the World Bank, the U.S. Department of Agriculture (USDA), the International Food Policy Research Institute (IFPRI), and the A.I.D.-financed Famine Early Warning System (FEWS) Project. The report is divided into two sections. The first summarizes major constraints facing data collectors and users; the second briefly assesses a few relatively successful case studies.

1. OVERVIEW OF CONSTRAINTS

1.1 Comparative Neglect of Agricultural Statistics

At the time of independence, most African states inherited rudimentary national statistical systems. Although the establishment of development plans in the immediate post-independence era created a fresh demand for data, data collection efforts have concentrated on macro-level statistics, especially in the form of national accounts and basic demographic information, to the detriment of agricultural statistics. Collection of agricultural data in Africa has been neglected for several reasons:

- The importance traditionally attached to national accounts and especially to estimates of the Gross Domestic Product (GDP) have overshadowed all other data collection efforts. Informal activities as well as agricultural transactions and interrelationships have been neglected. It was not until the 1980s that African governments, influenced by major donors, undertook an array of agricultural projects to enhance information systems and data bases.

- Because of the need for frequent observations and measurements to obtain information on key agricultural variables and agricultural activities over an extended period of time, the collection of agricultural statistics is an expensive undertaking. Thus, although agriculture has recently become a top priority, the sector continues to be insufficiently surveyed.

- Conducting agricultural surveys in African countries is a major undertaking due to the varied and changing local socioeconomic structure, lack of physical infrastructure, and low level of education. In addition, many of these countries are experiencing rapid demographic, economic, and cultural change. Climatic and soil conditions in each country also lead to wide regional disparities in both resources and farming practices. These difficulties are often compounded by several other factors such as the rural-urban migration or the inaccessibility of many areas for parts of the year that may coincide with critical periods of the agricultural cycle.

- The methodology required to collect statistics on many agricultural variables such as production, yield, marketed volume, income, and consumption is by no means well-defined in the local context. To avoid variations in interpretations of these concepts and inconsistencies in subsequent classifications of holdings by size or utilization, enumerators must have detailed knowledge of local practices and variations within the area surveyed and intensive training.

- The infrastructure for carrying out survey programs in the field is often inadequate. Trained enumerators and junior staff are unavailable in sufficient numbers. In two IFPRI projects in Niger and Senegal, for instance, the staff needed almost the entire first year of the study to become familiar with the basics of the data entry system so that more sophisticated procedures could be introduced.

- Other critical constraints to collecting agricultural and income statistics in Africa include the lack of standardized measures in most countries, the recall capability of generally illiterate farmers who keep no records of production or transactions, and the importance of non-monetary or barter transactions in the local economy.

1.2 Insufficient Coordination of Data Collection Efforts

Government bureaus, institutions, donor-supported activities, and individual research projects are usually inadequately coordinated. Different agencies may compile estimates for the same crops. For instance, in Nigeria five agencies make crop production estimates: the Nigerian Federal Office of Statistics, the Central Bank of Nigeria, the Nigerian Federal Department of Agriculture, the United Nations Food and Agricultural Organization (FAO), and the U.S. Department of Agriculture (USDA).

Failure to prepare an inventory of available information has in many cases resulted in wasteful duplication of effort. In some countries, researchers conducted elaborate surveys only to find at the publication stage that the information was already available.

The multiplicity of data collection methods reflects the multiplicity of data collection agencies. Different methods are even used to collect information on the same variables in the same location. Thus, while some statistics are collected in field surveys, others are based on secondary information. For instance, while local institutions in Nigeria and Cameroon have argued that FAO and USDA estimates for food crops do not accurately reflect year-to-year changes and appear unrealistically smooth in behavior, FAO and USDA have criticized the weaknesses of the direct production estimates and invoked demand considerations in an attempt to estimate approximately what supply levels must have been. This methodology stems also from the belief that certain crops such as roots and tubers present special difficulties for estimating harvest volumes, because they are commonly harvested over periods as long as three years and sometimes at irregular intervals. For such crops, consumption-based estimates of production are considered more accurate than direct field estimates.

1.3 Poor Quality of Agricultural Data

The poor quality of agricultural data in African countries is due to the many difficulties outlined above but is exacerbated by poorly articulated survey objectives. Some surveys would never have been conducted had the potential uses of the results been examined. Some researchers have attempted to collect data to address every conceivable question. These efforts have resulted in overextended resources and poor-quality data.

1.4 Statistical Offices and Data Users

Many researchers believe that a fundamental discrepancy between what statistical offices are capable of delivering and what policymakers expect of information services lies at the heart of Africa's agricultural data problem. In other words, the bleak record of statistical initiatives in Africa is not solely due to the statistical offices' inability to adapt to changing conditions, but also and perhaps most importantly to actions and misconceptions of data collectors and users.

While statistical offices have developed information programs reflecting the collectors' perspective without proper attention to the needs of potential users, policymakers have not always known what kinds of data they need or have had unrealistic expectations of data requirements as economic and policy conditions have evolved.

A prerequisite to greater interaction between data collectors and users is the establishment of formal mechanisms to closely link statistical offices with their clientele in the various ministries. Reducing the isolation of statistical institutions is justified on several grounds:

- Reduced isolation would improve survey content and data quality and lower data collection costs. A critical aspect of survey design is the precise definition of the data to be collected and the translation of data requirements

into detailed questions which respondents can comprehend and answer. If adequately implemented, this process could significantly reduce survey costs.

- Increased interaction between data collectors and users would facilitate the identification of the relative strengths and weaknesses of the national information system. This could lead to more focused data collection efforts, in which greater care is concentrated on fewer types of data.

- When policymakers perceive the higher utility of more user-oriented data, they are likely to lobby for increased resources for statistical offices.

2. CASE STUDIES

2.1 The Planning, Economics and Statistics for Agriculture Project (608-0182)--Morocco

In 1979, AID/S&T provided funds for USDA to use satellite and aerial photography to develop information systems in 10 countries on four continents. Morocco was one of the first countries to sign a memorandum of understanding using funds from this project. Initial training was provided in Washington in 1980 on the construction of an area sampling frame (ASF). In 1983, USAID/Rabat began a ten-year project (608-0182) to develop data collection and policy analysis capability in Morocco.

The purpose of the Planning, Economics and Statistics for Agriculture Project is to improve the Government of Morocco's ability to collect data and publish timely agricultural statistics, undertake economic policy analyses, and plan, monitor, and evaluate agricultural projects.

The first project evaluation, conducted in 1987, concluded that it had made excellent progress toward supplying required inputs, producing desired outputs, and achieving the project's objectives. The 1990 evaluation team concluded that "the project has made considerable progress in building institutional capacity in statistics...and that nearly all of the output level goals specified in the original project paper or in the amended project document from 1988 have been met."

In particular, the project has made permanent changes in the quality of agricultural statistics. Both the Directorate of Planning and Economic Affairs (DPAE) and the Ministry of Agriculture and Agrarian Reform (MARA) are committed to continuing this activity, and the ASF can be maintained and sustained by the current staff at the Statistics and Documentation Service (SDD). The aerial frame sampling is in place covering all the nation's agricultural land, specified surveys are undertaken regularly, and results are published.

13

In addition, an excellent aerial photo laboratory is operational in DPAE and is functioning "flawlessly" according to plans. The data base activity is progressing without technical assistance slowly but steadily. DPAE is regularly requested to conduct special purpose surveys of an ad hoc nature in project areas for USAID, the World Bank, IFAD, FAO, and other donor organizations, and SSD has established itself as an important institution with strong technical capabilities and experience in data collection and summary.

The project has certainly been successful, but it faces significant constraints. In particular, improvements are needed to develop clients in the private sector, identify clients in the public sector outside the Division of Economic Affairs, promote published data, and hold user meetings to develop user inputs for SDD planning. Such interaction is needed to secure data users' continued support and ensure that other branches of DPAE and other agencies can more fully use SDD's capabilities.

2.2 The Agricultural Surveys and Policy Analysis Project (ASPAP)--Rwanda

In 1980, Rwanda relied entirely on subjective annual estimates by extension agents. The country had no trained staff nor any system for conducting objective farm-level surveys on a national scale. The purpose of the Agricultural Survey and Policy Analysis Project II (ASPAP), which overlapped and succeeded ASPAP I (1981 to 1987), was to improve policy formulation for the rural economy by improving the quality and increasing the quantity of the information on which policy is formulated and by strengthening the institutions responsible for providing such information. All technical assistance personnel were expected to train their counterparts on the job. ASPAP was also to send four staff members of the Service des enquêtes et des statistiques agricoles (SESA) to the United States for masters degrees in agricultural economics, statistics, and computer science. In addition, the project was expected to provide 15 person-months of short-term international and in-country training.

ASPAP has made impressive gains in producing well-trained staff, a maintainable data base, pertinent analyses and publications, and expert consulting services. In developing and testing more effective field sampling and measurement methods, more accurate crop density data, and more efficient production measures, staff skills have improved progressively. Donors regularly turn to SESA to conduct special studies as well as to provide good quality data on the agricultural sector.

Despite the progress that has been made, a few important problems remain unresolved, particularly the need to harmonize agricultural data collection. While it is generally accepted that duplication of effort should be eliminated, there has been far less agreement on the type of statistics to be collected and the methodology to be used for data collection and analysis.

At issue is also the significant gap between data collection, analysis, and policy formulation. Although many officials contend that their thinking has changed as a result of ASPAP activities, some policymakers have decided that SESA's research results are too

technical, too complex, and too encumbered with other concerns to be usable in the higher reaches of government. This perception confirms a universal feature characterizing data collection efforts in African countries--namely the lack of formal communication links between policymakers and suppliers of agricultural data. Nor has there been a formal mechanism to disseminate recurrent data. Consequently, available data have been provided to potential users only when requested, and reports summarizing production and other data have not been widely circulated.

2.3 Zambia Agricultural Training, Planning and Institutional Development, (ZATPID) Phases I & II

USAID has funded two consecutive projects to assist the Government of the Republic of Zambia (GRZ) in strengthening its capacity for analysis, planning, and management of its agricultural sector. ZATPID I was authorized in 1980 and completed in 1987. ZATPID II was implemented in 1987 and is scheduled to end in 1993. Two primary objectives of the two projects are to enhance availability and collection of information for policy analysis; and to improve communications and coordination of data flow among user agencies, especially those participating in agricultural planning and policy analysis. Among project implementors were the U.S. Bureau of Census (BUCEN) through a Participating Agency Service Agreement (PASA) contract to provide training and technical assistance to the Central Statistics Office (CSO).

Accomplishments since 1980 include compilation of historical data, publication of new reports, preparation of crop forecasts twice a year, conduct of agricultural surveys in the commercial and the non-commercial sectors, and improved data sharing between the CSO and other GRZ agencies. These accomplishments have been, however, overshadowed by major constraints, including the needs for training, model building, and a demand-driven agricultural information system.

Training has consisted of formal participant training outside of Zambia, formal in-service training such as workshops and seminars, and daily on-the-job training through counterpart relationships. Although critical skills have been strengthened in areas such as basic computer software use, microcomputer maintenance, and data-bank development and maintenance, a major constraint has been long and short-term trainee attrition. As a consequence, greater attention is now being paid to providing opportunities for developing work programs in the returnees' areas of expertise and improving facilities and equipment to support such programs.

In developing some data collection and analysis activities, insufficient attention has been paid to how the activity would be used locally, including who would translate the analyses into policy recommendations and who would sustain the activity after the departure of the expatriate technicians. It is in such a setting that a number of modelling exercises have been carried out with insufficient planning regarding their potential use and sustainability.

The degree to which the studies and activities have been initiated in response to a specific concern by GRZ policymakers has varied. Some activities have been initiated at the request of high-level officials who were responding to concerns raised by political constituencies.

In other cases, staff and/or expatriate advisors have initiated activities without sufficient attention to proper communications between data users and the gathering agency. Even though it is appropriate to have a mix in the sources from which data collection activities originate, it is important that empirical studies and their policy implications be widely circulated to generate support from key officials.

It is probably in response to the project's inability to build a genuinely demand-driven agricultural information system that USAID/Lusaka, in concert with local government officials, has decided to "de-emphasize" ZATPID II's data gathering and processing activities.

3. LIST OF PERSONS CONTACTED

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136

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