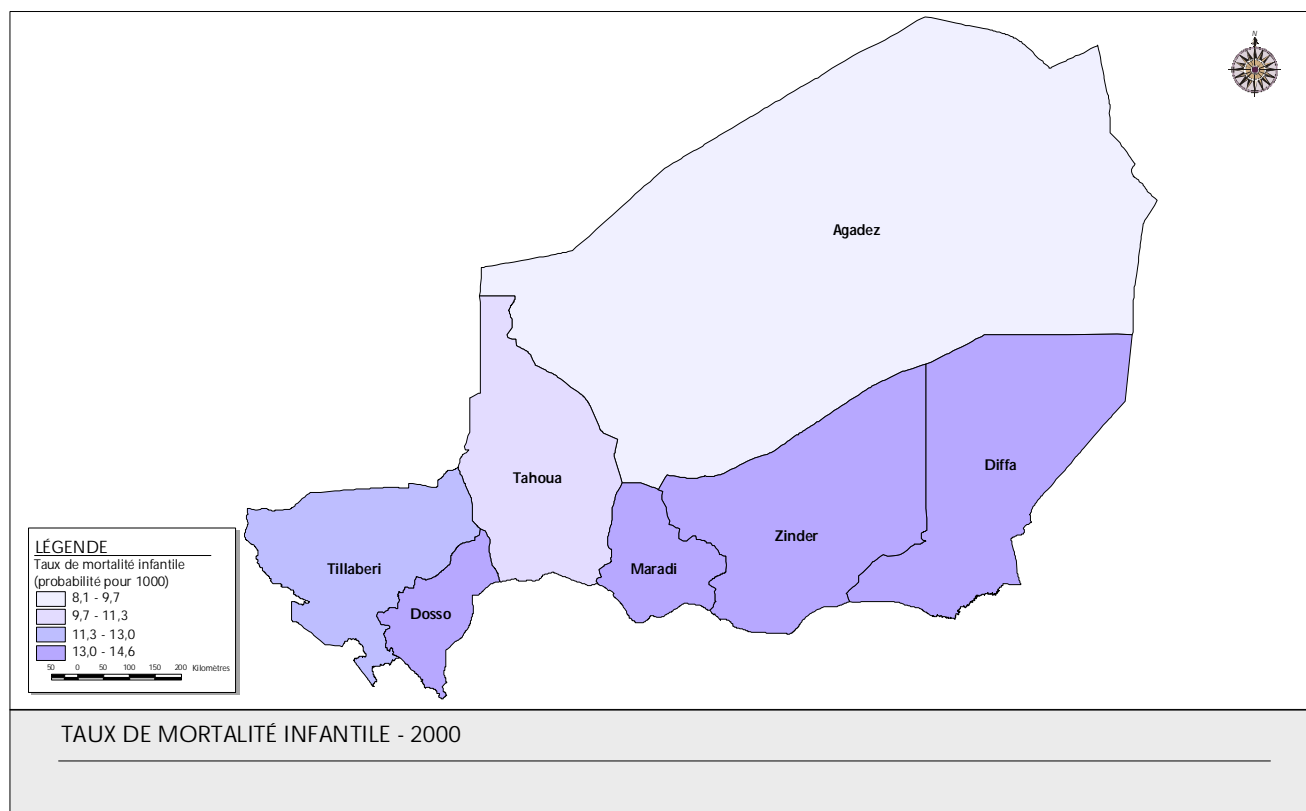


# Phase II: Identification of an Institutional Framework For a Data And Information Support System For Poverty Reduction In Niger

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Prepared by:



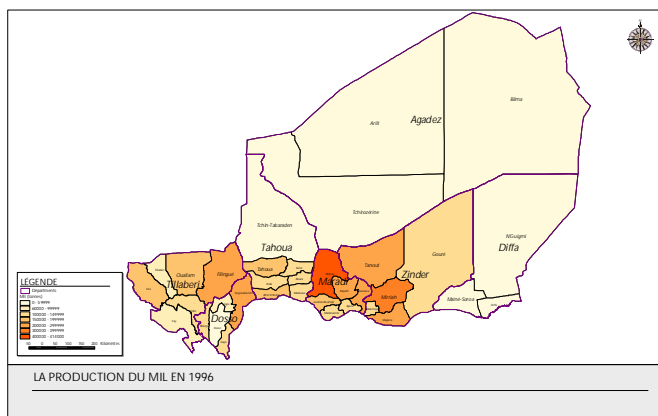
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# Phase II: Identification of an Institutional Framework For a Data And Information Support System For Poverty Reduction In Niger



Prepared for  
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July 2001  
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In Support of Community Action and Poverty Reduction Strategy Programs

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## ACRONYMS AND ABBREVIATIONS

ABC-ecologie	Association pour le Bien-être Collectif-Ecologie
ACDI	Agence Canadienne pour le Développement International
ACMAD	Centre Africain pour les applications de la météorologie au développement
AFVP	Association Française des Volontaires du Progrès
AGRHYMET	Centre Régional en Agronomie, Hydrologie et Météorologie Opérationnelle
BE/CGT	Bureau Exécutif du Conseil de Gestion des Terroirs
C/GRN	Centre de Gestion des Ressources Naturelles
EDS	Enquête Démographique et de Santé
DSCN	Direction de la Statistique et des Comptes Nationaux
DSRP	Document de Stratégies pour la Réduction de la Pauvreté
UE	Union Européenne
FAO	Organisation des Nations Unies pour l'Alimentation et l'agriculture
FEWS	Famine Early Warning System
ICRISAT	Institut International de Recherche sur les cultures des zones tropicales semi-arides
INRAN	Institut National de Recherches Agronomiques du Niger
KARKARA	Association Nigérienne pour la Dynamisation des Initiatives Locales
ONG	Organisation Non Gouvernementale
PAC	Programme d'Action Communautaire
PADEM	Programme Africain d'Enquêtes auprès des Ménages
PASP	Programme Agro-Sylvo-Pastoral
PCNLCP	Programme Cadre National de Lutte Contre la Pauvreté
PGRN	Projet de Gestion des Ressources Naturelles
PNUD	Programme des Nations Unies pour le Développement
PPA	Participatory poverty assessment
SAP	Système d'Alerte Précoce)
SAP/GC	Système d'Alerte Précoce/Gestion des Catastrophes
SGI	Système de Gestion de l'Information
SIGNER	Systèmes d'Informations Géographiques du Niger
PNUD	Programme des Nations Unies pour le Développement
UNICEF	Fonds des Nations Unies pour l'Enfance
USAID	United States Agency for International Development
PAM	Programme Alimentaire Mondial

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## PREFACE

This report summarizes the findings of a three-week mission to Niger to identify the possibilities and potential problems of creating a data and information system in support of the national goal of poverty reduction.

The mission was conducted under the auspices of the World Bank Technical Department, Africa Region. The assessment that follows was closely coordinated with Bank staff in Washington and Niger and in full cooperation with the Prime Minister's Permanent Secretariat responsible for the preparation of the Document de Strategie pour la Reduction de la Pauvrete (DSRP). Additional support, advice and involvement were provided by the Programmes d'Actions Communautaires (PAC).

The primary goal of the Mission was to consider and discuss the institutional framework required to support a sustainable information system in the context of poverty alleviation and to identify the potential locus for such an institution. To achieve this goal it was clear that the Mission would require guidelines from the Nigerien national components involved in poverty reduction as well as background on those institutions already gathering data. These guidelines were provided to the mission through discussions with those most closely associated with database development and poverty reduction in Niger. Further information was gathered through a review of the goals and objectives of the DSRP as defined in the "Document Interimaire de Strategie pour la Reduction de la Pauvrete" and the "Termes de References des Groupes Thematiques dans le cadre des travaux d'elaboration du DSRP Complet".

The mission objectives were then developed on the basis of the DSRP requirements and its needs. These objectives can be summarized on the basis of the following assumptions:

1. There is a need for higher quality, timelier and more detailed information on poverty at all levels but especially in the villages.
2. There is a need for a concerted national effort to define the institutions and requirements for the creation of an operational system to provide such data and information.
3. There is a need for an efficient national and local data and information collection and distribution system.
4. There is a need to involve the cooperation of all national, international and NGO groups to support the creation and maintenance of such a system.

Given these assumptions the mission assignment was to work with the DSRP and its Thematic Groups, the PAC and other Institutions and local NGOs on the following tasks:

1. To define the most significant indicators of poverty in Niger.
2. To define the major institutional, scientific and organizational aspects inherent to an efficient poverty diagnosis system.

3. To review the existing institutional structures, their capacities for data collection and their potential in the framework of an improved national information system.
4. To prepare a report outlining the most effective method to proceed to an improved national information system capable of poverty monitoring.
5. To review the needs of information system capable of collecting from and distributing data to the village level.
6. To prepare an expanded and improved poverty-monitoring atlas based on the most recent available data.
7. To prepare a series of maps at the arrondissement and department level showing levels of poverty.
8. To outline a number of proposals for priority activities in support of the DSRP goals, including discussions and proposals for the creation of institutional relationships.
9. To define the needs and requirements of a pilot data information system created in support of PAC activities.

As follow-on to the Phase I poverty mapping effort, Stone Environmental Inc. of Montpelier Vermont was recontracted to conduct this mission with the assistance of a Nigerien associate. The following objectives were set forth in the TOR:

- Make at least two presentations of the Poverty Maps prepared under the first phase of this contract describing the methods used with the aim of updating users on the need for a village level, map based information system.
- Consult with Nigerien authorities at the DSRP, the PAC, the CNS and other relevant groups to assess their needs, define their requirements and ascertain their views as to the most effective way to institutionalize a national information system.
- Collect additional data from available sources for inclusion into the Poverty Atlas and prepare this latest version for use by the Permanent Secretariat in the DSRP.
- Assist the PAC team to define poverty mapping parameters, as they might be applicable to the work of the NGOs working in the field.
- Create maps at the Arrondissement level indicating the poorest villages.
- Assist the PAC team in defining the framework of a PAC Monitoring and Evaluation methodology.
- Prepare a report describing the mission's activities and providing guidelines for the creation of a national information system for Niger in support of the DSRP and its goal of poverty reduction.
- Define and outline next steps.

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## EXECUTIVE SUMMARY

1. Andrew Stancioff, a consultant from Stone Environmental Inc. (SEI) traveled to Niger on May 6, 2001 and remained in country until May 28, 2001. A team composed of Andrew Stancioff and Issa Garba, a SEI associate in Niger, set up meetings and prepared the action plan for the three-week mission to identify an institutional framework for a data and information system for Niger.
2. During this same period David Healy and staff from the Applied Information Management Group at SEI worked on a number of tasks enumerated in the TOR to improve and complete a final version of the Poverty and Vulnerability Maps of Niger.
3. The in-country team initiated contact with the DSRP and PAC as well as other relevant groups in Niger to set up meetings and demonstrate the Preliminary Poverty Maps to those who had provided data or other inputs for their production.

Among the highlights of the mission are: (See summary of meetings in Niger; Annex 1)

- At least four meetings were held with the members of the DSRP Secretariat and Mr. Malla Ari. The meetings focused on the presentation of the Preliminary Poverty Map, the need for an improved map as requested by the DSRP for a deadline of October 1, 2001, the need to focus on creating an institutional framework to support a sustainable national information system for poverty monitoring, the need to decide what information and indicators provide the most eloquent view of the poverty crisis in Niger, the need to involve the DSRP Thematic Groups in the poverty mapping process and the need for the consultant to assist the DSRP and the Thematic Groups to define their goals.
- Stone Environmental was asked by the DSRP to review the DSRP documents and based on these to outline relevant projects and proposals to support DSRP activities. (See Annex 3)
- Stone Environmental held discussions with a number of other groups to review the institutionalization issue. These groups or individuals included: Mr. Bouzo of the CNS, Mr. Segone of UNICEF, Mr. Mayaki Director General of Cap2 a Nigerien Policy ONG, Dr. Zackary, Consultant and ex-director of INRAN, and members of the UNDP and World Bank staff as well as members of the DSRP, PGRN, Projet Energie 2, the director of the PAC and others.
- Stone Environmental met with experts from the Census Bureau, SIGNER, SNIS, MEN DEP and other organizations to acquire additional data for the poverty maps, as well as to demonstrate and discuss the preliminary version of the Poverty Atlas. CD rhomb copies of the Atlas and all the supporting data were left with the organizations that had provided data. These copies were left for comments and analysis. French versions will be distributed as soon as they are translated.
- Stone Environmental continued to have problems acquiring the SIGNER database for inclusion into the Poverty Atlas. A number of attempts were made but were met with refusals in spite of efforts by Nigerien authorities at the highest level. Stone will continue to

try to acquire these data through their representative in Niger, in order to verify their viability, include them in the Poverty Atlas and to create an ambience for cooperation between Stone and SIGNER.

- Stone Environmental continued to work with PAC Project staff and consultants to evaluate the possibility of including a GEF component in the present PAC, to support ongoing efforts to define the criteria for a village based monitoring and evaluation system (See Annex 5), and to design a preliminary information system to support ongoing and forthcoming PAC activities.

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## FINDINGS

Although no final decisions were made on the institutional issue, a large number of suggestions were made. These suggestions and other ideas can be summarized as follows:

1. There is at present no viable institution to house a national information system in support of poverty assessment and alleviation.
2. Two Government structures were indicated as being most appropriate: the Prime Minister's Office and the Ministry of Plan.
3. A committee has been formed to review existing national databases. This structure is housed at the Ministry of Plan in the department of Census Statistics. This group has met a number of times and has the support in Niger of UNICEF and the World Bank.
4. The DSRP is committed to supporting a national information system. The DSRP needs support in accomplishing certain tasks before the DSRP deadline. In this context a number of proposals were made to assist the DSRP. These proposals should be reviewed and the most useful projects or studies should be funded.
5. Most parties agree that further discussions on the institutional framework should continue under the aegis of the CNS committee with the continued support and oversight of the DSRP, UNICEF and the World Bank.
6. It was also generally agreed that a "requirements analysis" should be conducted to ascertain the exact nature of the national information system needs for Niger. This "needs analysis" should be conducted under the auspices of the Prime Ministers Office.
7. It was further suggested that census mapping and poverty mapping in particular should proceed within the Census Bureau (BCR) until the 2000 census maps are finalized. The World Bank, UNICEF, FNUAP and the UNDP (Poverty Observatory) should support this activity.
8. It was agreed that an information system 'cell' should be set up as a Pilot at the PAC. This Pilot project would use the Poverty Atlas data and define other parameters and the criteria to be used in the National System with the oversight of the DSRP, the BCR and the CNS. The information and data gathered would focus on the work being done at the village level by the PAC/NGO participants and would fit into the Census data coding framework for the Arrondissements in which the NGOs are working.
9. It was proposed that a workshop should be held under the auspices of the DSRP to demonstrate the power and utility of GIS and the Poverty Atlas specifically. It was further suggested that a

number of organizations working with GIS in Niger, should participate in this workshop to show their work and its correlation to Poverty Mapping and GIS.

10. The individuals interviewed and the “owners” of the Nigerien databases expressed a need for technical assistance to upgrade software and training. Assistance would also be provided to help each organization define objectives, collect and properly code data and provide data to other users.
11. Based on the above summary findings Stone Environmental has made a number of recommendations regarding the requirements for a Nigerien National Information System to support Poverty monitoring and reduction as well as other national goals. These recommendations provide a template for various activities as well as time frame for the tasks to be accomplished.

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## DEFINING THE MOST SIGNIFICANT POVERTY INDICATORS

One of the primary tasks of this mission was to finalize the Poverty Atlas. To do this Stone Environmental was required to choose and map additional indicators and if possible to improve on the indicators previously map by locating more recent and more detailed information. In the *Preliminary Atlas of Poverty and Vulnerability*, Stone Environmental Inc prepared poverty maps of Niger using the following indicators.

- Average rainfall 1990-1999
- Villages with and without wells
- Crop/Land use intensity//villages with land use > 30%
- Cattle per capita by arrondissement
- Villages with and without primary schools
- Villages with and without markets
- Villages with and without health care
- Major diseases per 10,000 population
- Corridors of transhumance
- Villages 5 km from roads

Due to the limited time during the first mission and because certain databases were unavailable the number of indicators used was limited to the 10 described above. During discussions held with the DSRP and other organizations and review of numerous documents the following additional indicators were identified as important for measuring poverty and vulnerability and were proposed for inclusion in the Poverty atlas to be prepared for the Permanent Secretariat of the DSRP for inclusion in their document:

- More recent (1996) statistics on the bovines and ovines
- Recent statistics on millet and peanut production by arrondissement

- Various data sets from the UNICEF MICS2 household survey including: These are unfortunately only aggregated to the departmental level. There is more detailed data available for twelve arrondissement but their inclusion would have reduced the homogeneity and coherence in the Poverty Atlas.
- Infant mortality
- Infant mortality for children under 5 years old
- Literacy rate
- Vaccination for measles
- Vaccination for smallpox
- Vaccination for polio
- Vaccination for TB
- Vaccination for neonatal tetanus
- Knowledge on HIV/AIDS prevention
- Knowledge of transmissibility of HIV from mother to child

The production of a Poverty Atlas to monitor progress will be an ongoing task and will require revisions, deletions and additions through time and as improved data and information becomes available. One dataset that SEI was seeking to include was that held by SIGNER. Unfortunately and in spite of every effort on the part of the Mission, the Bank and the Secretariat of the DSRP, this material was not made available.

Stone Environmental personnel made every effort to discuss poverty and vulnerability indicators with the DSRP Thematic Groups. While these groups were “named” before the departure of the Stone Mission on the 27th of May, only one group met. Stone attended this meeting but no definitive information was gleaned from this group on poverty indicators, as they were preoccupied with procedural matters.

It is expected that these thematic groups will define poverty indicators by sector that will follow the mandate of the DSRP as defined by the “Termes de Reference des Groupes Thematiques.”

The issue of data collection to acquire and map poverty indicators must focus on collecting higher quality information at all levels but especially at the household level in villages. The data available from the UNICEF MICS2 household survey covered clusters in all departments in Niger and was conducted on a village level in 12 Arrondissements from the 2000 survey. These data go a long way to resolving the problem of data collection at the village level. They are, furthermore, invaluable in that they demonstrate on a national level the socio-economic situation of the Nigerien population on at least 15 levels. Nevertheless these data are still only partial and lacking in a number of ways. As noted above they do not cover all villages in Niger but only sample 12 Arrondissements at the village level. These data also fail to provide cartographic point information to establish location and correlation with the 2000 Preliminary Census. Finally the data do not include any natural resources

and environmental data. Because such surveys are expensive they should be more inclusive, more eclectic, be spatially site specific and should be tied in with the census coding system to avoid errors and provide long term use for monitoring and evaluation by any group interested in poverty and vulnerability analysis.

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## **THE MAJOR INSTITUTIONAL, ORGANIZATIONAL AND SCIENTIFIC OBJECTIVES OF A NATIONAL POVERTY DIAGNOSIS AND INFORMATION SYSTEM**

Political and institutional issues, more than any others, have been the major obstruction to implementing national information systems based on geographic information systems. (GIS). A national system cannot be “bought” or simply put together by requesting that a number of agencies cooperate.

A national system has to be planned and designed so that each element, organization and research group will fit into a smooth functioning whole while simultaneously allowing for the continued and effective development of individual databases and information systems. The introduction of a national information system fundamentally changes the way a country and its agencies can and will use data and how those dependent on the system work within the new structure. It affects the political structure of the country and its many agencies as much as the way it will ultimately affect the quality and type of work that is done.

Politicians and directors of government agencies as well as the project managers who will use the information system must understand the principles of the GIS-based information system but also the associated social, economic and political issues. For example, the creation of the Poverty Maps has involved the use of data from multiple sources as well as interagency negotiations. This may mean that in the future problems could surface regarding sharing costs, issues of data ownership and copyright, consideration of legal liability and individual privacy rights.

The implementation of a national information system in the context of a GIS implies the collection and integration of numerous datasets within a highly rigorous and standardized structure. This type of system demands that all the datasets be accurately registered and that the GIS have the analytical ability (capacity) to serve a cross section of various national and international organizations. Such a system is not only costly to set up but also to maintain. A number of organizations in Niger presently own such systems but these are stand-alone and in some cases were incapable or unwilling to provide services on request.

Cooperative agreements among government agencies are necessary to overcome the high cost of separate but equal facilities. Such agreements will enable conversion costs to be shared and quality standards to be set and adhered to. There is also the cost of an initial management and organizational overhead to configure, organize and implement an operational system. In many countries (as well as at the local government level in the United States), this type of operational and

sharing agreement has proved a major obstacle. Another impediment to creating an efficient GIS is based on the high cost of data input and or digitizing. Many agencies will simply use publicly provided data without verifying its source or scientific veracity. These problems and others have undermined efforts to share data conversion costs and to standardize data formats and quality. The data quality, compatibility and standards issues are typically, handled by each group without regard to a national or sectoral standard. This approach tends to create duplication and error in data base collection.

Antiquated concepts of data ownership continue to obstruct the efficient development of information systems. Even managers and government agencies convince themselves that it is “their data” when in fact the data was collected with funding from the government, international donors and NGOs.

Clearly the institutional vision that needs to be inculcated in managers, decision makers, technicians and bureaucrats, is that the data belong to the nation as a whole and were collected with the intent of serving the common good. The management, distribution and use of this resource must be considered as a benefit to the entire user community and not for the convenience of the database custodian. Controversy over control of data has compromised many GIS implementation efforts. (Stanley Aronoff- Geographic Information Systems-1995)

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## **THE INSTITUTIONAL OBJECTIVE OF A NATIONAL INFORMATION SYSTEM FOR NIGER**

### *Why does Niger need an Information System?*

Part of the reason for developing an information system for Niger is that there is a recognition that the current information systems are not adequate or cannot supply the data requested with assurance as to its accuracy or timeliness. Among the problems of the existing information systems in Niger are the following:

1. Spatial information is poorly maintained or is out of date. (See Annex 2 Report on the SIRN and the PGRN) This includes outdated maps, inaccurate data records, statistics and summaries. A problem also occurs when one data set represents information from one period, which is then matched with data from another period. These data sets are not coeval and therefore of limited value.
2. Spatial data is not recorded or stored in a standardized way. The geographic projections may differ, scales may vary or sampling intervals may be very different and so make it difficult to integrate multiple datasets.
3. Spatial data nomenclature or classification methods may be different making it impossible to merge data sets with any sense of precision or viability.
4. Data aren't shared which leads to duplication and error. This is the case of the SIGNER.

5. Data manipulation retrieval and integration capacities are inadequate. This can be because of antiquated equipment or inadequate software (SNIS) or even training. (The Ministry of Commerce is inadequately supplied with equipment, software and training and its database is of limited value.)
6. The database must be open to expansion if and when this is needed. If a system is limited and cannot be expanded, (as are most of the systems installed in Niger in the 70's), then the system breaks down and members cannot remain as equal partner in a national database and information system. (The Ministry of Animal Resources had one of the first GIS in Niger. This database is of little value today.)
7. There few institutionalized quality control efforts conducted on various GIS data collection and compilation efforts.

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## **DEVELOPING SYSTEM REQUIREMENTS**

A national information system for Niger can only be defined by a careful analysis of those organizations that are presently using information systems and GIS and the short and long term requirements of Niger and its partners. Such an analysis would focus on the type of data needed, the number of users, the software, hardware and training required. The analysis would also consider the short and long term budgetary needs of the system. In addition the analysis would consider the institutional and actual location of a centralized operational group as well as a supervisory scientific committee concerned with standards, codes, rigor, data viability, data dissemination and the maintenance of a free and open system available to all for the common good.

The analysis we propose is outlined in Annex 4. The process of defining the national needs and requirements for a system should involve the use of national and international experts working with and under the management of the highest authority in the Nigerien Government. It is suggested that a national NGO be contracted to conduct this assignment with the technical support of an international consulting group and members of at least two national organizations with GIS and information systems experience. The Nigerien NGO should have high-level contacts and experience in government management and operations as well as being familiar with the basics of information systems technology. Ultimately the Nigerien national system must be composed of independent data gathering organizations and government agencies all operating under the oversight of a scientific committee in charge of the maintenance and management of data standards and quality control.

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## **ORGANIZING AND IMPLEMENTING A PLAN FOR A NATIONAL SYSTEM**

The implementation plan will describe how the information, technology and people will be molded into an operating national information system. There are a number of organizations in Niger that already have GIS-based information systems. These include: SIGNER, UTA, and IGN. Still

others, like SNIS, the Census and MEN DEP, have databases that could become the basis of operational systems serving the needs of those particular agencies. The fundamental challenge of a national system is that all these systems be integrated so that they can work together and support not only each other but also all and any groups or individuals needing information.

The underlying requirement of an operational national system is the need to develop a structure that provides management, technologic and scientific guidance to all the individual creators and developers of spatially based data systems so that the information collected by one is interchangeable with that of all other data producers. The management structure responsible for the definition of an operational system exists in Niger and is located at the Ministry of Plan under the National Committee for the Development of Information Systems. The Director of Statistics heads this group.

The preparation of the implementation plan should be conducted at the same time as the requirements needs analysis discussed above.

Guidance from the committee will be important in the organizational and scientific sectors. A few suggested topics for review in the implementation plan are provided as follows:

- Data base development and accuracy of content
- Verification of data
- Geographic projections and data format
- Purchase of equipment (least important)
- The training of people for various tasks
- Responsibility for norms and standards
- Creating and updating a national archive
- Creating the means of data dissemination
- Creating a WEB Site for such a repository
- Defining the elements of individual GIS'
- Providing guidance on training
- Providing guidance on purchasing of software
- Providing guidance on systems maintenance and troubleshooting

An operational GIS supporting a national information system provides, "the means for ...information to be used for a broad range of applications...In order for these data to be used in decision-making, their quality must be ...known. Public organizations charged with producing and disseminating ...information must be aware of the responsibility issues that may arise when their data are used. These issues arise from the stated or implied nature of the data.... It is in the interest of the provider ...to clarify those responsibilities in advance rather ... (than) ... in a court of law or in the midst of political controversy. ... The organizational structure of a GIS should reflect these

concerns... Ultimately it is the management of a GIS facility that will determine the quality of information and the extent of its distribution. (And use) “ Aronoff ibid.

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## **EXISTING INSTITUTIONAL STRUCTURES – CAPACITY AND POTENTIAL**

During the period of the Phase I and II in-country mission, the consultants visited a large number of institutions while collecting data for the preparation of the Preliminary Poverty Atlas. During these visits a preliminary assessment was made of the institutions and their data management, collection, storage, analysis and distribution capacities. Preliminary reviews were also made of the personnel, their training and the equipment and software used by these organizations. Because a complete analysis of institutional capabilities was and is outside the scope of the present TOR we will only present some preliminary comments and an overview of the problems of the capacities and potential of the existing information systems in Niger.

There are at least eight organizations with true GIS capabilities in Niger: these are the SIGNER, the MEN DEP, the National Meteorological Service, the UTA, the PGRN, the IGN, the Census Bureau and the Regional AGRHYMET Center. International groups also possess these capabilities and include the GTZ, the Italian Cooperation and UNICEF. Although there may be others in the public as well as the private sector, the consultants did not have the opportunity to visit these organizations and review their capabilities.

The AGRHYMET Center, a regional organization, has the only GIS with broad management and organizational capabilities including a scientifically solid methodology, (as verified by the consultants). SIGNER, Census, SNIS and MEN DEP are among the few organizations collecting their own data in the field. A number of other organizations in Niger have databases that focus solely on their sector. Some of these databases are of good to excellent quality (SNIS, ACMAD) whereas others are incipient, no longer operational or operating on antiquated computer platforms with inappropriate software and have considerable software problems.

Although many Nigerien GIS technicians are very capable, interested and knowledgeable, most lack adequate training to manage the tasks, operate the equipment and conduct software and systems management support for their GIS. Although systems management is not the task of these scientists and technicians, nevertheless many of the misunderstandings, related to the design of a national system and where it should be housed, stem from technical naïveté and lack of understanding of the complexities of a full scale GIS and the requirements of a National Information System.

Motivation of GIS specialists working for government agencies is a real problem. Most technicians and scientists earn very low wages. For this and other reasons a few GIS experts moonlight in order to supplement their income to the detriment of their organizations and Niger.

In conclusion and based on the observations of the consultants there is at present no organization in Niger in a position to host a national information system. The potential of any one of these national organizations is nevertheless adequate for the creation of new sectoral GIS' or the maintenance or improvement of an existing GIS. A national information system requires a long-term plan to satisfy all sectors of the Nigerien economy. A national system must operate under very rigorous management and with clearly articulated standards and procedures. A national system must go beyond the level that treats only health or hydrologic data. To respond effectively to complex problems, the national system must include a research-based component that would be in the University, INRAN, or ICRASAT. A national system must be able to deal with global problems and respond to complex situations with many parameters that include data from many ministries. A national system must respond to question on poverty and food security as well as AIDS.

The design, development and implementation of a national information system with multiple capabilities must be independent of present information systems. Existing systems have neither the mandate nor the scientific, technical capability and least of all the management and logistical capacity to operate such a system.

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## **A NATIONAL INFORMATION SYSTEM USING VILLAGE BASED DATA**

The ultimate goal of the DSRP and the PAC is to develop the tools to measure poverty at the village level and on the basis of comparative information to take action to reduce the level of poverty through effective investments. Village level data are being collected by numerous agencies in Niger and for various purposes. Agencies collecting village data include among others:

- Ministry of Health/SNIS - Health and Disease Data
- Ministry of Plan – Census data
- Ministry of Environment/Hydraulique – Hydrologic and other natural resources and socio-economic data, SIGNER
- Ministry of Environment – PGRN, UTA, IRH
- CARE International – Socioeconomic, health and household survey data
- Macro International – Household Survey
- Africare- Household Survey
- Global 2000 – Health care data
- Helen Keller International – Health Care
- SIMS – Linguistic Data
- UNICEF – Household Data
- WHO – Health Care data
- Ministry of Commerce – Trade and business data
- Ministry of Education – School, literacy and other education data
- Prime Ministers Office – Famine Early Warning data

- Institut Geographiques National du Niger (IGN) – Cartographic data
- INRAN – Agricultural Research Data (CARIS, AGROF, BVRA)
- Meteo National – Climate Data
- ACMAD – Climate Data
- GTZ – Natural Resource data/PASP-INFO
- ORSTOM – Natural Resource, socioeconomic and anthropological data
- ICRISAT – Agricultural Data
- Ministry of Agriculture – Crop Production Data
- FEWS – Famine Early Warning Data
- Programmes Actions Communautaire (PAC) – Village based Community Action Plan

As anyone who has worked in Niger will note immediately, this list is by no means complete. It does, however, demonstrate the large number of institutions working in Niger. Many of these organizations have developed databases and are equipped with computer hardware and software to enter, store and analyze their data. Of these organizations only a few have or claim to have village or regionally based data collection systems in which their representatives live and work and collect data in the field. Even fewer have village based data informants or correspondents.

Local authorities do maintain local registers of births, deaths and marriages but most of these data are collected at the commune or arrondissement level. There is very little coherence or compatibility between databases and their use is therefore limited. They are also of little or no use to local populations because they are unfathomable to the villagers who have had very little input into their fabrication.

To assure that the existing databases and their potential for information is not lost; these data sets should be properly organized and standardized in a National System for maximum utility at the village level.

A village based system for collecting data in a national information system framework must be developed through a process similar to that proposed and described for the creation of the National System. A requirements analysis needs to be conducted at the local level. Local participation is clearly a necessity. Villagers must understand the basis of data a collection system before they can provide useful input into the system. Once the villagers have been informed, they will be in a position to provide input on at least four levels as follows:

1. Defining the indicators
2. Conducting or helping to conduct the information baseline
3. Monitoring the evolution of the indicator and
4. Providing an analysis and opinion on the process taking place

To accomplish the above with any hope of success, village level data collection procedures must be put in place. The data must be collected, described, mapped, collated and then transmitted to a

central or preliminary point of data input for later transmission to a regional or national data handling facility. Teams of villagers can be trained to conduct the above activities. With over 26,000 villages enumerated in Niger this will not be easy. It is proposed that reporting system such as that used by 13th and 14th century Peruvians (Inca) be applied in Niger. The communes could be broken down into groups of 1,000 people. A team of three or four individual would be chosen from this group and be responsible for reporting the information defined through the participatory process. These individuals would, at pre-established time intervals, (twice a year) transmit the data to an information manager at the commune level who would be in charge of reporting on population groups of 10,000. A pilot system should be tested at the PAC project level.

Perhaps the most important aspect of data collection at any level is its ultimate utility. There are hundreds of available data sets, developed over the years that are not used because the data collection process was poorly developed, was not participatory, because the process has a “western” bias and is of little relevance to local populations, because the figures are not representative and because these data are incompatible structurally or chronologically with other data and information. To avoid such mistakes the participatory process must be completely transparent.

Care International, SIGNER, PAC, Projet Energie II, and ACMAD have experience in creating databases using the participatory approach. These and other organization with similar experience should be involved in creating the framework for the format and structure of a village based data collection system. Once a format and structure has been developed, a series of meetings in 10 villages should be set up to discuss; information systems, data collection and the role of the villagers in defining indicators and collecting and reporting data. The most significant thing to be discussed with the villagers is the ultimate utility of the system and what the system will bring to the villages. Finally, to be able to assess the utility of the system, the villagers must develop a monitoring system to evaluate the impact of their role in the national information system.

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## **PREPARING AN IMPROVED POVERTY ATLAS OF NIGER FOR THE DSRP AND ARRONDISSEMENT MAPS SHOWING RELATIVE VULNERABILITY**

In March of 2001, Stone Environmental Inc prepared a *Preliminary Atlas of Poverty and Vulnerability of Niger*. This information was presented to the World Bank and to a special committee from the Prime Minister’ Office that was visiting the World Bank to make the DSRP presentation. A number of comments and suggestions were made to improve the map presentation and its contents. During the most recent trip to Niger the Consultants presented the Poverty maps to the Permanent Secretariat of the DSRP, the World Bank Staff, The PAC Team, Mr. Mayaki, the Prime Minister in the last Government, the UNICEF and UNDP Management, The CNS, The Census, and SNIS among others. (See Meetings-Annex 1). Each of these organizations provided the Consultants with constructive remarks and suggestions for improving the +Poverty/Vulnerability Maps.

On the basis of a number of suggestions the following changes and additions were made to the maps:

- Include 10 UNICEF MICS2 household survey parameters at the Department level. (2000)
- Crop production statistics for millet were added (1996)
- Numbers for ovines and bovines were added (1997)

In addition arrondissement data were reviewed and remapped to reflect the comparative level of poverty and vulnerability for each village mapped on the basis of the Census data.

Final Census data were not available to prepare the 2001 Poverty/Vulnerability. These data will not be available before the spring of 2002.

The following section describes the additions and changes made to the Poverty/Vulnerability maps. These maps have been prepared in French and English and have been made available on CD-ROM for distribution by the World Bank and the DSRP Secretariat.

The maps numbered 13 through 22 were developed from the MICS2/UNICEF Survey Data that was conducted in the year 2000. SEI transformed the data into a database of 55 fields so that they could be analyzed using GIS software. The maps numbered 23 through 26 were developed from data collected from the Ministère de l'Agriculture et de l'Élevage, Cellule PASA-DEP, Project PAI. This data is from 1996.

### **Map 13: Mortality of Children under 5 years of age.**

This map illustrates the mortality rate of children less than 5 years of age. Rates of mortality for children under 5 years of age are highest in Diffa and Zinda (36.6/1000). Agadez has the lowest rate of mortality for young children (17.2/1000).

### **Map 14: Infant Mortality**

This map illustrates rates of infant mortality by department. The rates of infant mortality are highest in Diffa, Dosso, Maradie, and Zinder (14.6/1000). Agadez department had the lowest rate of infant mortality (8.1/1000).

### **Map 15: Literacy**

This map illustrates the range of literacy by department. The percentage of population with the highest literacy rate was in Diffa (32.3) and the lowest was found in Tillabéri (11.5).

### **Map 16: Population Vaccinated against Diphtheria, Tetanus, and Chicken Pox**

This map illustrates the percent of population by department vaccinated against The largest population vaccinated against Diphtheria, Tetanus and Chicken Pox was in Agadez (41.4%) and the least number of people vaccinated was in Tillaberi (15.6)

### **Map 17: Population Vaccinated Against Measles**

This map illustrates the percent of population by department vaccinated against measles. The largest population vaccinated against measles is in Diffa (50.9%) and the least number of people vaccinated is in Tillaberi (20.9%)

### **Map 18: Population Vaccinated Against Polio**

This map illustrates the percent of population by department vaccinated against polio. The largest population vaccinated against polio are in Dosso (75.7%) and the least number of people vaccinated are in Zinder (17.8).

### **Map 19: Population Vaccinated Against Tuberculosis**

This map illustrates the percent of population by department vaccinated against tuberculosis. The largest population protected was in Diffa (71.6%) and the least number of people vaccinated was in Tillaberi (29.9).

### **Map 20: Population Vaccinated Against Neonatal Tetanus**

This map illustrates the percent of population by department vaccinated against neonatal tetanus. The largest population vaccinated against neonatal tetanus was in Diffa (56.6%) and the least number of people vaccinated was in Zinda (20.9).

### **Map 21: Population Educated on the Prevention of HIV/AIDS**

This map illustrates the percent of population by department educated on the prevention of HIV/AIDS. The largest population with this education was in Maradi (29.5%) and the least number was in Zinda (15.1%)

### **Map 22: Population Educated on the Transmission of HIV Between Mother and Child**

This map illustrates the percent of population by department educated on the transmission of HIV between mother and child. The largest populations with this education was in Maradi (37.8 %) and the least number was in Zinda (19.1%)

### **Map 23: Number of Cows (Bovin) by Arrondissement (1996)**

This map illustrates the number of cows by arrondissement. The greatest number was in Say (123,200) and the fewest were in Bilma (0).

### **Map 24: Number of Sheep (Ovin) by Arrondissement (1996)**

This map illustrates the number of sheep by arrondissement. The greatest number was in Mainé Soroa (515,000) and the fewest were in Bilma (1,800).

### **Map 25: Millet Production by Arrondissement (1996)**

This map illustrates the tons of millet produced by arrondissement. The largest quantity was produced in Mirriah (139,861 tons) and the smallest amount was in Bilma (0 tons).

### **Map 26: Peanuts Production by Arrondissement (1996)**

This map illustrates the tons of peanuts produced by arrondissement. The largest quantity was produced in Mirriah (27,805 tons) and the smallest amount was in Bilma (0 tons).

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## **PRIORITY ACTIVITIES IN SUPPORT OF THE DSRP GOALS**

During a number of meetings with Mr. Malla Ari, the Permanent Secretary of the DSRP and the members of the Secretariat the Consultant reviewed the goals of the secretariat and its thematic groups in an effort to better understand how to choose poverty indicators and how to provide the most useful poverty and vulnerability maps.

SEI was also requested to review the document prepared by the Secretariat titled, “Termes de Reference des Groupes Thematiques dans le Cadre des Travaux d’Elaboration du DSRP Complet” (April 2001) and was asked to comment or prepare relevant and supportive proposals projects and activities in support of the mandated terms of reference. The mandated activities of the DSRP are defined as general and those of the Thematic Groups as specific. SEI reviewed each of the activities in the Terms of Reference and wherever applicable offered suggestions or the broad outlines of proposals. These proposals are presented in Annex 3: Projets et Activites d’Appui au DSRP”. We have summarized some of the activities proposed in the following section.

Activities proposed by the consultants in support of the General Mandate of the DSRP

1. For the “Creation of the “final” Poverty Map.”
  - The Poverty map should be prepared on a satellite image base.

- A map should be prepared showing the latest land use situation for Niger (2000) based on satellite interpretation.
  - The SIGNER data should be included
  - The integration of the MICS2 data
  - A map showing the location and activities of NGOs especially in the health sector
  - Provide an interactive poverty mapping system for the purpose of monitoring and updating poverty data.
2. For “The Inventory of Pertinent Documentation”
    - Putting a team in place to conduct a documentation search on poverty
    - Review the existing national documentation center, its goals and potential for data dissemination and sustainability
    - Create a menu driven documentation data bank on poverty covering all sectors
  3. To create a Monitoring and Evaluation System by showing the location, extent and type of activity of each project:
    - Map the location and geographic limits of existing projects
    - Show the level of investment of each project, per capita and through time
    - Monitor Project effectiveness through time
    - Show project redundancy for given areas
    - Show the value of investments by geographic coordinates and by village
  4. To define the terms of reference for and conduct a needs analysis for a village based national information system and to find the most appropriate location for such a system and assure its longevity. Two studies are needed. The first would define the requirements for the location, decentralization, and sustainability of the national system. The second study would define the operational, scientific and institutional framework to assure the scientific integrity of the system and to provide for the efficient collection, storage, analysis and distribution of the system.
  5. To develop an improved household survey approach to facilitate the evaluation of poverty in Niger and to assure that these data can be integrated into the national information system.
  6. To create an early warning system with databases compatible to those developed for the evaluation of Poverty. To develop the framework for a food security system which differentiates structural vulnerability from that based on annual rainfall and other variables.

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## **ACTIVITIES PROPOSED BY THE CONSULTANT IN SUPPORT OF THE SPECIFIC MANDATE OF THE DSRP THEMATIC GROUPS**

**Health Sector:** prepare a Health Sector Map(s) showing:

- The location of Health Centers and the number of people with access to the centers.
- A map showing disease vectors and those areas in which each is most prevalent.
- A map showing the areas in which Health related NGOs are working, their focus and expenditures.
- A map showing bio-botanical zones that indicate the location and type of traditional medication to be found in that area.
- Organize workshops regionally, locally and nationally and invite those who practice this art in order to discuss traditional medicines and the areas in which plants are found.
- Help the Government of Niger to create protected areas for these plants.
- Assist the GON to draft legislation to protect the ownership of these traditional medications and those who use them for healing.

### **Mines and Energy Sector**

- Complete a water budget for the surface and groundwater of Niger.
- Conduct a study to evaluate the possibility of setting up a rural telecommunication system.

### **Private Sector – Tourism**

- Prepare maps and brochures of tourist sites including: dinosaur sites, wetlands, gold mining areas, white water and other river sites, the Songhay Necropoli.
- Develop or improve the National Web site for Niger.

### **Capacity Building**

- Provide seminars and workshops for technical assistance experts, diplomats and functionaries as well as NGO representatives to provide them with a better understanding of Niger and its problems, particularly those related to poverty.

### **HIV/AIDS Sector**

- Prepare maps of the AIDS situation by arrondissements.

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## **CREATING A PILOT INFORMATION SYSTEM IN SUPPORT OF THE POVERTY REDUCTION GOALS OF THE PROGRAMMES D’ACTION COMMUNAUTAIRES**

The PRSP for Niger is well underway and its report will be due in early 2002. The interest and effort expended suggest positive results and long-term success. The Presidents of the World Bank and IFAD have agreed to work together on the PRSP and the Niger case has been proposed as a pilot. (D.Sellen- 2000- Concept Note-The Community Based Development Program).

## **PAC Objectives**

In parallel with the above Program to support a National Poverty Reduction Program, the Government of Niger and the World Bank have initiated The Programme d'Actions Communautaire, PAC. This program aims at three development activities or objectives and two monitoring and evaluation processes including project management and support. These activities/objectives are:

- Small project village investment funds for decentralized investment (FIL), for which 47% of the PAC budget is allocated
- Capacity building and support for rural communities to create community based and locally participative development plans = 20% of the PAC budget
- Support of the Decentralization Process including environmental management and institutional reforms = 13% of the PAC Budget
- Poverty Monitoring = 7% of the PAC Budget
- Project management/ Project monitoring and Evaluation = 13% of the Budget

## **Present PAC Activities**

At this time PAC activities are focused on five pilot projects, in five geographic areas of Niger under the “management” of separate “Operateurs Pilotes”, who are partners of the PAC management team located in Niamey and directed by Ibrahim Boukary Abdou. Dr. Abdou works closely with the World Bank PAC project Coordination team and its Director, Amadou Alassane.

At this time the PAC, through its Operator Partners, is developing the methodologies for capacity building among the rural populations in the five Operator areas. In addition village leaders are being identified and “representation structures” are being defined. In certain cases projects are being identified and described and budgets are being prepared. Some of the operators and their village counterparts are focusing on informing the populations and conducting training to be able to identify micro investment opportunities so that the participants are prepared to submit proposals for financing by the FIL. In at least two cases literacy is the first target of opportunity to prepare local populations to understand the process involved in preparing micro projects and the budgets required.

The short-term aim of the PAC is to reduce village poverty through the development of micro projects and the investment of small amounts of money in income generating and food security interventions. In the long term PAC/FIL funding will flow far beyond this initial group of operators and their target villages and should reduce poverty through community development in an integrated and multi-sectoral context throughout Niger.

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## GOALS, TARGET POPULATIONS AND EXPECTED BENEFITS

The long-term objective of the CBDP/PAC is to provide certain benefits to target populations and groups. Some of the benefits would be:

1. Improved living conditions: Rural populations will benefit from access to information and key social and economic services, improved health and education facilities and improved food security.
2. Employment and income generation: Increased income is expected from many categories of productive micro projects.
3. Natural Resource Management: Improving natural resource management will improve soil fertility, prevent erosion, increase vegetation cover and maintain levels of biodiversity.
4. Local institutional capacity: Improved institutional capacity must be developed at the local level to assure sustainability.
5. Central Institutional Capacity: To assure that governance improves at the central ministry level and to assist Ministries in disengaging from direct community level involvement.

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## MEETING THE GOALS AND REACHING TARGET POPULATIONS

The rural development strategy as defined by the CBDP and implemented through the PAC will require a long-term commitment to poverty monitoring. Numerous documents (PRSP, CAS, PAC, PGRN, etc.) have cited the importance of good information concerning the socioeconomic and environmental sectors of the Nigerien economy as an underlying necessity for poverty reduction. The DSRP documents clearly define the need for an informational point of departure or a baseline for future poverty monitoring.

Poverty monitoring, (and its associated activity - project monitoring and evaluation), requires high quality baseline data in order that changes in the environment and improvements in the lifestyle of Nigeriens can be measured and evaluated.

To meet the goals of poverty reduction and improved natural resource management, better information is needed and improved distribution of that information is imperative. One need only cite the cases of agricultural development in the 19<sup>th</sup> century and the conservation movement in early 20<sup>th</sup> century USA and the Green Revolution in Asia to underline the value of information as a tool for increased food production, poverty reduction and improved natural resource management. The critical aspect of these events is that they were forged through a new relationship between farmers, technology and available sources of financing.

Rural populations in Niger could profit through the use of improved information. Many farmers already possess such information but do not have the means to act on the information or simply do

not have the organizational capacity to do so. Sometimes different types of information need to be combined to provide answers to problems of a complex nature. A Nigerien National Information System that integrates village level knowledge with the power of modern technology, as exemplified by satellite imagery and GIS, will be a very important tool for improving natural resource management and reducing poverty in Niger. Such a tool is needed to support the efforts of the PAC Pilot projects. The development of this tool in a preliminary or pilot format will pave the way for the design and implementation of a national information system once the institutional framework for such a system has been defined.

The deployment of an information system to serve the five pilot projects and their village populations will go a long way to reaching the PAC Target Populations and the Nigerien goal of poverty reduction.

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## **ESTABLISHING A PILOT POVERTY REDUCTION INFORMATION SYSTEM**

To establish a poverty monitoring information system at the PAC the following factors or parameters should be considered of great importance:

1. To be able to enter and manipulate information, the system should be PC mounted with up-to-date software.
2. The system should integrate all available and verifiable data from national and other sources.
3. The system should be capable of integrating village level data from household surveys and from locally prepared map products as defined by the “Mission Methodologique de Soutien; Programme FIDA, Niger Phase II”. (Lazarev et al; 2001)
4. Villagers should be trained to understand modern tools such as satellite imagery and create thematic maps of resources and the environment and to collect related statistical data. (See FIDA study for Niger Phase II)
5. Data collected should be standardized. Villagers should be trained to collect data in a standard form.
6. The PAC should consider an information system with the following components:
  - Data choice-what indicators
  - Data collection; village, national and international
  - Verification; geographic and scientific accuracy
  - Data entry and analysis
  - Data storage and dissemination
  - Data and information monitoring
  - Training of villagers, operators, NGOs, government technicians and decision makers
7. Data collection should consider the traditional settlement and land use structure models and terminology of the Hausa, Peulh and Zerma in Niger. (Robert E. Ford; 1998:

Settlement Structure and Landscape Ecology in the Sahel: from “Rural Settlement Structure and African Development” Marilyn Silberfein Editor.)

8. A data collection system (GIS) at the PAC should incorporate information from all the pilot sites and by conducting comparative analysis find common and beneficial points for development objectives and natural resource management.
9. NGOs working in the PAC study area should be required to collect information for inclusion into the PAC database.
10. Data collection, collation, and redistribution should be conducted on the low-cost, pilot internet telecommunications system. This system has been designed by ACMAD and is provided through the World Space Foundation.

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### **IMPLEMENTATION AND ESTIMATED COST OF A POVERTY REDUCTION INFORMATION SYSTEM (PRIS) AT THE PAC**

The establishment of a pilot poverty reduction (GIS) information system at the PAC would in effect be a microcosm of the National System that is being discussed to achieve the GON aims of national poverty reduction. The following are very general estimates of the requirements of such a system. A full-fledged and more meticulous analysis of needs is recommended.

- The system would require the hiring of three full-time individuals to collect, assess, enter, manipulate and disseminate the data collected at the village, national and international level. (\$60,000)
- The system would require the purchase of at least 4 PCs and 5 to 10 laptops for use in the field. The system would require GIS software, printers and other peripherals to support activities in the home office and in the field. (\$90,000)
- The effective system would require at least 7 training workshops: five in the field and two in Niamey. (\$35,000)
- The system would require a secretary for support in the PAC Niamey office and a Vehicle to visit the NGO field offices, villages and commune chiefs. (\$45,000)
- The system would require \$25,000 in per diems and other field and support costs.
- The system would require annual support from a technical assistance team for a period of 4 weeks the first year and 2 weeks a year thereafter. (\$40,000)

Total system cost is estimated at approximately \$295,000 for the first year and about \$25,000 less for each year thereafter.

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## CONCLUSIONS

- Establishing the most appropriate location and process for institutionalizing a national information system for Niger proved to be somewhat more difficult than expected. After numerous discussions with a number of technicians, scientists, managers, Directors and Members of the Government of Niger it is evident that the process will be slow and the decision will be made at the highest level. Two locations were proposed as being the most appropriate, the Prime Ministers Office and the Ministry of Plan. It was also proposed that the Office of National Statistics at the Ministry of Plan, (Direction de la Statistique et des Comptes Nationaux) which presently houses the National Committee on Information Systems should continue to act as the center for coordination of all activities related to data collection and national information standards. This Committee is supported by UNICEF but is not receiving much other visible support.
- The impetus provided by the national focus on poverty and by the exercise of preparing the DSRP has put the spotlight on the need of finding every possible means to reduce poverty. The Government of Niger, the International agencies, NGOs and others involved in poverty reduction are of one mind that a national information system is needed. The question of the location and the type of system remains moot. Some advocates of a national system are aware of the potential benefits that an information system might bring to the organization that is chosen to house such a system and are lobbying for the privilege to be the parent organization.
- Everyone who reviewed the *Preliminary Poverty Atlas* appreciated its value as a preliminary tool for the evaluation of poverty and the assessment of the vulnerability of the rural sector of Niger. Unfortunately the consultants continued to have problems acquiring data from certain agencies. Nevertheless additional information was added to the original Atlas prepared in March. The added information consists of household data from the MICS2/UNICEF assessment of 2000. In addition some agricultural data on cattle and millet are also included. These data will be included in the DSRP Poverty Atlas to be published in October.
- A number of proposals and suggestions were presented to the DSRP in support of the Secretariats effort to produce their document on time.
- From the many discussions held with experts and decision makers in Niger it is evident that a national information system is a requirement for effective development and the reduction of poverty. There is also consensus with respect to the need to integrate all sectors of Nigerien society in the creation, development and use of a national system. The villagers, poor or rich, herders or agriculturalists must be active participants in the process. This widespread recognition of the importance of village based knowledge and information in the context of a conventional scientific information system is an important step forward and will have significant impact on national planning and development. Everyone agreed that

the role of the government is to stimulate the development of the information sector. Most government agencies understand the role that modern computer based systems can play in collecting, analyzing and disseminating information. Nearly all those interviewed understand that, in spite of decreasing software and hardware costs, a national information system is deficit prone and that such systems are not and cannot be self-supporting at this time. It is also acknowledged that such system have the potential to earn cash for services rendered and for providing data and information.

- One of the most important points recognized by technicians and decision makers alike is that conventional data and information do not suffice. Scientific, technical, and “western” socioeconomic information and data are restrictive, limited and often irrelevant and they do not take into account important forms of knowledge based on local problem solving capacity and culturally based and inherited information. The proper concern of a national system should be problem solving, whether it is for poverty reduction or for the location of a hedge or well. There is clear evidence today that the information and knowledge needed today by problem solvers in Niger is the knowledge gained by experience, whether positive or negative. This local *know-how* or know-what and why is essential to problem solving in Niger. Such knowledge and information is recognized as indispensable to an effective national information system for Niger.
- Establishing the most appropriate location and process for institutionalizing a national information system for Niger proved to be somewhat more difficult than expected. After numerous discussions with a number of technicians, scientists, managers, Directors and Members of the Government of Niger it is evident that the process will be slow and the decision will be made at the highest level. Two locations were proposed as being the most appropriate, the Prime Ministers Office and the Ministry of Plan. It was also proposed that the Office of National Statistics at the Ministry of Plan, (Direction de la Statistique et des Comptes Nationaux) which presently houses the National Committee on Information Systems should continue to act as the center for coordination of all activities related to data collection and national information standards. This Committee is supported by UNICEF but is not receiving much other visible support.
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certain agencies. Nevertheless additional information was added to the original Atlas prepared in March. The added information consists of household data from the MICS2/UNICEF assessment of 2000. In addition some agricultural data on cattle and millet are also included. These data will be included in the DSRP Poverty Atlas to be published in October. The consensus was that the DSRP poverty Map, to be published in October, should include the indicators from the existing Poverty Maps, and that a limited number of MICS2 data sets should be added. Poverty indicators are being defined by the DSRP in concert with the thematic groups and village based organizations. Until these are available the existing indicators should suffice.

- A number of proposals and suggestions were presented to the DSRP in support of the Secretariats effort to produce their document on time. These are listed in Annex 3.
- Discussions with the PAC were very productive and focused on the creation of an effective village based M&E, a method for choosing Environmental “Hot Spots” as defined by the GEF and to provide a model for a pilot poverty information system.

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## RECOMMENDATIONS

Based on the needs expressed by national and international experts and especially the DSRP and other groups specifically authorized to find solutions to poverty, hunger, ill health and vulnerability it is recommended that an all out effort be made to create a Nigerian National Information System. The steps to develop and implement such a system are as follows:

- Government and donors agree on creation and support of such a system.
- Government creates the legal and operational framework for the system.
- Define the needs of such a system.
- Design the framework for a national system that integrates existing systems.
- Assist existing national systems to define their technical and training needs to improve their databases and to develop the framework for a national standardized system.
- Support the National Census Bureau to assure that the 2000 Census Data are properly completed and integrated as the baseline and coding system for all future data.
- Conduct a workshop to show the value of Geographic Information System Technology (GIS) with the assistance of national experts and under the aegis of the DSRP Secretariat.
- Develop the requirements and methods for the establishment of a decentralized, village based information system and its integration into the national system.
- Create a pilot information system under the management of the PAC that will define the prerequisites of a village based information system, including the definition of indicators and a village approved household survey system and create the framework for integrating the **village data with national data.**

### **Recommendation 1: Creation and support of a Government/Donor approved national information system.**

To reduce poverty and improve living conditions in Niger, the first task in the process of establishing a national information system is to assure that the Government of Niger supports the creation and development of such a system. The Government should make a long-term commitment to the philosophical and operational goals of such a system. The government should place a premium on the institutional underpinnings required to assure an effective and sustainable system. To do this the government should establish the Nigerien national Information System by decree. The government should also define the role of the information system in the broadest sense to provide the guidelines for the definition of the system. The government should create a permanent secretariat to oversee the development of the system. The Government should empower and fund the secretariat to define the terms of reference for the national information system with a program and schedule.

The Donors including the World Bank, UNICEF and the UNDP should make a concerted effort to support such a system. The UNDP has been planning on developing and funding a somewhat parallel system called the Poverty Observatory. Visible and vocal support by donors along with long-term investment in a national information system for the Reduction of Poverty is a sine qua non for accelerated human and national development.

Recommendation 2: Creation of the legal and operational framework for a national information system.

At present there does not exist the necessary legal and operational framework to allow for the creation of a National Information System. The government needs to enact the necessary legislative measures to permit the formation and operation of a national system.

The Commite National pour la Statistique (CNS) in the Ministry of Plan in the Office of Statistics and National Accounts is presently empowered to collect information in support of a national system. This group is supported by UNICEF but is presently not as effective as it could or should be. This organization should receive the full support of the donors in this endeavor just as it received and should continue to receive support for the development of the 2000 Census. It is recommended that the Government of Niger empower this organization to define the needs of the system as well as assessing the status of present information systems in Niger. The government should perhaps consider requesting that the Faculty of Law at the University of Niamey assess the legal ramifications of such a system and define the factors that would govern an effective system.

**Recommendation 3: Conduct a Needs Analysis/Defining the Requirements of the System.**

The Government of Niger and the Donors should appoint the CNS to conduct the necessary analysis to define the requirements of a National Information System. The System must be defined in terms of a number of criteria including the operational, scientific, training, budgetary and other requirements. These basic requirements are spelled out in Annex 4. The CNS should seek assistance and guidance from national as well as international experts including those from the University of Niamey.

**Recommendation 4: Design a National System that Integrates Existing Systems.**

An effective long-term system must be designed to be able to integrate existing sectoral government supported, private or NGO information systems. It is recommended that every effort be made to incorporate all existing systems in order to avoid loss of valuable information as well as making optimum use of available talent in the field of information technology.

**Recommendation 5: Assist Existing Information Systems**

The present information systems have been created and built independently of each other and are therefore incompatible. These systems also tend to have problems with software, hardware and occasionally suffer from insufficient training. It is recommended that the Government and the donors assist the existing information systems to develop compatibility between their systems through a review of procedures in coding, geographic projection, systems awareness, and backstopping, software and hardware troubleshooting. It is recommended that the requirements of the 5 or 6 most important information systems be reviewed, their needs established and training provided as needed in each circumstance. Technical needs should also be reviewed and assessed to establish the minimum equipment and software requirements to bring each group up to date. This will enable each group to become an equal and contributing member to a standardized national information system.

**Recommendation 6: Support the National Census Bureau System**

The National Census Bureau is presently completing the compilation of 2000 census data. This group has conducted a very efficient Census under very difficult conditions and with a low budget. For the next ten years all poverty analyses and evaluations will be based on these data. To assure that the Census data are prepared and delivered on time and are in every way correct, it is recommended that technical assistance and training be provided to this group for the next two years. Their technical needs as well as their training requirements should be evaluated and a small amount of additional equipment and software should be provided.

### **Recommendation 7: Workshop on Information Systems and GIS**

It is recommended that a Workshop be set up to demonstrate the power and utility of the information utilized in creating the *Preliminary Poverty/Vulnerability Atlas* in particular but also to show the capability and potential of information systems analysis tools as they could be applied to poverty tracking and evaluation of program effectiveness and other sector uses. The workshop should focus on the interactive capacity of computer based information systems. This approach would permit attendees to view the databases and to then make queries to which the data base manager/GIS expert would respond. It has been suggested that the workshop be held in Tillaberry to permit a decentralized view of GIS and the poverty analysis.

It is further recommended that Nigerien organizations with information system capabilities make presentations at the workshop as well as international consultants. The national organizations include: SIGNER, SNIS, MEN DEP, PGRN/UTA, IGN, and Census. These organizations would have a chance to demonstrate their databases and planning applications to local authorities, villagers, farmers and herders. It is recommended that the workshop be sponsored by the DSRP in the context of the preparation of the Poverty Document initiative.

### **Recommendation 8: Establish a Decentralized Village Based Information System.**

To create an effective national information system, the information gathered must include data from villagers, peasants, herders and village authorities. It is recommended that a village-based information system be developed that represents the traditional knowledge base of the various ethnic and occupational groups of Niger. The information collected should be defined by the villagers but should adhere to basic information collection standards and be compatible with other data sets. It is also recommended that villagers be briefed on the purpose and importance of the national information system and its relevance to their lives. The basis and framework for this system can be developed as one of the tasks of the PAC NGO Operators. While defining indicators for poverty, vulnerability, natural resources management and socioeconomic development, the villagers will also be identifying the factors that can later be used for PAC Project Monitoring and Evaluation. (See Annex 5)

### **Recommendation 9: Household Survey Design and Implementation**

Household surveys in Niger have been conducted by a large number of organizations and NGOs. Many of these collect partial or "cluster" data representing only a small sample of the Nigerien population. For the purposes of poverty mapping, these samples are insignificant. These household surveys are conducted using differing techniques and with sectoral bias. This approach tends to create differing databases that are incompatible and are only representative of national or regional trends. It is recommended that a household survey be designed and tested that would choose poverty and vulnerability indicators from two perspectives: structural and

immediate poverty and vulnerability. The questionnaires must be designed to be compatible and to be collected in a spatial or geographic framework. For an effective implementation the household survey must be designed to take into account the views (indicators) on poverty and vulnerability of local populations.

**Recommendation 10: Creation of a Pilot Information System to Support the PAC and its Partners.**

The Programmes Actions Communautaires, PAC is presently developing the framework for micro investment in the poorest communities in Niger. The Villages are in partnership with a number of NGOs who are defining the criteria for the loans and helping villagers create the organizational and implementation framework for borrowing. To create an effective system for small project loans the villagers and the NGOs must understand the socioeconomic and natural resources/environmental context in which they live and work. Once information is available to all the possibility for success will be optimized and the errors made will be there for all to see and to learn from. To achieve the goal of shared information it is recommended that the PAC develop a GIS based information system. This pilot system would represent in miniature what the national system. The exact nature and cost of the proposed PAC information System is described on page 25.

## **ANNEXES**

**ANNEX 1: SUMMARY OF MEETINGS FROM THE MISSION TO NIGER**

**ANNEX 2: SYSTEME D'INFORMATION SUR LES RESSOURCES NATURELLES (SIRN) DU PGRN**

**ANNEX 3: PROPOSITIONS, PROJETS ET ACTIVITES D'APPUI AU DSRP**

**ANNEX 4: ÉBAUCHE D'UNE PROPOSITION D'ÉVALUATION DU SIG AU NIGER**

**ANNEX 5: PROGRAMMATIC MONITORING AND EVALUATION USING A SPATIAL DATABASE**

**ANNEX 6: TERMS OF REFERENCE**

**ANNEXE 1: SOMMAIRE DES RÉUNIONS DE LA MISSION AU NIGER**  
**Du 7 Au 28 Mai 2001**

<b>DATE</b>	<b>LIEU</b>	<b>OBJET</b>	<b>PARTICIPANTS</b>	<b>RESUME</b>
08 mai 2001	BANQUE MONDIALE	Réunion de prise de contact et de discussion avec le PAC	A.S et PAC + Hope Neighbors, Gabriele Rechbauer	Revue des objectifs de la mission.
09 mai 2001 Mercredi	Banque Mondiale	Préparation des réunions et visites	Issa GARBA, Andrew STANCIOFF	Point des personnes et structures à contacter,
10 mai 2001 Jeudi	Cabinet du Premier Ministre , SP/DSRP	Prise de contact avec Mr Malla ARI, Directeur de cabinet adjoint de la Primature, coordinateur du Secrétariat Permanent du DSRP	Malla Ari C/SP/DSRP G. BERGEN Banque Mondiale A.STANCIOFF Stone Environmental INC.	Présentation de la mission Stone Environmental, Introduction de A.Stancioff par le Représentant Résident de la B.M. L'objet de cette rencontre est de faire percevoir le bien fondé de la mission Stone Environmental INC. et du rôle que la Banque Mondiale voudrait lui faire jouer dans l'élaboration du DSRP et du PAC
10 mai 2001 Jeudi	BCR(CENSUS)	Présentation de l'Atlas Préliminaire, Discussions	I.GARBA, A.STANCIOFF, Julienne AITCHEJI	Mr Ekhadé GHALIO nous a reçu pour un court instant compte tenu de son calendrier très chargé du fait de la préparation des activités du recensement. Par contre ce dernier nous a dirigé vers Julienne AITCHEJI avec qui nous avons eu une séance de travail. Mme J.A a tenu d'abord à remercier Stone Environmental INC. Pour son assistance en janvier passé, et a demandé de transmettre ses salutations à Mr D.Healy. Andrew a ensuite procédé à une projection commentée de l'Atlas préliminaire de la pauvreté qui impressionna beaucoup Julienne, chef du service informatique au BCR la réunion a pris fin sur une note de satisfaction. Andrew a demandé au BCR de faire le point du type de problèmes techniques auxquels le BCR est actuellement confronté et pour lesquels les services de Stone Environmental INC. Pourraient être sollicités pour apporter un appui.



DATE	LIEU	OBJET	PARTICIPANTS	RESUME
			SELLEN, Gabriele RechBauer, Hope NEIGHBOR, Jan NAYGLE, Ibrahim BOUKARI, Boukar ATTARI , et le personnel de la Banque Mondiale	La réunion a été articulée autour des questions de modalités de conception et de mise en œuvre d'un système de suivi et évaluation ( HOPE : critères pour les faire, comment le faire, option pour un système globalisant de suivi évaluation sur base de données spatialisées (cartographie) pouvant permettre de faire une évaluation sur ce qui a été fait ) D.SELLEN précise que cette réflexion relève des attributions du sous groupe suivi évaluation du PAC. Il pense qu'au vu de la multitude de méthodes de suivi et évaluation il doit être envisagé une méthode adaptée au PAC et qui donne plus de flexibilité à partir non seulement des données d'opérateurs locaux, mais aussi d'opérateurs pilotes des autres pays. D'autres précisions ont été données par ASSADEK, spécialiste de suivi et évaluation au PGRN. Enfin, il a été jugé utile de réfléchir sur la nécessité d'entreprendre des études complémentaires pour le suivi et évaluation
15 mai 2001 Mardi	Direction de la Statistique et des comptes Nationaux	Prise de contact pour exposer les résultats de la mission précédente. Présentation de L'Atlas préliminaire de la pauvreté	M. Bouzou ADAMOU Directeur national de la Statistique et des comptes Nationaux (DSCN)	A. Stancioff a expliqué au Directeur National de la Statistique, l'objet de la mission et a donné les détails et les précisions nécessaires pour une bonne compréhension de celle-ci. Une projection de la cartographie a été faite et a permis aux participants de bien comprendre l'importance de la cartographie dans les activités de la DSCN, et notamment comme appui au recensement général de la population. La situation des problèmes techniques a été passée en revue. Le DSCN a fortement apprécié l'élaboration par Stone Environmental INC. de cette carte préliminaire de la pauvreté du Niger. Mr Bouzou qui partait en mission a souhaité rencontrer à nouveau la mission Stone Environmental INC. pour discuter des appuis dont peut avoir besoin le bureau central du recensement général. Cette rencontre ne s'est pas réalisée compte du retour à Niamey de M. BOUZOU prévue après le départ de A.STANCIOFF
15 mai 2001 Mardi	SIEGE DU SP/DSRP	Prise de contact avec l'équipe du SP/DSRP, Appui au DSRP et aux groupes thématiques, présentation des termes de référence de la mission Stone Environmental INC. Dans le cadre du DSRP	Malla ARI, Mme BAGNA Aissatou, Mme Sidikou Faty, SALA Assane Amadou, Boubacar Ali, Sanda Aboubacar	La mission Stone Environmental INC. A expliqué l'objet de la mission et a donné les détails et les précisions nécessaires pour que le bien fondé de la mission soit bien perçu. Une projection de la cartographie a été faite et a permis aux participants de bien comprendre l'importance de la cartographie dans l'élaboration du DSRP complet et les activités des groupes thématiques. l'équipe du SP/DSRP a

DATE	LIEU	OBJET	PARTICIPANTS	RESUME
				trouvé le produit proposé par Stone Environmental INC. très intéressant et marqué sa volonté d'en faire une utilisation virtuelle dans la conduite de leurs travaux. Le SP/DSRP a trouvé qu'il serait une bonne chose que l'équipe Stone Environmental INC. Soit activement présente aux réunions du DSRP et des groupes thématiques. La mission Stone Environmental INC. a fait part des difficultés qu'elle avait eues avec certaines banques de données comme le SIGNER, et instruction a été donnée pour que des dispositions immédiates soient prises pour mettre à la disposition de la mission, les données dont elle a besoin. SEI a été invitée à la prochaine réunion du SP/DSRP prévue le mercredi 16 mai 2001 à 16h30
16 mai 2001	SP/DSRP (CABPM)	Problème de la conception et l'Institutionnalisation d'un système d'information National	Malla ARI, Mme BAGNA Aissatou, Mme Sidikou Faty, Mme Mindaoudou Aichatou, Boubacar Ali, Sanda Aboubacar	A.S ayant introduit le sujet du débat, des questions furent suscitées autour de la méthodologie de création du système, d'autres participants ont posé des questions sur la typologie des informations, A.S a rassuré que les informations descendront jusqu'au niveau villages. La question de l'implication de Stone Environmental INC. a été débattu, et il a été entendu que Stone fera des propositions de projets et d'activités d'appui, et qu'il reviendrait au SP/DSRP d'exprimer ses besoins parmi le répertoire qu lui présentera Stone Environmental INC. La question du financement des activités a été posée. Stone entrevoit cela à travers la mise en œuvre d'un projet pilote qui appuierait le "PAC et pour lequel le financement peut être recherchée auprès de partenaires du Niger tel que la Banque Mondiale
17 mai 2001	Banque Mondiale	Discussions diverses		Poursuite des contacts pour renforcer la position de partenariat de Stone dans le DSRP, le PAC et d'autres structures au Niger pouvant être intéressées par les activités Stone Environmental INC.
18 mai 2001	UNICEF	Présentation Alas préliminaire de la pauvreté, discussion sur la disponibilité et l'harmonisation des données	Marco SEGONE, IG, AS	Après la présentation de l'Atlas Préliminaire, des discussions ont engagées sur la manière de créer un système national d'informations.
18 mai 2001	SNIS	Présentation de l'Atlas préliminaire, ponit des données obtenues et des données à rechercher	Dr Djingarey, IG, AS	La présentation de l'Atlas Préliminaire a été faite, ceci a été pour le SNIS de se rendre compte des grandes possibilités dont dispose Stone en matière de conception de système d'informations, cartographié notamment. Les données sur le paludisme et le ver de guinée, ainsi que les données les plus récentes sur la méningite ont été demandées et le Dr Djingarey les a rendues disponibles au niveau de son

DATE	LIEU	OBJET	PARTICIPANTS	RESUME
				secrétariat. La disquette concernant ces informations sera retirée au plus tard jeudi 31 mai 2001 et envoyé à Stone Environmental INC.
21 mai 2001	Ministère de l'Education Nationale (DEP)	Présentation de l'Atlas préliminaire, ponit des données obtenues et des données à rechercher	Tchambou, Abdou Mahamane sociologue, Bienvenu ELOGE cartographe, IG, AS.	AS a procédé à la présentation de la cartographie préliminaire. Les débats furent ensuite engagées et Mr Tchambou explique que des travaux d'harmonisation sont en cours pour que les données soient codifiées de la même façon quel que soit le système utilisé, AS explique des corrections sont nécessaires au niveau des repères longitudes/latitudes pour que certains villages puissent être identifiés à leur endroit réel. Des cartes de communes en copies dures sont disponibles au MEN/DEP. AS informe de sa démarche pour l'institutionnalisation d'un système d'informations national tout en tenant compte du MEN/DEP
22 mai 2001	BANQUE MONDIALE	Discussion avec le CAP sur l'option d'un projet pilote	AS + équipe du PAC	Discussions approfondies sur la mise en œuvre d'un projet pilote
23 mai 2001	Cabinet du PM	Présentation des projets et activités Stone pour appuyer le DSRP et le PAC	Malla ARI Directeur de Cabinet Adjoint du Premier Ministre, coordinateur du SP/DSRP	Le coordinateur du SP/DSRP a déclaré qu'il était impressionné par les réflexions de qualité que Stone Environmental INC. a mené pour élaborer ces projets et activités qui sont réellement le genre d'appui recherché dans le cadre de l'élaboration du DSRP. Il a tenu à féliciter l'équipe Stone pour avoir sorti de telles propositions. A.STANCIOFF a par la suite fait part de quelques petites insuffisances dans le document présenté, mais qui seront corrigées l'après midi même de ce jour , et a introduit l'idée d'animer des séances de formation, d'intégration culturelle et socio-économiques à tous les coopérants et consultants qui viendraient au Niger soit pour une étude, soit pour une coopération quelconque. Ceci a-t-il dit aura l'avantage non seulement de favoriser l'intégration sociale des expatriés, mais aussi de les doter de suffisamment de lumière pour comprendre les réalités nigériennes. Mr Malla a trouvé que cette idée était intéressante et que sa formalisation peut être envisagée sans difficulté majeure.
24 mai 2001	Ministère du Plan	Discussion avec les groupes thématiques	12 personnes président : Mr Mado Adamou, inspecteur général des services au ministère du Développement Social	Cette réunion est une réunion de contact pour asseoir le programme de travail, l'organisation et la méthodologie de travail des sous groupes. Les sous groupes ont été formés

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24 mai 2001	SP/DSRP (CABPM)	Présentation des projets et activités Stone pour appuyer le DSRP et le PAC, Discussion avec l'équipe du SP/DSRP	Malla ARI, Mme BAGNA Aissatou, Mme Sidikou Faty, Mme Mindaoudou Aichatou, Boubacar Ali, Sanda Aboubacar, Jean Luc Bernasconi, IG, AS	<p>Après les mots de remerciements du coordinateur du DSRP pour remercier les participants d'être venus à cette importante réunion et a voulu s'enquérir si Stone Environmental Inc. a pu disposer de toutes les données dont elle a besoin pour bien conduire sa mission. a mission Stone a fait part des difficultés qu'elle rencontre toujours par rapport à SIGNER JL Bernasconi en prenant la parole, informe les participants de l'importance que la Banque Mondiale accorde à la mission de Stone Environmental Inc. et attend que Stone fasse un exposé de l'avancement de sa mission. Le SP/DSRP a par la suite posé des questions relatives aux points suivants ::</p> <ul style="list-style-type: none"> <li>- Inexistence de paramètres sur les femmes, Pourquoi les zones de présence des ONG's ne concernent que le domaine santé et pourquoi pas les autres domaines ?</li> </ul> <p>En réponse à ces questions , A.S a rassuré que le système qui sera mis en place prendra en compte tous les critères et paramètres socioéconomiques soutenu par un système d'enquête qui n'extrapolera pas, mais qui se basera sur des paramètres réels qui touchent toutes les localités .</p> <p>Par rapport aux groupes thématiques le SP/DSRP s'inquiète sur la concordance des données produites par les ces groupes et celles que Stone produira, comment éviter les erreurs et les duplications.</p> <p>Le SP/DSRP a reçu l'assurance que Stone produira une trentaine de cartes qui ne seront pas différentes, mais qui vont constituer un système prescriptif, à mettre à la disposition des groupes thématiques et qui les aideront à mieux réfléchir pour éviter justement les erreurs et les duplications. Le SP/DSRP a noté la désagrégation des investissements par groupe ethnique et a conseillé de ne pas prendre ces critères comme indicateurs socioéconomiques compte tenu des implications sociales que cela peut avoir. Parlant toujours d'institutionnalisation d'un système d'information national, il a été reconnu par tous les participants de la nécessité d'entreprendre des réflexions rapides pour ce faire, la mission Stone a rappeler qu'il ya déjà un comité mis en place par l'Etat et qu'il convient tout simplement de lui donner l'impulsion qu'il faut pour la rendre plus dynamique. Pour finir la mission a indiqué qu'il lui est nécessaire de disposer des cartes de communes</p>
	CAPM/SAP/AT/UE et PF	Présentation de l'Atlas	Noelle Terpend,	La Présentation de l'Atlas préliminaire a été effectuée par AS,

DATE	LIEU	OBJET	PARTICIPANTS	RESUME
25 mai 2001	Prêt	préliminaire, définition et prise en compte des besoins de l'assistance Union Européenne dans le domaine de la sécurité alimentaire	Dominique Blariaux, Pierre François PRET, IG, AS	<p>les assistants techniques ont trouvé que le travail qui a été fait est très intéressant et que Stone dispose des capacités pour prendre en compte certaines activités qui concernent leur domaine, celui de la sécurité alimentaire, notamment pour :</p> <ul style="list-style-type: none"> <li>- pour visualiser sur cartes les localités les plus touchées par l'insécurité alimentaire,</li> <li>- les villages qui méritent d'être immédiatement aidés</li> <li>- les zones où des projets de développement doivent être implantés</li> </ul> <p>les participants trouvent qu'à terme la prise en compte de ces activités doivent pouvoir servir à renforcer les capacités d'ajustement des populations et au règlement des conflits des parties prenantes sur le plan de leurs idées et de leur options. D.Blariaux a posé la nécessité de réviser les fiches de vulnérabilités qui ne permettent pas de prendre des décisions objectives et judicieuses puisqu'elles n'intègrent pas les données sur le bétail, ce qui du reste est un paramètre très important dans l'appréciation de la vulnérabilité des populations par rapport à la sécurité alimentaire. Stone Environmental Inc. se dit disponible pour voir cette question de très près, disposant des compétences nécessaire pour conduire ce travail. Une disquette contenant des données sur le bétail a été remise à AS par l'assistance technique Union Européenne.</p>
25 mai 2001 vendredi		Questions d'institutionnalisation d'un système d'information national d'informations, Perspectives de partenariat	I ;Mayaki, G.Zakari,IG, AS	<p>Les discussions ont porté sur la mise en place d'un système d'informations national et son institutionnalisation. AS a demandé principalement aux deux autres participants de lui faire connaître leur points de vue sur les sujets évoqués. L'idée globale qui en est découlée est la création d'une cellule locale de pilotage. Une réflexion pertinente doit être entreprise à ce sujet.</p>
26 mai 2001 samedi	Hôtel « Les Rôniers »	Projet de suivi et évaluation en sécurité alimentaire	Pierre François PRET, IG, AS	<p>Il a été surtout question de voir comment le dispositif National de prévention et de gestion des crises alimentaires peut s'intéresser à ce produit et exprimer ses besoins. Mr PRET en raison de sa situation conseille d'étudier plus en profondeur cette question avec David SADOULET, l'assistant technique Français junior de la cellule crises alimentaires qui disposera de plus de temps et qui plus est suit les projets d'atténuation des crises alimentaires.</p> <p>Il a été par ailleurs question que PFP fasse parvenir à Stone Environmental Inc. Une copie du projet de révision de la fiche de vulnérabilité.</p>

<b>DATE</b>	<b>LIEU</b>	<b>OBJET</b>	<b>PARTICIPANTS</b>	<b>RESUME</b>
26 mai 2001 samedi	Hôtel « Les Rôniers »	Point des activités et critiques	ISSA GARBA Andrew STANCIOFF	Dans son ensemble la mission s'est bien déroulé, l'importance des activités a été visiblement sous estimé, et il est noter qu'il ya eu nettement plus d'effort que la première fois, aucun effort n'a été ménagé de part et d'autre, les contacts et les réunions ont été dynamiques et fructueux.
28/05/2001 lundi	BANQUE MONDIALE	Point des dernières actions à entreprendre au Niger après le départ de AS	ISSA GARBA Andrew STANCIOFF	<p>Les activités suivantes ont été confiées à IG :</p> <ul style="list-style-type: none"> <li>- Suivre la lettre à Agrymet et obtenir les données images satellitaires par Landsat</li> <li>- Rechercher les cartes des communes</li> <li>- Récupérer la liste des besoins au MEN/DEP et au BCR(CENSUS), et au SIGNER</li> <li>- Rédiger la liste de l'ensemble des personnes contactées et leurs adresses</li> <li>- Rédiger les lettres de remerciements</li> <li>- Prendre le point de vue de personnes et personnalités différentes sur la question de l'institutionnalisation</li> <li>- Rédiger le rapport général des rencontres</li> </ul>

## **ANNEXE 2 : SYSTEME D'INFORMATION SUR LES RESSOURCES NATURELLES (SIRN) DU PGRN**

### **INTRODUCTION**

La présente note porte sur la composante Système d'information sur les Ressources Naturelles (SIRN) du PGRN. A l'approche de la fin du projet, il est important pour nous de porter un regard critique sur les activités prévues et les réalisations du projet dans le cadre du volet SIRN.

#### **I. Le Système d'Information sur les Ressources Naturelles (SIRN) du PGRN**

Les actions qui seront réalisées par le PGRN, pour être efficaces reposeront majoritairement sur la disponibilité d'informations pertinentes et fiables pour nourrir le processus de prise de décision. Les besoins du projet en informations ont été situés à trois niveaux à savoir:

- La localisation des zones d'intervention dans les terroirs et le dimensionnement de ces interventions;
- Une meilleure connaissance de l'évolution des ressources naturelles et les causes profondes de ces évolutions en vue de l'élaboration des politiques en matière de GRN;
- Et l'évaluation de l'impact du projet.

Les activités prévues dans le cadre du SIRN visent essentiellement à satisfaire ces besoins en informations avec la participation directe à leur production. C'est ainsi que trois institutions nationales, notamment l'Unité Technique d'Appui (UTA) de la Direction de l'Environnement, l'Institut Géographique National du Niger (IGNN) et l'Institut National de recherches Agronomiques du Niger (INRAN) furent choisies comme partenaires dans la production d'informations d'une part et d'autre part comme noyau de l'émergence d'un cadre national devant garantir de manière durable la disponibilité d'informations pertinentes sur les ressources naturelles au Niger.

#### **II. Objectifs et résultats attendus**

Deux principaux objectifs sont visés par le SIRN:

- 1) Satisfaire les besoins en informations identifiés au niveau du projet ;
- 2) contribuer à garantir de manière durable la disponibilité des informations sur les ressources naturelles à travers:
  - un appui institutionnel aux agences nationales intervenant dans le secteur,
  - la stimulation de l'émergence d'opérateurs privés devant compléter l'action des agences nationales,
  - la structuration des activités de production, de diffusion et d'archivage des informations sur les ressources naturelles.

Plus spécifiquement, les objectifs et résultats attendus portent sur trois types de produits à savoir :

##### **A) Production des données cartographiques/IGNN**

L'objectif premier est la production de données cartographiques devant fournir une description claire et appropriée des différents terroirs concernés par le projet afin de mieux orienter et localiser les actions et en suivre les impacts. Les produits cartographiques comprennent :

- des PVA au 1/40.000<sup>e</sup> sur 50.000 km<sup>2</sup> en début du projet et 10.000 km<sup>2</sup> en fin de projet ;
- le tirage de ces PVA pour fournir un outil de travail au Equipe mobiles Pluridisciplinaires EMP, agents Vulgarisateurs de Base AVB et animateurs de Terrain AT ;
- des photo-mosaïques partiellement contrôlées au 1/50.000<sup>e</sup> qui seront utilisées par les EMP comme carte de repérage ;
- Des cartes planimétriques au 1/10.000<sup>e</sup> pour chacun des 250 terroirs cibles, réalisées à partir des photo-mosaïques. Ces cartes planimétriques vont servir de support pour la collecte de données sur le terrain ;
- La mise à jour de la carte de base au 1/2000.000<sup>e</sup> à partir des imageries satellitaires à haute résolution.
- La définition des normes en matière de production cartographique

## **B) Bilan Diagnostic des Ressources naturelles / UTA**

L'objectif ici est de caractériser pour l'ensemble du Niger au Sud du 16° parallèle et le nord de l'arrondissement de Gouré l'état des ressources naturelles et leur évolution depuis 1975. Le principal résultat attendu de cette activité est un rapport d'analyse des tendances évolutives tenant compte des principaux facteurs naturels et anthropiques influant l'évolution des ressources naturelles. Cette activité s'appuiera sur quatre éléments essentiels:

- a) l'établissement des normes nationales d'inventaire des ressources naturelles par l'UTA en concertation avec les autres partenaires intervenant en matière de GRN. Il s'agit de rédiger un guide d'évaluation et d'inventaire des ressources et surtout d'occupation des terres qui décriraient des standards adaptés aux conditions nigériennes et portant sur les méthodologies, les échelles et les nomenclatures.
- b) la réalisation de la carte d'occupation des sols au 1/200.000<sup>e</sup> qui localisera et déterminera l'ampleur des phénomènes de dégradation des ressources naturelles, en particulier la réduction du couvert végétal, les différents types d'érosion et de feux de brousse. Elle quantifiera par arrondissement l'expansion de l'agriculture au détriment du domaine sylvo-pastoral ainsi que la réduction des jachères, La BDOS 2000 sera réalisée à partir de l'interprétation numérique à l'écran des images satellitaires à haute résolution et sur la base des nomenclatures définies et acceptées au niveau national. Cette cartographie couvre l'ensemble du territoire au sud du pays et sera réalisée selon les feuillets standards de l'IGNN soit au total 44 feuillets au 1/200.000<sup>e</sup>.

- c) la numérisation des cartes d'occupation des sols de 1975 : à partir des PVA de 1975, l'INRAN a élaboré en 1979 une cartographie d'occupation des sols des zones agricoles du Niger. Une numérisation d'appoint est prévue pour disposer sous format numérique de données afin de faire une comparaison avec les nouvelles cartes d'occupation des sols qui seront réalisées par l'UTA (BDOS 2000).
- d) l'intégration des données et analyse : la carte de base numérique procurera un référentiel géographique commun qui permettra d'intégrer l'ensemble des informations requises pour réaliser le bilan diagnostic. Ces informations porteront sur l'ensemble des facteurs naturels et anthropiques participant à l'évolution des ressources naturelles (informations démographiques, météorologiques, informations existantes sur les eaux, la pluviométrie, les sols, les différents types de production, les feux de brousse etc.)

### C) Audit socio-économique/ INRAN

L'objectif visé par l'audit socio-économique est de contribuer à l'évaluation des impacts du projet en terme de maintien et de reconstitution du capital productifs des terroirs concernés par le projet. Le résultat attendu est la production d'informations permettant de décrire le capital productif et son évolution. Il s'agit de :

- réaliser sur les 30 terroirs d'études des cartes thématiques au 1/10.000<sup>e</sup> à partir d'une série de photos aériennes ( 1975, 1995 et 1999). Ces cartes traiteront des thèmes suivants :
  - occupation des sols
  - état de surface
  - géo-morpho-pédologie (uniquement avec PVA 1995).
- Réaliser une série de mesures dans des sites de contrôle au sol situés sur les 30 terroirs d'étude, Les paramètres à mesurer sont relatifs à l'eau (pluviométrie, disponibilité en eau, qualité, débit profondeur de la nappe phréatique), les sols (suivi de la fertilité physique et de la fertilité chimique) et aux variables socio-économiques ( population, flux migratoire etc.). Les sites de mesures sont choisis sur la base de comparaison des cartes obtenues par interprétation des photos aériennes de 1975 et 1995.
- L'ensemble des informations collectées devront être intégrées par l'INRAN afin d'analyser de manière rigoureuse et pragmatique et à l'échelle du terroir, l'impact réel du projet sur le capital productif en tenant compte des autres facteurs physiques (climat), biophysiques et socio-économique influant ce capital.

Pour obtenir tous ces résultats, le coût total de la composante SIRN est de l'ordre de Trois Millions Huit Cents Quatre Vingt Mille (3.880.000) Dollars US.

Après cinq années d'existence de cette composante, il semble indiqué de faire le point de la situation en termes de résultats obtenus, d'activités qui restent encore à exécuter et surtout de l'impact de tout

cela dans le domaine de la disponibilité des informations sur les ressources naturelles. Pour ce faire, l'analyse se fera point par point pour chaque institution nationale partenaire du SIRN. Car cette approche permet de mieux maîtriser la situation. Cependant, il faut noter qu'il ne s'agit nullement ici d'une évaluation du Projet mais d'une présentation aussi claire et objective possible de la situation afin d'en tirer des leçons pour l'avenir.

### III. Les réalisations de la composante SIRN

#### 1. Au niveau de l'UTA

- Les cartes d'occupations des sols de 1975 réalisées par l'INRAN en 1979 à l'échelle 1/100.000 ont été numérisées totalement et sont disponibles sous formats ARC VIEW. Pour couvrir l'ensemble de la zone agricole, il manquait 38 feuillets au découpage de 1/100.000. Ce vide a été comblé par interprétation des photos aériennes et les cartes analogiques sont disponibles à l'UTA qui compte les numériser.
- Le projet de nomenclature, discuté au cours d'un atelier tenu le 9 et 10 Juin 1997 n'a pratiquement été validé qu'au cours d'une rencontre tenue à Torodi le 2 et 3 Avril 2001. Le document final n'est pas encore disponible au niveau de tous les partenaires.
- Ce retard dans l'élaboration de la nomenclature est le principal facteur qui a jusqu'ici bloqué le démarrage des activités de réalisation de la carte d'occupation des sols 2000 (BDOS 2000). Selon certaines informations c'est le projet qui a refusé de débloquer les moyens nécessaires pour le test de validation terrain de ce document. Sinon comment expliquer qu'un document amendé, enrichi et accepté par la partie nationale attende plus de deux ans avant d'être testé sur le terrain alors même que ce dernier constitue l'élément essentiel de la réalisation de la carte d'occupation des sols entrant dans le cadre du bilan diagnostique des ressources naturelles.
- Par ailleurs, la formation en télédétection qui devait être dispensée aux agents chargés de réaliser la carte d'occupation des sols n'a jamais été donnée. Cette formation était une conditionnalité car elle permettait aux agents d'avoir les compétences requises pour la réalisation des cartes numériques étant entendu que, au départ même il a été retenu le principe et admis que les agents n'ont aucune connaissance dans le domaine du numérique.

#### 2. Au niveau de l'INRAN

Comparativement à son cahier de charge, nous sommes tenté de dire que l'INRAN n'a pas réalisé grand chose. En terme de produits cartographiques, il a été réalisé :

- Des cartes d'occupation des sols à 1/50,000 par interprétation des photographies aériennes de 1996. Ces cartes sont disponibles actuellement sous format analogique à l'INRAN qui compte commencer leur numérisation d'ici à un mois.
- Des cartes des sols (pédologiques) de quatre Communautés Rurales (CR) de Tessaoua. Pour les treize autres CR ( 4 à Gouré, 3 à Boboye, 3 à Douchi) rien n'a été fait. Des TDRs pour la réalisation des cartes des CR de Gouré et Douchi sont soumis au projet qui n'a jusqu'ici pas réagi. Selon l'INRAN, il serait pratiquement impossible de finaliser les cartes des sols des CR dans la mesure où le SIRN prend fin à partir de Septembre 2001.

- En ce qui concerne la végétation, des sites ont été identifiés et des TDRs soumis au projet. Comme toujours l'INRAN attend le déblocage des fonds nécessaires pour démarrer les travaux.
- Les enquêtes socio-économiques ont été réalisées au niveau des 17 Communautés Rurales et de cinq arrondissements, Les données collectées ne sont pas encore traitées et analysées.

### 3. Au niveau de l'IGNN

Les réalisations de l'IGNN se situent à trois niveaux :

- 183 photo-mosaïques au 1/50.000è
- une carte planimétrique test au 1/10.000è dans la zone de Say. Le test a été reconnu concluant et l'IGNN attend l'autorisation du projet pour continuer les travaux. Ces cartes qui devaient constituer le support de collectes des données pour les équipes de terrain ne sont pas disponibles et cela entrave énormément les travaux de terrain. C'est dommage d'arriver à une telle situation surtout pour un projet de gestion des ressources naturelles.
- Pour ce qui est de la mise à jour des cartes de base au 1/200.000è, la situation n'est guère reluisante. En effet, les travaux entrant dans ce cadre sont au niveau de la numérisation des feuillets. Actuellement, 12 feuillets sur les 46 ont été numérisés. Les images haute résolution (SPOT) prévues sont arrivées pour certaines zones mais le contrôle de qualité de corrections (redressement) effectuées par la société Satellit Build n'a pas été fait. Aussi, l'IGNN attend que ce contrôle soit effectué pour commencer les premières mises à jour sur les 12 feuillets brutes numérisés.
- Fichiers localités : A ce niveau, il est déplorable que malgré les efforts faits par l'IGNN pour déposer les TDRs y relatifs de constater que le projet ne s'y est pas engagé. Cette situation a amené l'IGNN à abandonner purement et simplement le dossier fichier des localités.

### IV. Les obstacles à la production d'informations

Les obstacles à la production d'informations entrant dans le cadre du SIRN par les structures nationales se situent à plusieurs niveaux :

- Le retard dans le démarrage de la composante Système d'Informations sur les Ressources naturelles (SIRN). Prévue pour commencer en 1996, elle n'a finalement démarré ses activités qu'en 1999. Ce retard a eu des conséquences sur les autres aspects notamment les mesures d'accompagnement prévues en début du projet. Il s'agit de l'équipement des structures nationales en matériel informatique et logiciels appropriés, des différentes formations supportant les travaux. Ce retard est imputable pour certains à la lenteur et/ou lourdeur des procédures de passation des marchés. Il faut noter que jusqu'ici la formation en télédétection et traitement d'images n'a pas eu lieu. C'est seulement au courant de la troisième décennie du mois de Mai ou en début de Juin que est projetée.
- La non compréhension par les responsables du projet des objectifs du SIRN et de l'importance des outils cartographiques et des informations sur les ressources naturelles. Cette situation est à la base de beaucoup de désagréments et de tiraillements entre le projet et ses partenaires d'une part et d'autre part des difficultés de décaissement.

- Le non respect par le PGRN et des termes de la convention qui le lie avec ses partenaires. Un des points d'achoppement est celui relatif au fonds qui devait être mis en place au niveau des structures partenaires du SIRN. Le projet n'a jamais respecté cet accord et a préféré tout centraliser-pour des raisons qui lui sont propres et qui peuvent peut-être justifier ce comportement; ce qui est à la base de multiples blocages dans le décaissement des moyens financiers nécessaires à l'exécution des activités. Ainsi, il a été institué le principe de TDRs pour chaque activité à entreprendre. C'est là aussi que se situent les difficultés car des TDRs peuvent parfois attendre deux à trois mois avant d'être retournés aux initiateurs.
- La suspension à un moment des indemnités allouées aux agents affectés par les services nationaux pour le compte des travaux du SIRN a également contribué à la situation d'ensemble. Pour certaines des institutions notamment l'UTA la situation n'est pas encore régularisée et entache même la poursuite des travaux de numérisation des cartes d'occupation des sols de 1975 et le démarrage, futur des travaux de la BDOS 2000.
- Les changements intervenus à la tête du projet et des tasks manager au niveau de la Banque ont également contribué à ralentir les activités. En effet, à chaque fois qu'il y a un changement de personne à la tête, cela perturbe les programmes d'activités ou entraîne des nouvelles instructions aux partenaires.
- A toutes ces raisons s'ajoutent aussi la mentalité des agents chargés d'exécuter les activités. Dans certaines institutions, les agents ayant acquis des compétences dans la production des outils cartographiques en utilisant les nouvelles technologies se sont sentis tellement indispensables qu'ils posaient des conditions. Les travaux émanant du projet, chacun s'attend à une rémonétisation conséquente pour sa participation aux travaux.

### **ANNEXE 3: PROPOSITIONS, PROJETS ET ACTIVITÉS D'APPUI AU DSRP**

Les propositions suivantes sont suggérées dans un cadre appuyant le Secrétariat Permanent du DSRP et les Groupes thématiques. Les propositions faites dans ce document sont présentées en deux groupes :

(A) Les propositions ayant trait au mandat général du DSRP et (B) Les propositions ayant trait au mandat spécifique des Groupes thématiques.

#### **MANDAT GENERAL DU DSRP**

##### **I. PRÉPARATION D'UNE CARTE DE LA PAUVRETÉ AU NIGER**

La carte élaborée par Store Environnemental est préliminaire. Ceci dit, il s'avérera nécessaire de préparer une carte de la pauvreté qui sera plus évocatrice de la situation des plus démunis dans ce pays. Cette carte doit être conçue avant le 15 octobre 2001.

Les lacunes à combler sont les suivantes:

- la création d'un fond de cartes sur base d'images satellite *Landsat* pour pouvoir mieux expliquer la situation aux villageois et mieux comprendre les relations entre la pauvreté, le paysage et la physiographie du Niger;
- la création d'une carte de la situation de l'occupation des sols en l'an 2000 avec l'interprétation des images satellite *Landsat* pour l'étude des éléments suivants: les mares, les forêts, les pâturages et les terres dégradées en quatre catégories que sont les dunes dénudées, les mesas latéritiques, les savanes tigres et les socles dénudés;
- l'intégration des données SIGNER, en particulier celles liées à l'hydrologie;
- l'intégration des données du Ministère de l'Éducation nationale
- l'intégration des données du Ministère de la Santé/Direction du SNIS, en particulier les statistiques sur le paludisme et le ver de Guinée;
- la cartographie des ONG participant aux activités liées à la santé;
- l'intégration des indicateurs MICS2 de l'UNICEF pour les douze arrondissements sous enquête et des résultats de l'enquête participative sur la pauvreté;
- la création de cartes thématiques à l'échelle des cantons, ciblant les villages les plus pauvres;
- l'ajout d'un système interactif permettant la mise à jour de l'analyse et de la synthèse à tout moment;
- l'intégration des cartes sur le découpage communautaire.

Cet instrument servira de carte de base pour le suivi de la pauvreté et, éventuellement, pour l'évaluation des investissements et des actions menées sur le terrain pour améliorer la situation des plus démunis.

## II. INVENTAIRE DE LA DOCUMENTATION PERTINENTE

Il faut mettre en place une équipe dont la fonction sera la collecte des documents et des informations pertinentes sur la pauvreté. Ces sources d'information existent à deux niveaux, à savoir:

Au niveau national :

- Ministères
- INRAN
- ONG
- Archives nationales
- etc.

Au niveau international ou régional :

- IRD
- CESIEM
- Agrymet
- Universités
- Montpellier France
- FAO
- CERPOD
- CIRAD
- CILSS
- INSAH
- ONG
- sites Web

Les résultats attendus sont:

1) La collecte des documents et des informations pertinentes sur la pauvreté permettra la consolidation de la documentation sur CD-ROM avec menu élaboré par thème ou secteur de pauvreté:

- Santé
- Éducation
- Agriculture
- Développement rural
- Environnement
- Eau
- etc.

2) La mise à jour et l'amélioration du système national de documentation et d'informations (voir CIDEDEC et autres structures nationales du domaine), prenant en compte la diffusion des informations, la mise à jour et le suivi des études et informations pertinentes relatives à un développement durable.

### III. REVUE DES PROGRAMMES ET PROJETS À COURT ET À LONG TERME

#### 1. Projet de programme de suivi et évaluation

Cette activité permettra d'élaborer une base de données spatiales qui recensera les projets et les programmes nationaux et internationaux et permettra le suivi et l'évaluation de tous les investissements par secteur, jusqu'au niveau des cantons.

Le suivi des projets et des investissements utilisant une approche spatiale offre aux directeurs de projets un instrument visuel permettra une évaluation et une mise à jour rapides de la situation de leur projet.

Une telle approche épargnera de l'argent et évitera des redondances.

Cette méthode permettra à l'utilisateur de:

- Déterminer l'emplacement exact des activités de leur projet et leur étendue.
- Évaluer l'importance du projet par rapport aux autres projets opérant dans la même localité.
- Évaluer l'efficacité du projet par rapport aux projets antérieurs ayant opéré ans la même zone.
- Montrer le rapport entre le projet et les informations factuelles comme:
  - 1 . Population, santé, etc.
  - 2 . Physiographie, foresterie, climat
  - 3 . Sols, agriculture
  - 4 . Disponibilité en eau
  - 5 . Emplacement des écoles, marchés et autres aspects sociaux significatifs
  - 6 . Désertification et biodiversité
- Montrer, sous forme cartographiée et sur une base annuelle, les niveaux d'investissement du projet.
- Montrer le niveau d'investissement par habitant dans la zone du projet.
- Montrer le niveau d'investissement par secteur d'activité et par discipline (par exemple investissement par habitant/par école, par arrondissement, par groupe ethnique, etc.
- Montrer les changements dans le temps et évaluer le sens des tendances
- Fournir des paramètres statistiques sous un format spatial pour indiquer les progrès, la valeur des investissements et la progression du projet.
- Montrer les investissements similaires et ceux qui se chevauchent.
- Montrer les résultats historiques et les investissements.

#### 2. Propositions

Nous pensons que les bases de départ pour créer un tel système de suivi et d'évaluation existent déjà. Ces bases se retrouvent dans les anciens et nouveaux rapports et fichiers et ils sont rarement intégrés dans un système de suivi cohérent et synthétisé. Les pages de statistiques tabulaires sont difficiles à lire, à interpréter et à évaluer. Les données spatiales montrent les localités et les emplacements des activités ainsi que les zones non couvertes par les investissements. Ce système sera d'une grande utilité pour les investisseurs et les pays

en développement, les donateurs et les organisations mettant l'emphase sur l'environnement, ce qui leur permettra d'évaluer leur travail, leurs investissements et l'efficacité de leurs interventions.

Mettre en œuvre et spatialiser ces données dans un système d'information géographique (SIG) permettra aux directeurs(trices) de programmes et aux ONG d'assurer un suivi et une évaluation instantanée de leur programmes et de leurs projets.

Les systèmes d'information utilisant des données configurées sous cartographie spatialisée sont actuellement utilisés dans plusieurs secteurs et sont capables de répondre à une multitude de questions préoccupant les décideurs et les gestionnaires de projets.

La proposition d'utiliser ces mêmes données et systèmes pour le suivi et l'évaluation de vos projets ne posent aucune difficulté majeure tant au point de vue technique qu'informationnel.

Quant à l'approche, il suffit tout simplement de la tailler sur mesure pour répondre aux questions relatives aux besoins des décideurs qui ont le souci de s'harmoniser avec les objectifs tels qu'ils ont été définis dans les buts visés par le programme.

Mettre en œuvre un tel système nécessite un point de départ qui permettra d'ajouter et d'extraire des données afin de mettre en place un cadre de suivi permanent.

Nous proposons de mettre en place un projet pilote pour une région pour laquelle les données nécessaires sont disponibles et accessibles, afin de consolider les données du Système d'Information Géographique.

Nous estimons que ce projet peut durer de 8 à 12 semaines.

### 3. Résultats attendus

Il faudra préparer une série de cartes présentant le Niger jusqu'à la plus petite unité administrative et ce, en intégrant les données relatives aux populations et d'autres données disponibles pour créer la base de données de départ. Cette base de données sera superposée à d'autres données de différentes natures : emplacements des projets, leur étendue, le coût des projets, la période des projets, le nombre de population formée, les résultats par localité, le travail des autres donateurs ou ONG. Les autres variables seront intégrées conformément à la demande du contractant. Ces cartes seront superposées aux données spatiales combinant les nombreuses données dans les domaines socio-économiques, les ressources naturelles et autres données sur l'environnement pour montrer dans le temps et par paramètres.

Le produit final évaluera le travail des projets et permettra un suivi et une évaluation qui suivront.

## **IV PRÉPARATION DES TERMES DE RÉFÉRENCE POUR LES ÉTUDES COMPLÉMENTAIRES**

1. Création d'un système visant à renforcer les capacités de collecte, de sauvegarde, de traitement, de diffusion, de synthèse et d'utilisation des informations

Dans le cadre de la décentralisation, l'un des objectifs les plus importants consistera en la création d'un système de collecte et de diffusion de données fiable et utile, qui permettra aux populations rurales de profiter des données provenant du niveau central et vice versa. L'étude la plus importante dans le cadre de la réduction de la pauvreté serait une enquête sur les besoins en information et en données aux niveaux national, régional et local. Nous devons donc développer un système de collecte et de gestion de données qui permettra à tous les acteurs du milieu de mieux connaître le pays, sa population et ses ressources, mais aussi de permettre de faire le suivi et l'évaluation de la situation au jour le jour.

Nous devons créer les conditions pour le développement d'un système d'informations amélioré et son point de départ sera un ancrage (du système) qui assurera la pérennité, la cohérence et la discipline dans le cadre des normes établies et acceptées au niveau des structures nationales et internationales.

Deux études seront nécessaires :

- La première afin de décider l'emplacement du système pour assurer la pérennité et, en même temps, la décentralisation, en tenant compte de l'indépendance de chaque actionnaire du système,
- La seconde afin de préparer le cadre institutionnel qui régira les normes de collecte, les moyens, la sauvegarde, la diffusion et les autres aspects de la collecte des données. Cette étude de l'analyse des besoins du système national d'information tiendra compte de l'existence et de l'indépendance de chaque institution qui prendra part à ces travaux.

## 2. Enquête des ménages

Le développement d'un système d'enquête qui répondra aux besoins de l'évaluation et suivi de la pauvreté est essentiel. Il est évident que les enquêtes se font de plus en plus sur la base de paramètres sociologiques, anthropologiques, économiques, ainsi que sur d'autres paramètres, relatifs à la santé. Pourtant, depuis plusieurs années, les problèmes liés à l'environnement et aux ressources naturelles prennent une place de plus en plus importante dans la vie des paysans du Niger. Or, très peu de questions dans les fiches d'enquête s'intéressent aux aspects touchant les ressources naturelles, l'eau, les problèmes fonciers et le bétail. La richesse en ressources naturelles des pays d'où viennent les concepteurs des enquêtes peut expliquer cette lacune.

Si nous voulons répondre aux besoins des populations nigériennes, il sera nécessaire de leur poser d'autres questions, plus pertinentes que celles qui préoccupent les experts en la matière.

Nous proposons donc qu'une équipe soit mise en place pour développer un système d'enquête qui répondra mieux aux soucis de la population et qui nous permettra de faire un suivi plus exact ainsi que des évaluations utiles et plus significatives.

Même si nous supposons que les enquêtes type Care/Macro sont valables, elles ne satisfont que des besoins partiels. Des habitants d'un nombre restreint de villages sont interrogés (*cluster sampling*), ce qui permet une extrapolation sur les chiffres recueillis. Ces enquêtes peuvent nous donner qu'un aperçu de la pauvreté au

Niger. Elles ne présentent pas d'une manière prescriptive les villages les plus pauvres et ne nous montre pas si certains villages ont fait des progrès. Cela serait peut être utile si ces chiffres étaient représentatifs. En fait, la manière utilisée pour choisir les "clusters" ne prend pas en compte les différences ethniques de la population nigérienne.

### 3. Création d'un système de diagnostic rapide pour suivre et évaluer la sécurité alimentaire et la vulnérabilité des populations villageoises

Il s'agira de développer un système de prévision qui sera capable de faire, dès le 30 août, la situation de la campagne agricole en cours et ce, en fournissant aux décideurs des informations basées sur des critères complets, mais surtout conformes aux besoins et exigences du Niger et de ses partenaires. Les informations disponibles seront des informations fiables et elles ne se limiteront pas uniquement au niveau arrondissement, mais elles étudieront également jusqu'au niveau village, en passant par le canton. Les informations feront le compte du nombre de personnes déficitaires à tous ces niveaux et indiqueront leur besoin en nombre de tonnes.

En effet, chaque année, à la fin de la campagne agricole, une équipe internationale du domaine de la sécurité alimentaire se réunit pour évaluer les besoins des pays sahéliens. Le cas de chaque pays est exposé et leur situation est évaluée en fonction de la fiabilité de leur système d'information prévisionnelle. Ainsi, disposer d'un tel système convaincra les partenaires par sa qualité et la fiabilité des informations qu'il produit longtemps à l'avance et permettra à ces derniers d'évaluer la situation agricole dans les délais prescrits, de disposer de suffisamment de temps pour décider de leur intervention et d'être efficace en les programmant à temps.

#### 3.1 Cadre de référence structurelle pour le suivi de la sécurité alimentaire au Niger

La sécurité alimentaire au Niger peut être améliorée par la prise en compte d'une situation de référence au niveau sous-régional.

Une telle démarche a l'avantage d'identifier clairement les facteurs structurels et conjoncturels des crises et d'y remédier de manière opérationnelle.

Elle se justifie par la nécessité d'une base de données commune à toutes les parties prenantes de la sécurité alimentaire et de l'alerte précoce au Niger.

#### 3.2 Cadre de vulnérabilité

Le cadre aboutit sur la création d'un système d'information d'importance capitale qui utilise une variété de critères, de méthodes et de technologies pour répondre aux questions touchant la sécurité alimentaire, comprenant ses aspects structurels et conjoncturels avec une visée opérationnelle.

L'approche est basée sur la convergence entre les facteurs déterminés sur une base stochastique et empirique, afin de mieux comprendre la nature, l'extension et la récurrence des aspects liés à l'insécurité alimentaire.

### 3. 2.1. Objectifs

Il permet le suivi des conditions agro-météorologiques déterminant la croissance des végétaux pendant la saison pluvieuse agricole. Il détermine également l'évaluation du degré de satisfaction des besoins alimentaires des populations, suivant la localisation géographique, la période avant la récolte ou à la fin de croissance des pâturages naturels.

Il permet l'identification précoce des crises alimentaires.

Il aide à une meilleure compréhension des statistiques agricoles par l'analyse structurelle.

Il contribue aux décisions politiques touchant les question agricoles et environnementales.

### 3. 2. 2. Cartographie de la vulnérabilité

Les outils de système d'information permettent de représenter chaque facteur afin de caractériser l'ensemble des régions administratives ou zones de pays selon différents niveaux de facteurs considérés en relation avec son impact sur les disponibilités céréalières ou l'accessibilité aux produits céréaliers.

Le choix dans l'intégration des facteurs est davantage orienté plus vers une meilleure compréhension des besoins céréaliers des populations dans la situation temporelle la plus courante.

L'analyse par croisement de différents facteurs permet de mieux cerner la variabilité spatiale des facteurs ne dépendant pas d'entités administratives.

### 3. 2. 3. Identification des zones vulnérables

Sur la base de l'approche conceptuelle et du point de vue méthodologique, la représentation de la vulnérabilité structurelle agricole se basera sur les informations suivantes :

- Localisation spatiale des systèmes de production
- Répartition de la population rurale sur le territoire national
- Longueur moyenne de la saison pluvieuse sur une période définie
- Taux de couverture des besoins céréaliers

## I. - Le Groupe «Santé»

### 1. Préparation d'une carte sur le secteur de la santé

Préparer une carte qui aiderait à faire le suivi et l'évaluation de la situation au niveau des questions portant sur la santé. La carte serait bâtie à partir d'une base des données sous logiciel et montrera les aspects suivants:

1. Les centres de formation médicale, les hôpitaux, etc. par arrondissement et le nombre de personnes ayant accès aux soins médicaux;
2. Une carte des vecteurs porteurs de maladies montrant les zones les plus susceptibles de chaque vecteur;
3. Une carte montrant les zones d'intervention (par village et par population) des ONG dans le secteur de la santé et leur niveau d'investissement par personne, par arrondissement et par maladie;
4. Une carte des zones les plus importantes où se trouvent les médicaments traditionnels.

## 2. Préparation d'un forum des pratiquants, marchands et d'autres acteurs du secteur Médecine Traditionnelle

Préparer une rencontre/séminaire sur la pharmacopée traditionnelle aux niveaux régional et national, afin de faire le point sur l'importance de ces activités dans le cadre de l'étude des plus démunis comme dans le cadre préventif visant la population au niveau mondial. L'importance de ces produits ne peut être minimiser et pourrait devenir un volet important dans le PIB du Niger.

Il sera primordial d'assurer qu'un système de lois et de réglementations protège ce secteur afin que les profits ne soient soutirés par la population nigérienne.

## II. Le Groupe «Infrastructure, mines et énergie»

### 1. Étude du potentiel des eaux de surface et souterraines du Niger:

- Pour utiliser au maximum et d'une façon prudente ses ressources en eau, le Niger a besoin d'un bilan de sa situation hydrologique. Un système d'évaluation quantitatif doit permettre à la population comme aux autorités de mieux comprendre le potentiel du sous-sol du Niger pour avoir accès aux eaux d'irrigation, en particulier en période de contre-saison.
- Cette étude doit faire l'analyse et la quantification des ressources en eau souterraines du Niger en établissant les volumes d'eau par km<sup>2</sup> et le potentiel de production en m<sup>3</sup>/heure. Les données nécessaires à l'établissement de résultats quantitatifs sont à la disposition du gouvernement au Ministère de l'Environnement et de l'Hydraulique, Projet SIGNER. Si les données sont déjà disponibles, elles devront être mises à la disposition de tous.

### 2. Étude du développement d'un Système de télécommunication pour les Pauvres du Niger :

- Se basant sur les projets de radio des communautés rurales (Voir Goudel et al.), il est proposé qu'un système de télécommunication soit mis en place pour permettre aux villageois d'échanger des informations relatives aux prix des marchés ou encore la santé, l'environnement et de la climatologie.

- Ce système devra s'appuyer sur la technologie *WorldSpace* et devra chercher des fonds dans les secteurs privés. (Fondations Gates, Soros, etc.)

### III. Le Groupe « Développement du secteur privé, artisanat et tourisme»

#### Cartes touristiques:

- Identifier les sites touristiques les plus intéressants.
- Préparer des cartes et des dépliants touristiques sur les sites paléontologiques des dinosaure, les mares, les axes des oiseaux migrateurs, les zones d'orpaillage, les marchés et les sites (*white water*) d'intérêts, sur le fleuve, les nécropoles Songhay (accompagne de guide du Musée, les études anthropologiques, les girafes, les hippopotames et le Parc du "W".
- Développer ou améliorer le site WEB du Niger pour présenter celui-ci dans un cadre plus positif

### IV. Le Groupe « Décentralisation, gouvernement et renforcement des capacités»

#### Renforcement des capacités:

- Identifier, développer et mettre en place un système de renforcement des capacités visant la conscientisation des partenaires face aux problèmes socio-économiques, de l'environnement et des ressources naturelles du Niger.
- Ce renforcement des capacités prendra la forme de cours ou de séminaire de formation qui sera offert par des experts nigériens dans les domaines concernés. Ces séminaires à caractère obligatoire seront financés par les partenaires et les ONG.

### V. Le Groupe «Vulnérables et exclus sociaux»

#### Analyse et synthèse de la cartographie de la pauvreté:

- Identifier les zones et villages les plus vulnérables en ciblant les populations les plus défavorisées en partant de l'analyse et la synthèse de la cartographie de la pauvreté
- Identifier dans chaque village les populations qui souffrent pour des raisons socio-économiques, par manque de nourriture ou par l'absence de certaines ressources naturelles.
- Préparer des analyses qui permettront de déceler les populations les plus vulnérables et exposées au risque de déplacements ou de conflits.

### VI. Le Groupe «Population et VIH-SIDA»

#### Cartographie de la situation et impact du SIDA:

- Préparer une carte de la situation du SIDA par arrondissement.
- Cette carte nous donnera un point de départ pour mesurer l'impact de ce fléau et faire le suivi et l'évaluation de cette maladie, ce qui nous permettra de cibler les groupes clé pour des interventions ponctuelles.

## **ANNEX 4: OUTLINE OF A PROPOSED ASSESSEMENT OF A COUNTRYWIDE GIS IN NIGER**

The following is a detailed outline of the elements that would be contained in a proposed Needs Assessment for a Countrywide NIGER GIS (NGIS):

Preface

Acronyms, Abbreviations, and Trade Names

Executive Summary

### **PART I: OVERVIEW**

#### 1.1 Introduction and Background

#### 1.2 Approach

Needs Assessment

Systems analysis

GIS Program recommendations

Stages of the Project

Outputs

#### 1.3 Institutional Settings

Introduction

General Institutional Observations

Specific Conditions

Current Organizational Conditions

#### 1.4 Current Regulatory Environment

### **PART II: NEEDS ASSESSMENT**

#### 2.1 Current and Planned Activities Using GIS

Needs Analysis Survey

Interviews

Development Planning and analysis

Emergency Services

Environmental Protection and Natural Resource Management

Land Information

Health & Medical Services

Food Security and Distribution

Network/Facilities Management

Major Conclusions and Findings

#### 2.2 GIS Datalayer Development

Past and Present

Planned Data Development Activities

Major Findings and conclusions

#### 2.3 GIS Database Management

#### 2.4 Hardware and Software

Method of Compiling GIS Hardware and Software Information

Current Status of GIS Hardware

GIS Software

Computer Viruses

Current Status of GIS Peripherals

Future Hardware and Software Needs

GIS System Acquisition

Major Findings and Conclusions

#### 2.5 Existing Training Efforts

Training Program Descriptions

Existing Training Program Assessment

- Department Participation Summary
- Levels/Skills
- Motivation
- Resources
- Training Program Evaluation
- Major Findings and Conclusions
- 2.6 Regional/International Opportunities and Support
  - Opportunities
  - Donor Support
- 2.7 Existing Protocols and Standards
  - Department of Census
  - Department of Statistics
  - Department-IGN
  - Roads Department
  - Regional and Arrondissements Offices
  - Niger Data services
  - Nigelec
  - Major Findings and Conclusions

### PART III: PROGRAM RECOMMENDATIONS

- 3.1 Organization & Management Requirements and Considerations
  - Participants in a NGIS
  - Pathways to Establishing NGIS
  - Locating the Coordinating Organization (NCGI)
  - Phase Development of NGIS
- 3.2 Application Development
  - Application Priorities
  - Development Planning and Analysis Activities
  - Emergency Services
  - Environmental Protection and Natural resource Management applications
  - Land Information Applications
  - Network and Facilities Management
- 3.3 Data Development Priorities
  - Large Scale Datalayer Development
  - Medium and Small Scale Datalayer Development
  - Data Input Options
  - Options for Completion
- 3.4 GIS Policies, Standards, and Guidelines
  - Digital Data Development Standards
  - Digital Data Documentation
  - Data Dictionary
  - Transfer and Protocols Interchange
- 3.5 Hardware/Software System Design & Recommendations
  - GIS Software Recommendations
  - Database Management Software
  - Memory Management Software
  - The Future
  - GIS Hardware Designs
  - GIS Peripherals
- 3.6 GIS Database Maintenance and Management
  - Tiling Structure for Datalayers
  - File Naming Conventions
  - Datalayer Updating Procedures
  - GIS Data Backups, Archiving, and Security

### 3.7 Training Recommendations

- General
- Process
- Aptitude/Attitude
- Office Environment
- Training Areas
- Methods
- Skill Development
- Retention of Trained Personnel
- GIS Education Reference Source Materials
- School Curriculum

### 3.8 Donor Support

- Guidelines

### 3.9 Access/Cost Recovery

- General
- Who
- How
- Copyright/Licensing
- Data Access and Cost recovery Issues

### 3.10 Guidelines for Continuing System Development

- Adoption of Report & Transmission of Recommendations
- Creation of NGIS Oversight Committee
- Establishment of formal Coordinating Organization
- Recruit and Hire Staff
- Identify and Obtain Funding
- Develop/Adopt Five-Year Plan
- Adopt Standards
- Individual Departmental Needs Analyses
- Training Plans
- Data Development
- Application Development

## **ANNEX 5: PROGRAMMATIC MONITORING AND EVALUATION USING A SPATIAL DATABASE**

### **Background and Rationale**

Many organizations seek to improve their ability to monitor and evaluate the effectiveness of their programs in the areas or countries in which they are working and in measuring the per capita value of their investment. Monitoring projects and investments using a spatial approach provides the program managers with a visual tool allowing rapid assessment and updates of the status of the project. Such an approach will save money and avoid redundancy. This method will permit the user to:

- Determine the exact location of the project activities, and show the extent of the project activities.
- Evaluate the project's significance in terms of other co-located projects.
- Evaluate the project's effectiveness in terms of previous projects in the same area.
- Show the relationship of the project to factual information such as:
  1. Population, health, etc.
  2. Physiography, forestry, climate
  3. Soils, agriculture
  4. Availability of water
  5. Location of schools, markets and other significant social aspects
  6. Desertification and biodiversity.
- Show the investment levels of the project in cartographic form and on an annual basis.
- Show the investment level per capita in the project area.
- Show the investment level per sectoral activity; i.e., investment per capita/per school by district, by ethnic group etc.
- Show change through time and assess direction of trend.
- Provide statistical criteria in a spatial format to indicate progress and the value of the investment and the progress of the project.
- Show overlapping investments.
- Show historical effects of investments.

### **Proposal**

We believe that the data to create such a monitoring and evaluation system are available. These data rest in old and new reports and files and are seldom integrated into a coherent, synthesized monitoring system. Pages of tabular statistics are difficult to read, interpret and evaluate. Spatial data maps showing locations of activities and areas lacking in investment would serve investors and developing countries, donors and environmentally focused organizations attempting to evaluate their efforts, investment and the effectiveness of their interventions.

Setting up and linking this data geographically in a geographic information system (GIS) will allow instant monitoring and evaluation capabilities for program managers and NGOs. Information systems using data in a spatial map configuration are being used in many

disciplines and to answer many questions. The proposal to use these same data and systems for monitoring and evaluation poses no technological or informational difficulties. The approach simply requires that it be tailored (designed) to answer questions relevant to the needs of the decision maker who must know whether the investment is paying off with respect to the objectives as defined in the program goals.

Setting up such a system creates a time related baseline that allows for adding and subtracting data and creates a continuing monitoring framework. We propose to conduct a pilot project to consolidate data in a GIS for one country for which the data are readily available. In view of the work that SEI has conducted for the World Bank on Poverty and Vulnerability mapping, we propose to use Niger as the site of the Pilot Project. We believe that this project can be accomplished in 8-12 weeks.

### **Deliverables**

Stone Environmental Inc. would prepare a series of maps and data bases showing Niger down to the smallest administrative unit, adding population and other available data to create a baseline. These data would be superimposed with data on project location, area, cost of project, length of project, number of people trained, results by location, the work of other donors or NGOs, etc. and other variables as requested by the contractor. These maps would be superimposed on spatial data combining the various socioeconomic, natural resources and other environmental data to show conditions by parameter and changes through time as effected by the project. The final product would assess the effect of the project and would permit subsequent monitoring and evaluation.

## ANNEX 6: TERMS OF REFERENCE

### Identification of Institutional Framework for a Data and Information Support System to Support the PRSP and Community Action Program

*Terms of Reference*  
April 7, 2001

#### 1. Background and Rationale:

An initial mission to Niger resulted in the development of a Preliminary Atlas of Poverty and a report on available local data and capacity. One conclusion of this effort was the need to identify and build the institutional capability and initiate the design of a national and decentralized information system for the purpose of monitoring the country and village level conditions related to poverty.

This data and information system would support two recent initiatives in Niger that could benefit substantially from a coherent and multi-sectoral data collection and interpretation effort using GIS and related data management tools.

The first initiative will support the ongoing preparation of the Poverty Reduction Strategy Paper (PRSP). The PRSP must articulate targets toward which progress (particularly with respect to social infrastructure) must be met in the coming years. To judge whether targets have been reached and progress has been made, the strategy must also attempt to systematically estimate the costs of achieving these targets.

A secondary target is the preparation of the Community Action Program (CAP), which is foreseen as a national and long-term program to support decentralization and promote multi-sectoral and community-based micro-investments and, as such, represents an instrument to carry out the recommendations of the PRSP.

#### 2. The Assignment:

The tasks of this of the assignment are:

1. Translate and convert the existing Preliminary Atlas of Poverty and Report into French.
2. Complete & convert database inventory with rating for quality and usefulness to efforts.
3. Complete set of maps by arrondissement similar to one in Preliminary Atlas for Tanout.
4. Develop a map of poverty for several of the IDG indicators by arrondissement or canton.
5. Meet with CAP and other relevant groups to explain and review efforts to date and to identify the institutional framework for a poverty reduction information system in support of the the PRSP and the future CAP. Work with World Bank country team and field personnel and PRSP to:
  - a. Conduct a demonstration of the Poverty/Vulnerability Maps for the PRSP Team. Request response in terms of PRSP goals and objectives. Pose questions. Refine remainder of Mission with PRSP leaders and World Bank Staff.
  - b. Develop Poverty Reduction Strategy data and information support system with the PRSP team.
  - c. Define the information sources and focal points for continuing information support of the PRSP. (Complete Inventory)

- d. Develop an institutional framework for information and data sharing at the central level.
  - e. Develop a devolutionary methodology for decentralized information collection and sharing.
  - f. Develop a consensus on PRSP poverty indicators.
  - g. Set up PRSP data collection guidelines.
  - h. Define Institutional Relationships for Data and Information gathering and distribution in support of the PRSP objectives.
6. Design a Pilot Project for Poverty Data collection to support the CAP
    - a. Define needs and requirements for a Poverty/Vulnerability Pilot project to collect and disseminate data in support of the CAP/PRSP.
    - b. Conduct field assessment of village and needs and capacities to collect and disseminate data.
    - c. Conduct field assessment at the Prefecture and Sub-prefecture level to evaluate bottom up approach to data collection and the possibility setting up regional Poverty Data Collection Nodes.
    - d. Define the Institutional relationships between Central, Departmental and local data collection groups.
    - e. Visit and assess CAP/NGO activities and integrate information into Pilot Project design.
  7. Identify preliminary training requirements for the life of CAP and beyond.
  8. Prepare report and recommendations
  9. Presentation findings and report to Bank.

A Phase III consultancy would work with the CAP and the identified institutions to address the data needs identified by this consultancy, the desired system specifications, system acquisition details, deployment and training needs, institution building requirements, data dissemination, communication, and the issue of sustainability.

### **3. Deliverables**

The consulting firm would be responsible for the following:

- Preparation of a report in French containing the findings and recommendations on the above, which will be delivered on July, 31 2001.
- 50 Copies of Preliminary Atlas in French and one electronic copy in Acrobat file format
- 50 Copies of Report in French and one electronic copy in Acrobat file format
- 1 Copy of MS Access Database of databases in French
- Organization and delivery of two presentations – one for the CAP/PRSP with the aim of education on the need for a information collection and reporting system.
- Conduct a post-mission presentation of the report and maps.

The firm will report to Daniel Sellen, Rural Cluster Leader for Niger, at the World Bank.

### **4. Time Period:**

The length of the assignment is 56 person days in total. This will involve one mission to Niger beginning 7 May 2001 and end on 28 May 2001. The report and presentations will be due no later than July 31, 2001.

## **5. Proposed firm:**

The consulting firm proposed is **Stone Environmental Inc.** from Washington, D.C. (phone: 202-337-1221, website: [www.stone-env.com](http://www.stone-env.com)). They would provide two senior experts: David Healy, Vice President and Director of Stone's GIS Facility, and Andrew Stancioff, Senior Associate at Stone with nearly 30 years of experience in West Africa (Niger in particular) on food security, population, agriculture, health and other relevant issues.