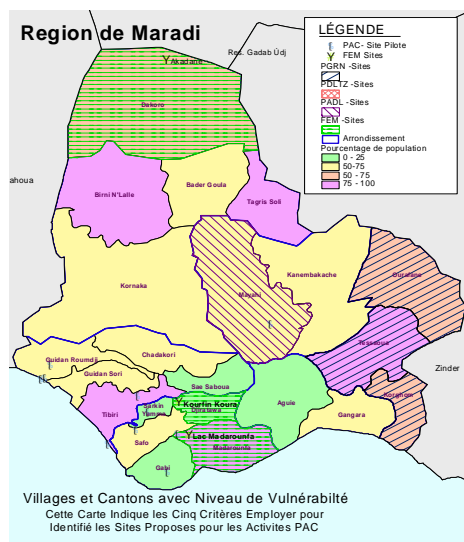

Niger Community Action Program Appraisal

Mission: Poverty Monitoring & Evaluation

Prepared for :
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A Summary of Activities and Compendium of Supporting Documents Related to Information Support System

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Preface

This report synthesizes the results of a 23-day Appraisal Mission that Stone Environmental Inc. (SEI) participated in while in Niger. The mission had the following objectives: (see TOR Annex I)

- Prepare for and attend a Workshop on Poverty Reduction, Bamako Mali; March 9th - 15th.
- Prepare and make a presentation at a Workshop on Poverty Reduction and Poverty Reduction Mapping for the DSRP and SRP; Government of Niger. May 7th – 10th.
- Conduct CAP/PRS Appraisal Assistance Mission – World Bank and CAP Niger Program.
- Review the activities of the PGRN and its associated agencies; IGN, UTA, INRAN to evaluate the availability and feasibility of integrating work conducted by these agencies
- Develop a Proposal for a Pilot Project to Create a Poverty Information Management and Monitoring System for the PAC.
- Confirm DSRP support of the proposed PAC Pilot Poverty Information System and solicit assistance in its preparation from the DSRP.
- Assist the CAP in developing the criteria for FEM/GEF sites.
- Assist in the development of an Information System Structure that would create seamless software based methodology to integrate Poverty Monitoring with Project Monitoring and Evaluation for the CAP.
- Demonstrate the necessity for and assure the compatibility of the CAP/SGI with the ultimate needs of the SIRP.
- Add a WEB ready version of the Poverty Atlas to the DSRP Niger Pauvrete.
- Conduct an over-flight based on still photos and video to assess possibilities of integrating low altitude information into the PAC Information System in support of a village based poverty mapping methodology.

This Mission was undertaken under the auspices of the Technical Department of the World Bank, Africa Region. The work conducted during this Mission was coordinated by personnel of the World Bank and with the collaboration of the Permanent Secretariat of the DSRP at the Prime Minister's Office in Niamey. Additional supervision, support and assistance were provided by the Office of the Community Action Plan in Niamey and the World Bank Mission in Niamey, Niger.

Although the individual objectives are defined above, the principal goal of this mission was to create a process as a bridge between the SRP at the national level and a system for evaluating and monitoring poverty through capacity building at the village level, implementing such a system through the Community Action Plan. (CAP).

Introduction

Many critics of the PRSP process suggest that the Bank and the IMF have essentially total control of the country efforts to develop the PRSP and that their experts micromanage the process. The critics also state unequivocally that there is no national ownership of the decision making process. Recent experience in Niger raises a number of doubts regarding this extreme position.

Since late 2000 SEI has participated with Nigeriens in the preparation of documents, maps and reports on the status and level of poverty in Niger in support of the PRSP and the Program d'Action Communautaire (CAP or PAC). The activities carried out by SEI and its Nigerien associates involved

the following: preparing an Atlas of Poverty and vulnerability; preparing a report on the Identification of an Institutional Framework for Improving Data Collection and Information Management with a view to Reducing Poverty and this report which summarizes the support provided by SEI to the Nigerien government to prepare a Workshop to discuss data and information on poverty and poverty mapping.

In early May 2002 SEI was asked to work with the Government of Niger to prepare a Workshop on poverty reduction. This workshop was organized by the Government of Niger and attended almost exclusively by Nigeriens. The presentations, discussions, debates, conclusions and recommendations of this workshop were 98% Nigerien. The outcome of the workshop was that a number of important recommendations affecting poverty reduction were accepted and will be forwarded to the government for legalization and implementation. Perhaps the most significant result of this workshop was that the attendees were nearly unanimous with respect to the objectives of poverty reduction as defined by the PSRP and also supported the methodologies proposed to identify and locate the poorest populations to permit a prescriptive and objective approach to investment at the local level where it counts most.

The PRSP and its derivatives will not reduce poverty. The work done by SEI and its Nigerien associates to identify Niger's poorest populations, to outline the technical and institutional deficiencies and requirements of a national information system; the preparation of a proposal to create a Pilot Information System to monitor poverty, will not in and of itself reduce poverty. These efforts can only provide the vehicle and draw the road map for reaching the poorest people and providing them with the most appropriate assistance so that they may choose their own way out of poverty. This approach may or may not work and doubtless the Bank and its partners have made mistakes; but it should be clear that no mistakes could be attributed to the Bank's efforts at increasing knowledge concerning poverty. The poverty mapping effort is also flawed and must be improved. The Government of Niger has recognized this fact and is putting in place a number of institutional supports to improve data collection and dissemination as well as to provide capacity building at the national and local level. Efforts are also underway to increase the participation of local populations in order to develop a more realistic set of poverty indicators, indicators that truly reflect the reality of the poor of Niger.

Additional Background

The collection of poverty data and its cartographic expression and use to identify the poorest populations of Niger is equivalent to the creation and application of the map Dr. John Snow made of the Broad Street Pump Cholera Epidemic in 1854. Dr. Snow mapped all the cases of Cholera during the epidemic and found that over 97% of the cases were located near the public pump which he then found to have been shared by all of the deceased and also to have been infected with Cholera. Dr. Snow's observations and deductions provided him with the solution to the problem: removing the handle to the Pump. As a result no more cases occurred in this part of London. The deductive reasoning followed by Dr. Snow, in this now most famous epidemiological study provided him with a prescriptive solution to the problem and a means to arrest the progress of an epidemic which had the problem gone unresolved might well have caused many more deaths. This first case of socio-economic data being merged cartographically with resource information and the map derived, clearly provided evidence of the utility of spatial data analysis for problem solving. It should also be noted that Dr. Snow used a participatory process in that the families, friends and acquaintances of the deceased were interviewed to define the indicators and the limits of the study.

Another important early study directly related to the work done by SEI for the Nigerien government was the work of Charles Booth who 1889 mapped Poverty in London England by showing the social condition of every individual by street and tenement. True-to-scale maps showing the individual buildings on the streets of our cities are a fairly recent innovation, and thematic maps displaying selected characteristics of city life are relatively rare. Considering this, the colored maps created by Charles Booth to depict the social condition of every London Street in 1889 were a startling innovation. Those maps, like the innovative village Atlas created by SEI and its Nigerien associates, clearly show the advantage that The Nigerien Atlas has over other “poverty mapping” efforts. Most discussion to date has defined poverty mapping in western terms and using western symbols for poverty. The poverty maps created to the present also typically present data and information aggregated to the political units that paint too broad a brush and miss the differences made obvious by Charles Booth in his study of London. Geographical mapping on the basis of the criteria and variables used in the Atlas of Poverty for Niger provides a view of the country that permits one to understand why one village is very poor while the village next to it is inexplicably well off. This approach also and more importantly allows one to question and so seek the answers to why such differences exist.

Sonia Rocha (1998) of IPEA, Brazil supports such contentions. She implies that most poverty mapping efforts are contextually not relevant. She defines poverty on the basis of needs and not income or other western based parameters of wealth and poverty. “Defining the relevant and operational poverty concepts and choosing the adequate measurement procedures is the result of a sensible and informed analysis of social reality...it is a matter of identifying the essential causes of poverty. What are its roots? Is it a traditional syndrome or does it result from economic and technological change? What are its main features - undernutrition, low schooling, lack of access to public services or unemployment and marginality.” She adds that: “This overall information on the poverty syndrome is the key element for conceiving a framework in which poverty analysis and anti-poverty policies are to evolve. Specifically it means adopting concepts and measurement instruments that seem the most appropriate to a specific context in terms of social reality and data gathering capabilities.”

It is with this background in mind that the following report is written. We believe that mapping the elements of poverty and food security provides the decision maker with a completely new view of the problem he/she is trying to solve. Providing a geospatial dimension to poverty helps to find solutions to problems that seem to defy solutions. Dr. John Snow resolved a very complex, if localized medical problem by using this technique. Charles Booth spatialized poverty in London and influenced the understanding of 19th Century London and defined the process for attacking poverty through the spatial dimension.

Present methods for poverty or deprivation mapping used in the West are not contextual with Niger’s problems. For example the State of Illinois maps among other factors, recreational and crime statistics. In Mexico mapping of Poverty in the State of Guanajuato, considered among other issues marginalization, income and the quality of the dwellings. The latter is very important in Mexico but much less so in rural Niger. In Dorset, England, < www.dorset-cc.gov.uk > housing, disability and employment are important factors used as indicators. It is interesting to note that in the case of the Dorset study, the poverty is measured using an index of deprivation with six indicators which are weighed based on an established calculation.

Poverty mapping and the capacity to understand the geography of poverty will provide Nigeriens and their partners with a new outlook on the origins and causes of the problem. Once the origins and cause are better known ideas, innovative approaches derived from this knowledge will become more common. It will be necessary to improve the assessment of poverty. This may be done by adding or deleting indicators based on developing these with the rural poor. It may also be necessary to define indicators of poverty/vulnerability/deprivation/food security by establishing a weighted system that more correctly reflects the level of poverty of the individuals and villages concerned. The development of tools to increase our knowledge with respect to poverty is the only way to find solutions to deprivation and poverty in Niger.

The following pages describe the activities of SEI and its Nigerien associates during its most recent Appraisal Mission.

Poverty Reduction Workshop Bamako, Mali March 9th- 15th

As part of an effort to support the work of the DSRP, the World Bank financed a capacity building effort by the DSRP to demonstrate work conducted in Niger in 2001 on Poverty Mapping and the use of geographic information systems for data integration. The presentations also showed how environmentally sensitive sites as defined by the Global Environmental Fund (GEF) can be integrated to combine areas of greatest poverty with areas of environmental importance as a targeting strategy for poverty reduction.

Two Nigerien scientists associated with the DSRP received assistance to attend a Workshop in Bamako. This Workshop was sponsored by USAID in its effort to promote African science, technology and capacity building with the goal of preparing for the WSSD (World Summit on Sustainable Development) in Johannesburg, South Africa.

SEI, the consultant, assisted these two scientists who attended the meeting in preparing the presentations on Poverty Reduction work in Niger, including the preparation of the Poverty/Vulnerability Atlas of Niger and the process used by the Nigerien team in choosing the 23 most sensitive environmental sites in Niger. (Annex 10)

The presentations demonstrated that Niger is a leader in West Africa on poverty reduction efforts. Furthermore the quality of the presentations showed that Nigerien scientists were able to prepare their own Power Point Presentations as well as much more complex efforts involving the use of GIS to define the choice of environmentally sensitive sites. (GEF)

The USAID Mission Director to Mali, Ms. Pamela White, opened these meetings and then made it a point to return to hear the Nigerien Presentations. Since that time Malian experts have convinced USAID Bamako to consider funding a Poverty Mapping effort in Mali.

Workshop on Poverty Reduction and Poverty Reduction Mapping, Niamey, May 7-10, 2002

In discussions with the World Bank and the DSRP Committee it was established that those involved in the process of poverty reduction in the government of Niger as well as the general public should be informed with respect to the poverty reduction policies of the government and the process of

mapping and targeting the poorest populations in Niger that had been developed by SEI. Furthermore it was deemed important to provide decision makers with a venue to permit them to critique the Poverty/Vulnerability Mapping process. Perhaps the most important goal of such a workshop was to discuss the technical needs and manpower requirements to create a National Poverty Monitoring System. The emphasis in the development of such a system was that the system be developed to serve the poor and to be serviced by them.

Workshop Objectives

This workshop was prepared by the Office of the Strategie de Reduction de la Pauvrete, (SRP) under the Director of the Permanent Secretariat of DSRP in the Office of the Prime Minister. Originally the workshop was to have been held from the 1st to the 3rd of May. For a variety of reasons including that the 1st of May was a holiday, the workshop was postponed to the 8th and 9th of May.

SEI had originally proposed a plan for the workshop with the following objectives: (see TOR in Annex 3)

- Presentations of the Poverty/Vulnerability Maps;
- Presentation of various Nigerien information systems;
- Discussions on future methods for Poverty Monitoring and Evaluation;
- Discussions on the creation of a Pilot Information System in the PAC.

The workshop provided a vehicle for disseminating the results of the Poverty Mapping efforts and receiving comments and criticisms for integration into the final Nigerien Poverty Maps and development of a monitoring information system to support the CAP. These maps can be prepared only once the National Census has been approved and published. Comments and suggestions were to be included in the CAP assessment report for the implementation of a Pilot Information System for monitoring poverty as well as for creating an improved CAP Monitoring and Evaluation Program.

The DSRP reviewed the SEI proposal and made a number of changes to the goals and objectives of the workshop. The following topics and issues were retained as objectives. (Annex 4)

1. Describe the Goals and Objectives of the SRP.
2. Describe the most recent updates to the national Census and needs and requirements of the Census.
3. Present the Poverty Mapping Atlas
4. Present the process used to choose and locate GEF/Poverty priority sites.
5. Present the multivariate and integrative process used to chose and locate the intervention CAP sites.

The DSRP organizational group outlined a number challenges that were to be met by the Workshop. These challenges were:

1. To discuss the national statistical service and the existing system in terms of its national and international obligations.
2. To assess how poverty is to be measured in all of its dimensions and complexity.

3. To respond to the needs of the user community in real time with respect to poverty monitoring in the context of economic, financial, social, political and environmental factors.
4. To find ways to improve data to permit a regular update of the SIRP.
5. To identify methods to improve internalization (understanding) and updating of geographic data.
6. To identify methods to improve institutional capacity building to achieve a better understanding of poverty in Niger.
7. To define the objectives of an Institutional framework for the Poverty Reduction Information System. (SIRP)
8. To outline and define the roles of the different individuals and groups involved in the implementation of the SRP.

Furthermore the Permanent Secretariat challenged the Workshop attendees to consider the following problems related to poverty assessment and monitoring and to propose and outline solutions dealing with data accuracy and reliability. The problems defined as meriting special attention were:

1. Improve the census and assure its viability.
2. Assure effective and representative household surveys.
3. Evaluate and assess the cartography of socio-economic factors.
4. Define and identify the process of updating cartographic information and data.

Workshop Activities

The workshop lasted 48 hours and a cross section of government, international, private citizens and ONG representatives attended. The largest proportion of attendees was Secretaries General of Ministries and Directors of Cabinets. The Minister of Economy and Finance opened the workshop. After a chairperson and secretariat were chosen the technical presentations were made. The presentations were as follows:

- The National Strategy for Poverty Reduction. (Malla Ari)
- The Information System of the Direction des Statistiques et des Comptes Nationaux (Representative of the Direction des Statistiques).
- The Poverty Atlas. (Mallam Souley Oumarou)
- The Community Action Program (PAC) and the GEF sites: The Case of Kokorou/Namga. (Arimi Ari)
- Choosing PAC “Sites” in the Region of Maradi: A Multiparametric Methodology for Prescriptive Investments by the PAC. (Andrew Stancioff)

These presentations were followed by questions and debate on the merits of the presentations.

Comments and Criticisms

Among criticisms of the Atlas the following comments were noted: numerous editorial mistakes, poor and missing information on the road network, lack of coherence between certain databases in the Atlas, and a confusion as to the meaning of the different data layers, their origin and veracity. Perhaps the most salient critique focused on the inanimate aspect of the maps and their poor

resolution. It was unclear to most of the attendees that this Atlas and its maps represent only “layers” in an interactive system. It was also clear that most attendees did not understand GIS although a surprisingly large number were knowledgeable about spatial data and its utility.

Among other comments and critiques were noted the lack of cooperation between agencies, the lack of coherence between sectoral data bases at the national level, the lack of standards and codes to allow the ready exchange of information and the poor quality of the national statistics.

To further discuss and debate these issues and to prepare a set of recommendations for the Government, it was decided to form two commissions to discuss the following topics: *Problems Related to the Effective Measurement and Assessment of Poverty and the Creation of a better Understanding of the SRP and the Systeme d'Information pour la Reduction de la Pauvrete*.

Recommendations of the Working Groups

After discussions the commissions each proposed a series of recommendations to be presented to the government. Twelve recommendations were integrated into a document to be distributed to all parties involved and to be acted upon by the government.

The recommendations are as follows:

1. The creation of a national coordination structure to deal with information and statistics.
2. The creation of an oversight committee charged with the updating of databases from different sectors.
3. The creation of a single location database code.
4. The development and adoption of a national policy on statistics.
5. The creation of a “light” coordination structure for the SIRP at the level of the Permanent Secretaries office.
6. The creation of a coherent system for data collection and analysis and a framework for planning.
7. The implementation and monitoring of a consensually agreed upon code of operation in the sector of data and information analysis and treatment.
8. The utilization of new technologies in the communications and information sectors.
9. The creation of and support for a committee with the responsibility to develop the methodologies and choices for poverty indicators.
10. The identification and evaluation of existing statistical structures.
11. The reinforcement of operational organizations and functioning mechanisms in support of national, regional and local structures.
12. The establishment of a mechanism to define the periodicity to be implemented in the process of future data collection and statistics and their transmission, both at the national as well as at the local level.

Results of the Workshop

The results of the Workshop are numerous and significant. Perhaps the most important is the unified approach and cooperation shown during the workshop commission meetings and the concerted effort made by those assembled to reach consensus on the issues and problems defined by the DSRP. The coherence, spirit of cooperation and volunteerism, the level of interest demonstrated at

this workshop was nothing short of admirable. Based on previous experience in West Africa, the effort demonstrated in Niger is a far cry from most meetings during which boredom was evident, lack of knowledge and interest typical; and personal glory and political ends the only apparent objectives. This meeting was an extraordinary display of an apparent change of direction in centralized thinking in Niger, in which Poverty Reduction is the objective of most of the Government, if only as a means of self-defense in a country where change must take place or the poor overwhelm the rich.

With respect to the PAC, the results of the Workshop proved to be very effective and clearly support the expectations for poverty reduction as defined by the PAC. These results include:

- The Workshop accepted, in principle, the notion of a Pilot Information System (Systeme de Gestion d'Information-SGI) to be located in the PAC.
- The development of a national capacity to collect and treat, analyze and distribute information on the monitoring of poverty, and the evaluation of strategies created for its reduction (this development includes a top-down and bottom-up process).
- The Workshop provided a structure related to a spatial referencing system for information and data collection.
- The Workshop also provided for a means of information exchange at all levels.
- The Workshop also accepted the need for a national set of standards and a unified coding system to facilitate data collection and exchange.

Conclusions

Among the significant accomplishments of this Workshop were the high level of cooperation of the participants; the endorsement of a rational approach to a national SGI; the acceptance of a number of technical suggestions to create a unified coding system to simplify data collection, transmission, and information processing. The Workshop participants also developed a framework for capacity building at the national and local levels to assure efficient data collection, analysis, and distribution. Perhaps the most significant accomplishment is the value given to this Workshop and its results by the government. The Minister of Finance and Economy opened and closed the Workshop and read the final Communiqué, Annex 5, which lays out a framework for legal action as well as defining a work-plan for the future of a National SGI.

Support of CAP Management and Program Assessment

The SEI team provided the following contributions to specific aspects of the CAP appraisal:

- Support of the CAP assessment by working with the CAP Team in support of its objectives.
- Preparation of a Draft Proposal for a Pilot Information System to be situated at the PAC (Systeme de Gestion d'Information-SGI). [Annex 9].
- Assessment of PGRN information and its data collection system (SIRN) for integration into the CAP
- Preparation of a matrix of indicators (Annex 12) defining the choice of GEF sites and the addition of thirteen sites.
- Choosing PAC Intervention Sites—An Integrated Approach.

- Assistance in providing an interface between the SGI and the Monitoring and Evaluation System being prepared for future CAP activities.

Support CAP Assessment

The SEI Team participated in a large number of the Assessment meetings, in particular, those involving Information Systems monitoring and evaluation and all aspects related to the choice of GEF sites and natural resource management, decentralization, environmental safeguards, HIV/AIDS mapping, and monitoring and evaluation of project activities. Each of the preceding topics was defined by a report from specialists on the Team, followed by comments and contributions for the development of an effective PAC assessment.

With respect to SEI's involvement and responsibilities, it became clear that the contribution of the SEI Team should be to focus on evaluating the data collection system to be implemented at the CAP. In addition, the Team should review the information available from the PGRN, and develop an improved method for choosing GEF sites and future CAP poverty reduction investments, and the approach to be used to provide an efficient means of monitoring poverty as well as monitoring and evaluating project accomplishments.

Preparation of a Draft Proposal for a Pilot Information System, Annex 9

Based on previous work provided by SEI to the Government of Niger, including the *Atlas of Poverty/Vulnerability*, it was noted that a system for identifying the poorest should be put in place as quickly as possible to support the CAP partners working in the field and to develop the methods and standards required by the national system to be put in place when the government has defined its long term needs, requirements and created the framework and institutional setting for such a system.

The PAC Assessment Team established that a Poverty Monitoring Information System should be put in place to provide the PAC with a method for assessing poverty levels, and to provide a prescriptive means for objective and sustainable investment. In addition, a PAC Information System would integrate and incorporate the information collected by the PGRN and its partners over the last 15 years. Finally, a Spatial Information System (GIS), such as is presented in the *Atlas of Poverty/Vulnerability*, would provide the basis for long-term, cartographically-defined project monitoring and evaluation system.

Such a system is needed until a National Information Database can provide the necessary information to support PAC and related activities. The PAC Team was made aware of the fact that information required for monitoring poverty, as shown in the Atlas, was of a preliminary nature, pending/awaiting completion and approval of the National Census. It is not expected that final approval of the Census will occur before 2003. In the meantime, the Government of Niger and the World Bank are sponsoring a workshop with the assistance of the SEI Team to discuss national information needs for poverty reduction and the institutional and capacity-building requirement for such a system (see section-Workshop May 7th-10th) The CAP cannot await the results of the Workshop, and should, therefore, design its own system to monitor poverty in the areas chosen by CAP as well as providing support for project monitoring and evaluation. This system would provide information at the two levels noted above, and, thus, is an Information Management System, rather than just a GIS.

This system is expected to be transferable and interactive with the needs and requirements of the National system to be defined by the Workshop. The goal of such a system will be to provide a rigorous structure whose standards and codes would match international data and information requirements. The system will be interactive and will, therefore, allow the acceptance and dissemination of information from other autonomous national databases.

The SEI Team has provided a Preliminary Proposal for such a system that will serve both central and village-level data collection needs. Because of the PAC's goals and its emphasis on working at the village-level, the proposal focuses on developing a village-based data collection system to be integrated into a Poverty Reduction Information Network (PRIN). The incorporation of PGRN information has been included in the proposal. The proposal defines all elements of the SGI, including long-term goals, immediate objectives, capacity building, equipment needs, and staffing. A budget was developed for a period of 4 years. During this period, technical assistance will be necessary for the development of a framework for the system and to provide for an efficient transitional methodology toward a National System of Poverty Reduction (Système d'Information pour la Réduction de la Pauvreté-SIRP).

Assessment of PGRN Information and its Data Collection System (SIRN) (Annex 11)

The SEI Team visited the offices of the PGRN, the IGNN, and the UTA, and was provided with a tour and description of the data and information that will be made available to the PAC at the termination of the PGRN contract in September 2002. In addition, the Team was shown hardware and software to be transferred to the PAC. The Team did not assess the office materials and vehicles to be made available to the PAC.

An overview of available information suggests that a great deal of useful material can be transferred in both hard and soft copy to the PAC. This includes the databases in the SIRN. A visit to the IGNN indicated that work on the updating of the 1:200,000 scale topographic map sheets was neither complete nor on schedule. Of the forty-six map sheets to be completed by September 2002, 20 sheets were completed and had been corrected. Three additional map sheets were in progress and should be complete by September. The manager of the project expects that the 26 additional map sheets can be completed by June 2004. The SEI Team considers this schedule as optimistic in view of the termination of funding of this activity by the World Bank.

This work is extremely important in the context of the SIRP and the production of a final cartographic/census document covering areas of Niger below the 16th parallel.

The visit to the UTA indicated that their work on vegetation and land-use cover is only partially complete. The work itself depends on the interpretation and comparison of aerial photos of 1975 and satellite imagery from the 90s. The photo-interpretation of the 1975 photography by INRAN was never completed and some of the information from the satellite interpretation has been lost due to a system-crash. The work was limited to three zones where the PGRN/CGRN were working. These include the regions of Tessaoua, Dogondoutchi, and Say. The objective of this work was to show change in the environment and vegetative cover during the 25-year period.

The completion of this work cannot be expected for September, but additional financing has been obtained from the Italian government to finish this effort.

It is important to note that the planned PGRN products (SIRN) are indispensable for the creation of an effective national database on natural resources as well as being the cartographic basis for all future census and poverty work. The completion of this work should be supported and its need by the CAP (SGI) should not be underestimated.

Matrix of Indicators (Annex 12) for Designating GEF Sites

The CAP Assessment Team evaluated the choice of GEF sites as provided by Arimi Ari, consultant to the CAP and established that an additional 13 sites should be chosen and described for inclusion in the GEF investment of the CAP. In addition, the consultant, who is part of the SEI Team, was requested to create a matrix defining the criteria used in choosing the GEF sites. The designations were based on a number of specifications derived from national and international criteria for environmental and biodiversity protection. The sites were chosen because of their importance as freshwater, forest, and food-related resources. In certain cases, the criteria included protection from overgrazing, dune remobilization, soil depletion, and deforestation.

The integration of these sites into the tapestry of CAP activities will be based on the location of the commune in which the site is found.

Choosing CAP Intervention Sites—An Integrated Approach

The *Atlas of Poverty/Vulnerability*, created in 2001, provided the first approach to choosing CAP intervention sites. This approach was based on selecting the poorest villages on the basis of a number of poverty-indicators, including availability of schools, health centers, wells, suitable soils, and rainfall. A summary of the poorest villages was created for each arrondissement and each canton (commune). The summary map prepared shows poverty levels by canton and by location of the poorest villages. It was thought that this approach would permit the CAP to choose groups (grappes) of villages in certain clusters, where investments and other poverty-reduction interventions would be best applied.

With the addition of funding from the GEF, a multi-level approach to choosing the poorest villages was developed, integrating socio-economic and environmental factors based on the choices made by the PGRN and the CAP (see above).

The CAP Evaluation Team considered other potential parameters as the basis for choice of poverty-reduction targets for the next phase of the CAP program. Among these parameters was the location of communes in which CAP pilot studies had been conducted. Cantons where the PGRN had conducted field efforts were also considered as choice sites. In addition, cantons in which the U.N. and French aid was working should also be considered as zones of intervention for the implementation of the next phase of the CAP.

This combined approach for choosing CAP intervention sites includes; villages of the greatest poverty and areas of environmental significance to these were added areas in which PGRN and CAP activities existed. SEI Environmental then synthesized these variables in a map detailing the final choice of communes. This combination of factors and its synthesis was prepared using geographic information system (GIS). A demonstration of this approach was prepared for the CAP Assessment Team and the Workshop for the region of Maradi.

This synthesis, while not as objective as the original Poverty/Vulnerability summary map, appearing in the Atlas, does provide for the inclusion of other mitigating factors of a pragmatic and socio-political nature.

Providing an Interface between the SGI and the PAC Monitoring and Evaluation System

The SEI Team assisted the CAP evaluation in creating a coherent structure and framework to support project monitoring and evaluation for all future CAP intervention-components. The SEI GIS expert, David Healy, worked with Paul Talafo, the M & E expert, to develop a spatial interface for the M & E software package proposed for all M & E activities of the CAP. This required agreement on standardizing of codes and other data entry modules. The Team also identified the necessary sub-systems and other requirements of the proposed M & E/SGI to provide for the inclusion of village data and an effective monitoring and assessment of poverty. The M & E designed for the CAP will provide for an appraisal of short-, medium-, and long-term objectives for a built-in performance-based indicator matrix. This tool(s) should permit decision-makers to gauge the effectiveness of CAP investments and interventions through time, and measure project impact on poverty and poverty-reduction efforts at the village level.

The matrix designed and the criteria chosen to define and describe the GEF sites will be used to develop a long-term methodology for measuring project impact on the 23 GEF sites, prioritized in Annex 12.

In conclusion, the SEI Team attempted to provide for a seamless interface between the CAP Information System and the CAP M & E system, designed to monitor the effectiveness and sustainability of the World Bank-sponsored poverty reduction effort of the Nigerien government.

Assure the compatibility of the CAP/SGI with the ultimate needs of the SIRP

The ultimate objectives of the Government of Niger, as stated in the DSRP, are to provide an institutional framework to support poverty reduction and the required supporting information system (SIRP). Committees appointed by the Workshop on the basis of a consensus are developing this institutionalization framework for the Government. The SRP will design and propose legislation to guide the implementation of the National Information System. This information system will not only serve poverty reduction efforts, but will also be the basis for all national data collection and statistical information. A number of recommendations have been made in support of such a program; however, a functioning institution cannot be operational for a number of years (see requirements and directives in final Communiqué of the Workshop, Annex 57).

To assure that the PAC/SGI is appropriate and meets the long-term requirements of the SIRP, the SEI Team discussed the requirements of a national system with experts from the National Statistics Bureau and experts from the Bureau of the Census, as well as the executive director of the SRP (Mr. Malla Ari) and his staff. This effort culminated in the presentations made at the Workshop and the recommendations derived from the working-group consensus. In support of the SIRP and the ultimate goal of improving information systems in Niger, SEI also added the *Atlas of Poverty/Vulnerability* to the SRP web site: www.nigerpauvrete. The addition of this information to the Nigerien Poverty Reduction website permits all those with access to understand the geospatial dimensions of poverty.

The SRP has defined as its goal the need for an internationally accepted standardized system. It has also defined as one of its requirements an information system that will provide for village-based data collection and the integration of locally developed data into a national system. The SIRP local component will survey the concerns of local populations and take those concerns into consideration in developing the requirements for poverty assessment. Based on work conducted by the PGRN and the CAP Pilot Projects, a similar approach has begun to emerge as the only means of collecting valid/real information on poverty. Experience from the pilot efforts has indicated that villagers and communities are very much aware of their status and the objective criteria that define their poverty. The CAP/SGI will take into account local opinion and develop the tools and surveys for measuring poverty at the local level and in response to local needs.

One of the tools that the SEI Team wished to evaluate to provide a bridge between centralized poverty-reduction experts and villagers was a “visual trajectory” of the natural resources, environmental, and socio-economic indicators that represent poverty in the Nigerien milieu. To do this, SEI wished to photograph certain basic elements of village and rural life on the ground and by photographing a panorama of these indicators in low-level aerial over-flights to tie these individual and group relationships to the larger, synoptic view available on satellite imagery (and, in a less realistic way, on the poverty maps). To accomplish this, SEI and its Nigerien consultant, Arimi Ari, hired a high-wing aircraft and flew from Niamey to Madaroumfa, via Maradi, at an altitude of 300 ft. over the area of interest (between Maradi and the Nigerian border and return over Madaroumfa). Weather conditions deteriorated rapidly between Niamey and Dogondoutchi and visibility decreased to less than 1 km. due to dust in the atmosphere.

The canton of Madaroumfa was chosen as an over-flight target on the basis of the Canton Level summary conducted through GIS analysis as shown in the Poverty Atlas. The GIS summary indicated that this canton was one of the poorest in the Maradi Region, represented by at least 5 indicators of poverty.

The flight from Maradi south to the Nigerian border overflying Madaroumfa was hampered by turbulence and less than 200 m. visibility. The results of the still photography and videography were, therefore, poor and cannot be used to accurately demonstrate natural resource, environmental, and socio-economic parameters normally visible from these low over-flights. The USGS, the AGRHYMET Program, the CSE in Senegal and Arizona State University have used such overflights on numerous occasions in West Africa. In those efforts, the imagery and videography were used to correlate ground features to satellite information to provide for ground-truth and to allow for extrapolation of information from small sample areas to larger units. These tools are inexpensive and, when the visibility is good, can be used to demonstrate information on the environment to farmers and villagers, thus allowing them to translate local-level information into a larger and more holistic context.

In spite of the poor visibility and turbulence, the over-flight permitted the team to assess certain features of great importance in evaluating relative wealth or poverty in Niger. In the area of Loga and Dogondoutchi, large numbers of zai and demi-lunes were noted. The use of these natural resource management practices indicates a change in attitude and environmental thinking in Niger. Such practices are a positive development and suggest a possible decrease in poverty levels in Niger if these practices are adopted in other areas. Clear weather would have produced effective videos and still pictures that could have been used as capacity building tools in village demonstrations.

During the over-flight we noted that there were no visible irrigated crops in Niger in the region of Madaroumfa. However, as the flight progressed across the border into Nigeria, large areas of irrigated crops were noted and two sizeable reservoirs were being used to distribute water to luxuriant irrigated areas. It was also apparent that the water used in these irrigation schemes was flowing down-slope from Niger into Nigeria. Such water could and should be used in Niger for irrigation and production of crops in the contre-saison.

In spite of the poor weather and lack of visibility we believe that aerial over-flights are an excellent tool to measure and monitor poverty levels in Niger. Their use is not limited to measuring levels of degradation and changes in the status land use, but will also serve as a training tool to apprise rural populations the status and appearance of their immediate environment, but also of environmental change and degradation in the larger context of their region and their country.

It is hoped that such tools will serve as a means of enlightening rural populations in the future and providing them with the means to understand the effectiveness of improved land use practices. A series of workshops should be considered to put this approach into practice, using this technology and integrate it into the tool kit used by the CAP and its partners.

Another tool to considered in assessing and monitoring poverty in Niger is the village-based survey. These village-based surveys would be conducted by the villagers themselves and would measure and evaluate certain environmental and/or socio-economic parameters in a repetitive manner in order to provide information on the evolution of that indicator. The villagers themselves would choose the indicators and maintain the survey questionnaires and make observations with regard to the parameter of their choice. The villagers would also be asked to make and update maps such as the ones they already make to show the locations of houses, granaries and fields. The CAP and its partners would assist the villagers by providing them with baseline documents, maps and survey forms and would assist the villagers in designing the forms. Information and data coming from village sources would be fed into the CAP/SGI to provide the basis for long monitoring of poverty and poverty reduction.

This approach would be of importance in developing the national SIRP and every effort should be made to create a data collection and information gathering structure with the approval and cooperation of the SIRP Committee and the National Statistics Committee. These two groups would assist the CAP/SGI group to identify the village level indicators considered the most important in support of an efficient and sustainable poverty monitoring system. The SIRP and its partners would then provide the necessary institutional support to permit the integration of these data and information into the national system. The SIRP would also seek to solicit the cooperation of other Ministries and Regional as well as Communal authorities to cooperate, maintain and sustain such data bases and to integrate these same data bases into their daily operational logistics and statistical framework.

Similarly the SIRP and the PAC have been advised of the necessity of developing a methodology for assessing long-term project impact not only on the 23 GEF sites but also on all of the participating PAC Communes. The assessment of the GEF sites will be a relatively simple matter if only environmental factors are used as indicators or yardsticks for evaluating change. The equation will become far more complex in view of the fact that we shall not only attempt to improve the state of the degraded natural environment but also the level of degradation of the human or social environment with all of its complex relationships; including human health, education, and income.

It is unlikely that a methodology for assessing long-term project impact can be developed without the full cooperation of a number of actors in Niger. These groups include the CAP, the SIRP Committee, the Census and the National Committee on Statistics. To develop such a methodology it is proposed that a select group of individuals from the above groups and an additional group of highly motivated and involved experts meet at a workshop to define the performance based criteria that will permit the government and its partners to assess the short; medium; and long-range success or failure of the Poverty Reduction Program. This system will not only permit all those interested to monitor and evaluate the impact of the program, but will also provide an immediate geographical indication of what villages are faring better and those that are doing worse. The system will also provide information on the programs reasons for failure or success and link this to a cause or causes.

Summary

During its most recent consultancy in Niger, SEI and its Nigerien associate, accomplished the following tasks:

1. Provided Support to the DSRP in organizing and preparing a workshop to expose an important segment of government decision makers in Niger to the value of a well developed plan for Poverty Reduction; the essential role of viable village based statistics from a well developed census and the integration of such data into a Poverty Atlas to permit effective investment based on prescriptive targeting of Niger's poorest populations. In addition the Consultant assisted the government of Niger in providing capacity building as follows:
 - Prepared a Web based version of the Poverty Atlas and made it accessible on the Nigerien DSRP web site; < www.nigerpauvrete >
 - Worked with the Office of the DSRP to define a future working relationship with the SIGNER, Niger's most complete existing national level GIS and data source.
 - Provided support to the DSRP in preparing two Power Point presentations. These presentations were made by Nigerien Government representatives at a USAID sponsored GISD conference in Bamako Mali.
2. Supported the CAP/World Bank evaluation effort by providing the following assistance:
 - Developed a Proposal and budget to create a Pilot Information System at the PAC to Monitor Poverty and provide the basis for a future National Poverty Monitoring System.
 - Evaluated the importance of integrating the natural resources data available at the PGRN, (SIRN) and the maps produced by its partners at the IGNN and UTA.
 - Prepared a matrix of the parameters used to choose the GEF sites to be integrated into the CAP targeting and investment strategy.
 - Assisted the PAC in developing a PAC Site Map using GIS to integrate, combine and synthesize all parameters used in developing an investment Strategy for the PAC and its partners.
 - Evaluated the use and application of aerial videography and photography as a tool to bridge the poverty information gap between villagers and central Government experts and centralized data collection tools.

Conclusions

The work conducted during this mission allowed the consultant to:

1. Assess the value of poverty mapping in Niger.
2. Assess the effect and need of Capacity Building in Information and Data Collection and Management. [Pilot Information System for the PAC (SGI)]
3. Understand the need for decentralized poverty monitoring and the development of a participatory process in the definition of poverty indicators.

1. Poverty Mapping in Niger:

The Workshop held in Niamey demonstrated the effectiveness of the DSRP process and the value of the World Bank's support of this process. The attendance of high level officials, their active participation and the well defined goals set by the Final Communiqué of the Workshop Secretariat and agreed upon by the attendees, clearly demonstrates a high level of interest, understanding and will to achieve the goals of the DSRP.

Furthermore the recommendations of the workshop communiqué clearly demonstrate that the participants are aware of and support the goals of Poverty Mapping for targeting of poor populations. The participants demonstrated an interest in changing data collection methods and in creating a national information system based on clear and well defined procedures for coding, standards and data dissemination.

This level of understanding and accord by Nigerien authorities on the most basic requirements of a coherent and rigorous system is probably the first such agreement and statement of its type in West Africa. In the conclusions of the Workshop Communiqué the attendees request that the Government of Niger support an institutional framework for the creation of a long term national information system and the necessary supporting elements to sustain such a system; including training, capacity building and a means of decentralizing both data collection and distribution. The Workshop participants unequivocally supported poverty mapping in support of the DSRP process.

The Nigerien experts who participated in the preparation and presentations of the Poverty Atlas and the Location of the GEF sites also demonstrated a high degree of knowledge of the problems associated with poverty mapping and the relationship between poverty and the environment.

The Workshop showed that Nigerien authorities have made great advances in understanding the need and the support for a long-term approach to Poverty Mapping as a means of providing an objective methodology for targeting the poor and monitoring poverty and its effects. The conclusions of the attendees also indicated that there are a number of gaps to be filled to achieve an effective poverty reduction information support system. These gaps were identified, among others, as a deficient national statistical base, an incomplete and deficient census, a lack of a decentralized information and data gathering capacity, deficient information sources, the need for shared standards and codes, the need for improved capacity at all levels, the support of national and local information gathering institutions and the lack of awareness at all levels of the importance of knowledge and information on poverty and its effects on society. In addition the Nigerien participants pointed out

the need for data collected at the most disaggregated level and the fact that donors and partners tend to use aggregated and generalized data that is not relevant for targeting at the village level.

2. Building Capacity and Defining a Pilot Information System for the CAP

In an effort to resolve the problems discussed in (1) above; the consultant worked with the DSRP and especially with the CAP to define an appropriate national poverty monitoring information system. In working with the CAP evaluation mission it was noted that the CAP during its next phase would be in need of an information system to: create a baseline in the areas of its interventions, create a monitoring system to evaluate shifts in poverty and a means to provide project monitoring and evaluation. To assist the CAP, the Consultant designed a Proposal for a Pilot Poverty Information System that will also serve as a project Monitoring and evaluation support for the project and its overall M&E effort.

The Pilot System has been designed as a preliminary version of the National system to be put in place by the SIRP. The Pilot System will function at the CAP and will continuously work and interface with the SIRP, the national Bureau on Statistics, the Census, other national, regional and local data bases and the Committees appointed by the government to develop the standards and norms required to manage such a system. When the National system is ready for implementation as a focus and source for poverty data collection and dissemination, the CAP will transfer its metadata, databases, methodologies and other relevant and necessary materials in order to assure coordination and long-term sustainability of the system.

The CAP will also work with farmers and NGOs to develop village based data collection systems to supplement the national centralized approach.

3. Developing a Decentralized and Participatory Information System

The PGRN and the Projet Energie II have both developed participatory methods for data collection. Both groups have worked with villagers and village associations to develop data and information gathering methods in support of their databases. The PGRN will transfer its databases to the CAP and these will be used to supplement the information required by the CAP to establish the location of the poor and to evaluate the level of poverty of the “Grappes” in which the CAP is working. The Projet Energie II has been working on fuel-wood sale, consumption and distribution with women’s groups in certain parts of Niger. This experience and that amassed by CARE International as described in its 2002 study, (Etude sur les Institutions Locales, Decentralization et Reduction de la Pauvrete au Niger) will be used to develop the appropriate survey forms to assess various factors related to poverty as the villagers themselves define poverty. (Sonia Rocha 1998- On Statistical Mapping of Poverty: Social Reality, Concepts and Measurements).

A number of authors (see Bibliography) advocate a more participatory approach to mapping poverty but very few offer any experienced based advice. From a review of the literature it is apparent that such a participatory approach is still a long way from being realized. David Bigman (2000) does provide some insights on the approach to be taken as defined by work conducted in Burkina. Notwithstanding these efforts most poverty mapping is not participatory. Most poverty maps are regional analyses based on aggregated data. Although some of these data have been collected at the household level, they are then aggregated to a county or regional level and are of little relevance to a

village-based poverty targeting approach. Certainly the data have little to do with the understanding of poverty by the villagers themselves and do not reflect village level poverty, insecurity or deprivation.

The CAP developed a plan to target poverty in Niger in the next phase of activities, by superimposing a number of parameters in a GIS. These parameters are illustrated on the cover of this report. This approach tends to be all-inclusive as it rationalizes the choice of CAP sites by combining: poorest villages; environmentally degraded sites; (GEF) NGO Pilot Sites, UN intervention sites; etc. This rationale for the choice of future CAP intervention sites dilutes the value of the prescriptive approach established through the poverty mapping using the indicators established for that purpose. A village based poverty indicator system developed by the rural populations as proposed above would certainly be of great value in targeting the poorest villages. The value of these indicators would be mitigated, however, and their use called into question if the more political approach choosing CAP sites is put into effect.

Recommendations and Next Steps

This Consultancy represents the third phase of an effort begun in early 2001 to assist the Nigerien government in support of the DSRP and the Community Action Plan. The first phase consultancy developed an Atlas of Niger showing the poorest villages and the basis of their poverty or level of deprivation when taking a number of parameters/indicators under consideration.

The second consultancy focused on evaluating the Government of Niger's institutional capability in the context of Information Technology, Geographic Information Systems, Natural Resource and Socioeconomic databases and supporting statistical information. That effort also reviewed the various institutional structures at the ministerial level to assess their capacity to house a national information system in support of the DSRP.

This third consultancy has been able to assist the government in defining the gaps in the National information system as well as needs for a coordinating function at the highest level to assure effective data collection in support of the SRP. The consultancy also assisted the government and the CAP to outline the framework, structure and requirements of a pilot information system. It is the recommendation of the consultant that a number of steps should be taken to assure that progress continues apace on building a national and sustainable information system in support of poverty reduction.

The following are some specific recommendations in this regard.

Supporting the DSRP/SIRP

- **Census**

Every effort should be made to support the effort of the Census to complete its work. The Census team needs to be better equipped with up to date hardware and software. The personnel need additional training in the most recent census methods. The cartographic equipment is antiquated and the field teams do not have proper base maps upon which to plot census data. It is recommended in this regard that the Nigerian government be provided with the digitized maps made by the Soviets in the 70s and 80s (*TOP, Niger Topographic Map Series* < www.omnimap.com > *Soviet Military – 1977-88*).

The digital layer representing place names should be removed as these are in Russian and are therefore useless. Unlike the IGN and IGNN Maps, which are much older and which have been updated in only a few cases, the Russian maps cover the entire country, are more recent, and were created with much more precision. These maps could also serve as the base maps for CAP activities as well as many other programs.

- **Committees**

The Donors should make every effort to support the various committees being formed to support the SRP as per the Final Communiqué.

- **Workshops at the National Level**

The Donors should continue to support the DSRP effort at the National and Regional Levels through a series of seminars similar to that presented in Niamey in May of 2002 (see Final Communiqué for details of activities).

- **DSRP/CAP Information System Coordinating Committee**

The DSRP/CAP should make a concerted effort to create a coordinating committee to support the creation of the Pilot Information System at the CAP. This committee should discuss standards, data collection methods, information modeling, and other requirements of the National Information System. The committee should also discuss capacity building, training, and support of other National Information Systems (Sectoral).

Supporting the CAP Process

The recent consultancy has provided the World Bank and the Government of Niger with the outlines of a Pilot Project to set up a CAP Poverty Monitoring Information System (System de Gestion des Informations—SGI). The funding and implementation of this Pilot Project will assure a systematic approach to poverty monitoring, decentralized data collection, and an interface with the SRP, as well as other entities in the central government. The following steps are recommended as a means of achieving the goal of an efficient poverty monitoring information system:

- **Developing a Coherent System within the CAP**

Annex ?? provides a step-by-step approach for building the Pilot Information System. It is recommended that this proposal be reviewed, improved, and implemented.

- **Developing a Village Level Data Collection System**

A team consisting of the pilot NGOs, the SRP, the PGRN, and the CAP should develop survey forms and procedures, and the necessary methods to conduct village-level surveys of poverty and natural resource indicators.

- **Improving Data Collection Methods**

Data collection in GEF sites, Terroires, Census tract maps, and for other purposes requires precise base maps. Most of the 1:200,000 IGN and IGNN sheets are either no longer available or are obsolete. Only 20 sheets of the 190 covering Niger have been updated and exist in a digital format. A series of digital base maps at 1:200,000 (TOP, *Niger Topographic Map Series (Soviet Military)* from Omni Resources (www.omnimap.com/catalog/int/nig-topo.htm). Map series published by Soviet military, 1977-1988) could be used as base maps for this purpose. It is recommended

that the electronic version of these maps be purchased in support of SRP and CAP activities and for the creation of CAP databases.

○ **Work with Other Data Collection Groups**

To ensure effective use of available information, it is recommended that the CAP Pilot Project work with other data collection groups, such as SIGNER, the Ministry of Education, the Ministry of Health, the Ministry of Agriculture, among others.

○ **Integrate Available Data from all Sources**

The CAP Pilot Information System should include data from as many sources as technically possible. These sources should search for and use international databases and information through the inter-operability network (OpenGIS<www.opengis.org) as well as data from national NGOs and sources of legacy data, including oral tradition.

○ **Support Capacity Building**

The Donors should focus on capacity building at all levels. Seminars and training updates in Data Management, Information Transmission, GIS, Poverty Mapping, Spatial Data Analysis and Information Technology among others could be very useful and could be provided by local consultants.

○ **Work with DSRP, Census and DSN to Design Workshops at the Regional and Local Level**

The success of the recent workshop hosted by the DSRP is clear evidence of the effectiveness of such an approach. It is therefore recommended that the CAP work closely with the Institutions cited above, to promote the SRP and CAP Poverty Reduction approach.

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UNEP GRID: <http://www.grida.no/prog/global/cgiar/awpack/poverty.htm>

UNEP: <http://www.unep.ch/>

CIAT-World Bank-UNEP Environmental and Sustainability Indicators:

<http://www.ciat.cgiar.org/indicators/index.htm>

Green Mountain Institute: <http://www.gmied.org/irguide.html>

USGS: http://edcintl.cr.usgs.gov/adds/adds.html#adds_data_anchor

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Land and Water Knowledge Management Node: <http://www.ciesin.org/lw-kmn/>

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<http://www.grida.no/eis-ssa/yvespetr/eissa01.htm>

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