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des méthodes pour
l'innovation scientifique
Cirad-amis

Programme Agronomie

**COLLABORATIVE PROGRAM ON THE
PROMOTION OF THE INFORMATION SYSTEM
APPLICATION AT HVIP, KRIP AND NAERLS**

Trip report 02/07/2002 to 12/07/2002

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Abbreviations

GIS-----	Geographic Information System
HJRBDA-----	Hadejia Jama'are River Basin Development Authority, Kano
HVIP-----	Hadejia Valley Irrigation Project, Hadejia
IS-----	Information System
KRIP-----	Kano River Irrigation Project
NAERLS-----	National Agricultural Extension and Research Liaison Service, Zaria
RECTAS-----	Regional Center for Training in Aerospace Surveys (Ife University)
WUA-----	Water Users Association

1. INTRODUCTION

HVIP Project

The Hadejia Valley Irrigation Project is the second largest irrigation scheme under the responsibility of the Hadejia Jama'are River Basin Authority (HJRBDA). A total of 12.500 ha are planned under this scheme, but so far only 2.150 ha have been developed. In addition, farmers are growing an estimated 1.000 ha of irrigated crops outside of the command area, by taking water directly from the main canal of the project.

A number of problems related to irrigated agriculture in the Hadejia Valley Irrigation Project have determined the formulation of a collaborative intervention by the National Agricultural Extension and Research Liaison Service, Zaria and CIRAD to promote farmers' participation in irrigation system management by developing and strengthening Water Users Associations (WUA) and by supporting the reorientation of the management of the agency (Hadejia Valley Irrigation Project – HVIP agency). This agency is under the responsibility of HJRBDA, which is one of the partners of the collaborative programme. HVIP is seen as a case study, which results should be applicable to other irrigation schemes of the authority.

An Information System (IS), ACCESS database and MapInfo GIS, has been developed and a seasonal performance report has been produced by the agency, using this information system. The low cropping ratios in the dry season have thus been quantified and the scheme management now considers this as a key issue.

The irrigation agency staff and farmers have been involved in a number of training sessions on operation and maintenance, crop production, post-harvest handling, marketing, etc. A positive point is the transfer of the IS to the agency staff. Four trainees have acquired the capacity of using the IS.

KRIP project

With a total planned area of 22 000 Ha out of which 15 000 Ha have been fully developed and put under use, KRIP is the largest irrigation scheme under the HJRBDA.

Having an already existing IS for HVIP prototyped in France and developed in HVP, it was decided that it could be applied to the area of Kano River Irrigation Project in order to assess the project's performances. Therefore, KRIP Information System has been prototyped based on the existing HVIP Information System with the little available data during the training at RECTAS. The KRIP IS will among other things, contain a soil and water management module to address the salinity and soil fertility problems of the project site.

As the HVIP IS, the KRIP IS comprises two main components as a database and a geographic information system.

A huge amount of data field collection already exists. These data, in complement of spatial information (digitised maps...), was entered in the data base created with ACCESS software. The data base is categorised for entering, storing analysing and printing information into different domains concerning irrigation scheme. These domains are :

- Agriculture,
- Maintenance,
- Operation
- Services,
- Parameters.

NAERLS Project

The NAERLS institute is at the center of agricultural information dissemination in Nigeria, it is the link between the Agricultural Research Institute and the farmers through the Agricultural Research Programmes (ADP) in the various states of the Nigerian federation. The management of NAERLS has identified the need to have a comprehensive database of the agricultural commodities produced in Nigeria. The database is expected to provide detailed information on the production requirements of the commodities, current and potential production levels, production constraints, and markets information among others. The conceptualisation of the database, the database project analysis and staff training on database development and use, have already started.

The NAERLS library already has a functioning database that assists in cataloguing and management of the library information.

At the beginning, the mission is aimed to achieve the following targets (Annex 1) :

- a) Follow up the action plans defined at HVIP, KRIP and NAERLS during my last visit in february 2002,
- b) Participate in the definition of an information system module for the farmers' service centers based on farmers needs and interests for the launching of the FSP project
- c) Finalise arrangement for Mr. Aminu Sulaiman of NAERLS training on SILAT programme in France.

But, the time table already defined by NAERLS had been reviewed due to the date of my return (12th Friday at 9:05 AM). The new time table is described in detail in the following pages.

2. DAILY PROGRAMME ACTIVITIES

Wednesday, 3th July

Arrival at Abuja at 4:00 AM and Trip to Zaria (3 hours).

A session with Guy Faure and the committee of agriculture of NAERLS was done on "qualitative assessment of the farming system in KRIP conducted between 28th to 29th June 2002.

The aim of this study is to identify 10 farmers into 2 categories ie: Small and Big farms and try to analyse the qualitative survey (cf. G. Faure report).

PM

A discussion with G. Faure (CIRAD TERA) was done on the FSP project. Two main points was treated :

- Possibility to implement the PRASAC GIS interface into the FSP project,
- taking part in the FSP project of Geotrop team on different aspect as IS, remote sensing...
- Problem of Sulaiman Aminu arrangement on SILAT training. He does not have sufficient french speaking level. Three possible solutions was to :
 - Found another structure as Agrymet (G. Faure),
 - Try to make an arrangement with other English university (Cranfield University –Silsoe college : MsC in GIS and applied remote sensing) and continue on Phd on the same university,
 - Wait one year more to improve his french speaking by following french training courses with admitted "diploma" for SILAT french mastère.

Thursday, 4th July

AM

A discussion and presentation of Jibrin, Aminu and Amos was done on the action plan on NAERLS Information System (see Annex 2 - Action plan developed for NAERLS during the mission on information system conducted between 28th January to 8th February 2002).

This IS will be based on the national database on agricultural commodities for research and extension in NAERLS. A technical session was done to analyse the structure of the IS.

At the commodities level in the NAERLS project structure, three distinguished parts are defined ie : Crop, Livestock and Others (to define). The data base to be created will be constructed at this level of analyse. So Crops has been defined by eight different domains as cereals, agroforestry, horticulture, roots and tubers, fibre, legumes, oil seeds and tree crops. We attempt to focus the analysis on this last part.

Relevant information (Annex 3 : Information on NAERLS IS organisation, activities and commodities) coming from analysis of farmers' needs and brainstorming are given to me for critics. For each commodity (50 in total), a officer responsible has identified.

As we have only two sessions to do the analysis, we decided to choose one crop (maize) an analyse it in terms of information system data base.

Regarding to the crop analysis, nine sub-sector, or group of information) have been created with information for each of them (see annex 3) :

- Production (Yield, land area...)
- input
- cultural practices
- environmental requirements
- extension
- marketing
- implements
- utilization
- government policy

PM

A brainstorming allowed us to have an analysis of the information included in these sub-sectors. So, the next step was to reorganise them. The following table resume the modifications as the roundup, elimination some redundant data and move some information from a group to another :

Table 1 : Group of information

Production	Input	Cult. Pract.	Env. Req.	Extension	Marketing	Implements	Utilization	Govt. Policy
Description 1 to 5 + 20	23 to 29	Variable Input 23 to 29	Climate 44 to 48 + Altitude		Prices (59;61) + Regional	Fixed Inputs (66 to 76)	77 to 79	80 to 85 ⁽¹⁾
Pest & Diseases pb 6 to 9		30 ; 31 33 = Weed control 34 to 35	Soil (50) + Texture (49) Depth (51)		Location(62; 65) + Grades			
Storage 10 to 16		Pest Mgt 37 to 40			Packaging 21;22;63;64			
Process/plants 17 to 19		40 method (43)						
Packaging 21;22;63;64		41 Labour use (41;42)						
		Fixed inputs (66 to 76)						



To be moved at the 3rd order level :
activities level and not at the
commodities level

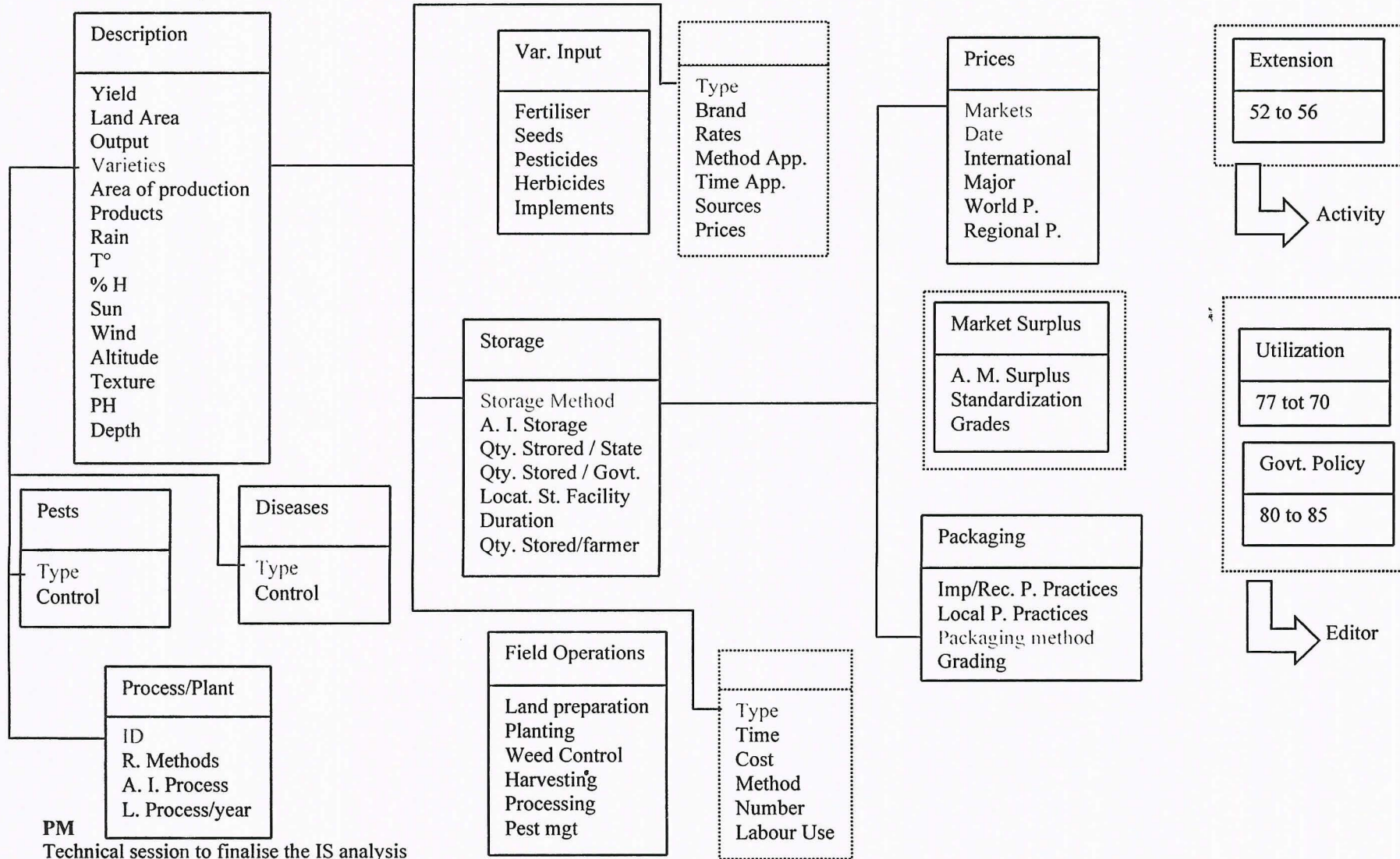
To be linked to an editor
(Web page, Word...)

(1) : Additional class named "Agriculture Extension delivery services"

Red : additional and moved classes



AM
Technical session (continued)



PM
Technical session to finalise the IS analysis

Saturday, 6th July

AM

Trip to HVIP

PM

Arrival at 17h00.

Meeting with HVIP management in order to establish priority in the time table.

Sunday, 7th July

AM : Technical session with project team

Two groups were formed :

Group A :

The purpose was to discuss on field data collection on network survey (level, issues...) and data entry.

People required :

Facilitators ; PM ; Head Of Departments (HODs) ; Jibrin and Sulaiman Aminu.

The session concerned essentially the revision of the field data collection format that have already done by Nicolas Chaussenot.

For the collection fata 3 kinds of survey exists :

- field crop survey (production),
- network survey,
- productivity survey.

The modification concerned only the crop survey, so production and productivity.

We have take into account the facilitators critics on these sheets format and, in accordance to them, we have defined a new version (cf: following tables).

CROP PRODUCTIVITY SURVEY

HMP

SEASON		WET SEASON									
SECTOR		MARINA									
DATE											
Field	Area (Ha)	Crops						Others	Fallow	Total cropped area (Ha)	
		Rice	Inter-cropped	Sorghum	Millet	Maize					
F 2.2	15,00										
F 2.3	12,00										
F 2.4	13,00										
F 2.5	12,00										
F 2.6	12,00										
F 2.7	12,00										

Table 1 : Old Crop Productivity Survey Form

CROP PRODUCTIVITY SURVEY

HVIP

SEASON	WET SEASON
SECTOR	MARINA
DATE	

Yield = X / Area

Field	Area (Ha)	Crops (Ha)										Others	Fallow	Total cropped area (Ha)	
		Rice		Sorghum		Millet		Maize		Inter-cropped					
		Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X	Ha	
F 2.2	15,00														
Farmer 1	Head	5,00	12,00	2	14,00	3,00	23	4	15	0,50	14			0,5	14,50
Farmer 1	Middle	4,00	10,00	2,5	13,00	2,50	20	4	14	1,00	12			1	14,00
Farmer 1	Tail	5,50	11,00	4,5	12,00	2,00	21	2	13	0,50	13	0,5	12		15,00
F 2.3	12,00														
Farmer 1	Head														
Farmer 1	Middle														
Farmer 1	Tail														

Table 2 : Sheet 1 - form for collection data on field (Farmer 1)

CROP PRODUCTIVITY SURVEY

HVIP

SEASON	WET SEASON
SECTOR	MARINA
DATE	

Yield = X / Area

Field	Area (Ha)	Crops (Ha)										Others	Fallow	Total cropped area (Ha)	
		Rice		Sorghum		Millet		Maize		Inter-cropped					
		Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X	Ha	
F 2.2	15,00														
Farmer 2	Head	4,50	12,00	4,5	10,00	2,00	18	2,5	11	1,00	12			0,5	14,50
Farmer 2	Middle	3,00	12,00	4	14,00	3,50	15	1,5	12	1,50	11	1,5	10		15,00
Farmer 2	Tail	3,50	10,00	1,5	13,00	3,00	17	2,5	14	4,00	13			0,5	14,50
F 2.3	12,00														
Farmer 2	Head														
Farmer 2	Middle														
Farmer 2	Tail														

Table 3 : Sheet 2 - form for collection data on field (Farmer 2)

The major problem of the old version was the useless table in the case of several farmers. In fact, for a particular crop and for each part of a bloc, named "head – middle and tail", one, two or three farmers has been visited. This problem as been solved.

As we average the values, we need to have the same number of farmers for each crop. This could be difficult, due to the harvest management. For certain crop, farmers packed their harvest and send it before they finished to cover all their cultivated area. So a methodology was adopted to have data from 2 farmers for all crops.

So two Excel sheets was created for data collection (table 2 and table 3) and a third one (table 3) to calculate automatically the average. The last one shows the values that should be entered in data base through an ACCESS form already existing.

CROP PRODUCTIVITY SURVEY (AVERAGE)										HMP							
SEASON		WET SEASON								Yield = X / Area							
SECTOR		MARINA															
DATE																	
Field	Area (Ha)	Crops (Ha)										Others (Ha)		Fallow Area	Total cropped		
		Rice		Sorghum		Millet		Maize		Inter-cropped		Area	X (Nb Bag)				
F 2.2	15,00	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)	Area	X (Nb Bag)
	Head	4,75	12,00	3,25	12,00	2,50	20,5	3,25	13	0,75	13	0	0	0,5			14,50
	Middle	3,50	11,00	3,25	13,50	3,00	17,5	2,75	13	1,25	11,5	0,75	5	0,5			14,50
	Tail	4,50	10,50	3	12,50	2,50	19	2,25	13,5	2,25	13	0,25	6	0,25			14,75
F 2.3	12,00																
	Head																
	Middle																
	Tail																

Table 4 : Sheet 3 - Automatic calculated form

Figure 1 : on data base : Productivity form entry data

Group B :

The purpose of this session was to discuss with WUAs officers in order to define their needs, interests and source base. These should be used to build base farmer service center.

People required : Kura, S. Z. Aboubakar, Jibrin, coordinators and federated WUA members.

PM

A part of the afternoon was used to finalise the morning work.

Another session was done on Hydraulic module. Two problems were identified and discuss :

- The module already developed and coupled to the data base during my last mission is not completely adapted to the situation where a loss of water can be appeared due to a problem of siltation. This concern only the formula used to calculate de STO discharge. So another formula will be developed to calculate, by difference of discharge at each level of canals and sub-canals, to have a more precise idea of the quantity of water is at the end of the irrigated process.
- As we have developed the STO module on the 2000 office package, a problem of MS-office version cannot allow Imrana to work with it. The decision was taken to upgrade is Office version from 1997 to 2000.

Monday, 8th July

AM

Discussion on marketing module

Required people :

Project manager (PM) ; HODs ; Coordinators ; All facilitators ; mission team ; Representative of WUAs ; federated official WUAs.

PM

Application on the IS on farmers' problems : restitution session

Required people :

Imrana ; facilitators ; mission members ; coordinators ; HODs

Tuesday, 9th July

1. Wrap up meeting with project team

A summary of the activities covered during this mission at HVIP is given. It concerns essentially :

- Hydraulic module of HVIP database
- Marketing module of HVIP database
- Restitution with farmers at Ganuwar-Kuka sector
- Field Data collection and entry
- Farmer service center
- FSP Loan.

As part of the exercise carried out action plan was drawn around each of the activities conducted at HVIP as shown below :

Activity	Action Plan	Responsibility
Hydraulic Module of HVIP database	Installation of Gauges on the irrigation fields. Training of Enumerators for daily data collection. Data entry. Re-structure the hydraulic formula to capture water losses at Main Feeder canals and the FCs. Design separate forms for data collection and data entry of parameters.	HVIP Management HVIP Management Imrana Imrana, Yahaya, NAERLS Imrana.
Marketing Module	Identify WUAs to facilitate data collection. Design simple forms for data collection. Data entry and provision of market information to farmers on weekly basis (latest by Friday). WUAs and HVIP management to meet and finalise issues on marketing module latest by Friday 12 th July 2002. Use of Hausa (for farmers) and English version of market information.	Mallam Bature & HVIP Mgt. Bature & Imrana Bature Bature Bature HVIP Mgt Bature & Imrana.
Field Data Collection	Interview two farmers each at the head middle and tail-end of blocks Use the new developed forms for data collection and entry. Organize in-house training on field data collection and entry into the computer. PM is expected to formally inform the coordinator on the need for this.	Enumerators Enumerator HVIP Mgt
Restitution at Ganuwar- Kuka sector	Update the digitized map of the Ganuwar-kuka sector based on the suggestions from farmers latest by 31 st July, 2002. Verification of farmers names and land holding in view of the on coming FSP project Presentation of new developed maps to farmers. Consider the possibility of changing the nomenclature of sectors name in the HVIP project.	Imrana HVIP Mgt HVIP Mgt and Restitution team. HVIP Mgt and Restitution team. HVIP Mgt and Restitution team
Farmer service centre	Draw strategies for solving existing problems at Adaha sector. Draw strategies to develop revenue base (by collecting farming annual dues, registration fees etc) and solve the problems at all WUA, levels.	Mr. Shaaibu, Federal WUAs, facilitators. HVIP Mgt and WUAs

2. Trip to Kano at noon

Wednesday, 10th July

Meeting with KRIP management

Technical session with KRIP staff

Imrana has developed a database on access software but he didn't take enough time on the analysis part of the data base structure. The consequence was to have an unexploitable data base where tables define data at different levels of perception.

A confusion in the collected field parameters shows that the IS has to be reviewed at the beginning. I proposed that they follow the steps already described in the report of my last mission (February 2002).

So the imperative was to define an action plan for KRIP. It is defined by the following points :

- Need for NAERLS to produce a manual on the procedures for Data Base formation,
- Conduct project analysis to define very well the KRIP database by the end of July 2002 under the leadership of the coordinator and team leader for Information System,
- Consider the use of the collaborative relationship with RECTAS and send Yusuf Ubale Ajmgi to go to RECTAS and digitize some of the required sectors/Irrigation Layout of KRIP.

Travel to Zaria at noon.

Thursday, 11th July

Wrap up team at NAERLS

Definition of Action Plan for NAERLS

- Develop the initiate version of the NAERLS database structure,
- Define and fine-tune the modules and components of the structure,
- Identify modules with data on ground,
- Define and identify modules for future data collection,
- Define the mode and channels for data collection,
- Initiate actual data collection,
- Define mode of utilization of the database in the Institute,
- Define administrative structure and arrangement for database management

Courtesy call on NAERLS management

Visit to the NAERLS director :

3 points of my mission are summed up :

- Follow up the action plan defined at HVIP, KRIP and NAERLS,
- National data base on agricultural commodities for research and extension in NAERLS
- Arrangement for M. Aminu Sulaiman of NAERLS training on SILAT programme in France.

Web page for the data base on library information with Jibrin

Travel to Abuja

Friday, 12th July

Travel to France

3. CONCLUSIONS

The following lines resume the main subjects discussed during my trip mission to Nigeria. Beyond the technical problems on data base, some questions raise problems which need reflection and decision. These have been done with the help of NAERLS team (see action plan in previous pages).

NAERLS, KRIP and HVIP projects

Until my last mission in February, good progress can be noticed. Problems on data base as tables redundancies were solved. So, efforts have been done on the analysis of the data base structure especially on the HVIP and NAERLS project.

More precisely, the national agricultural data base (NAERLS) has been analyse with the same methodology used for HVIP project. A brainstorming with NAERLS team was so efficiency that a part of the data base structure was draft in 2 days. Some special cases as "extension" and "utilization" group of information have to be studied in the next steps of the analyse (higher level of analyse). But the most important steps were defined, described and well understood. On the HVIP project, field data collection and entry data has started and other modules has been developed. This shows the dynamism of the project team.

However, due to an incomplete data base analysis, KRIP IS project is behind schedule. As the NAERLS team has well understood the conception of a data base, a help from them could be given to the HVIP team to implement the conception of their data base.

Moreover, the most important thing, in my point of view, is that farmers and data base users has adopted with enthusiasm the concept of the "decision-making" through data base and GIS maps. The purpose of this is to have an autonomous project...

Aminu Sulaiman

M. A. Sulaiman showed his intention of doing the "Mastère" SILAT in France in order to have access to a french doctorate. The courses of this french "mastère" is focus on GIS (Geographical Information System) and Remote Sensing.

Unfortunately the head of the SILAT estimated that the french speaking level of Aminu is inadequate.

Nevertheless, a possibility was presented to the director. Aminu can use the next year to improve his level through training session in Nigeria and France (Royan). This to access easily to the SILAT "mastère" next year. The formation center is called CAREL and the coordinates are :

Université de Poitiers Ville de Royan

48 Boulevard Franck Lamy

B. P. 219 c

17205 ROYAN CEDEX

Tél: (33) 05.46.39.50.00

E-mail: fle@carel.org

Internet: <http://www.carel.org>

Another solution can be presented by M. G. Faure. It concerns the possibility to do a course with Agrimet (Mali). More details will be given by him at his vacancy return.

FSP project

After my mission, many discussions with CIRAD agents (G.Faure, M. Kuper, A. Begue, F. Maraoux) were done in Montpellier (France) to write down a proposal in which GEOTROP team has interests.

Regard to the project, the GEOTROP team laboratory, and consequently the CIRAD institute, is interested in some points (flooded zones for fadama plantation, cotton plantation...). A proposal will be written and sent as soon as possible to the project head.

ANNEX 1 : TERMS OF REFERENCE FOR MR. MARC DESPINOY'S COUNTRY MISSION TO NIGERIA (3RD TO 12TH JULY 2002)

The mission is aimed to achieve the following targets:

- Followup on the action plans defined at HVIP, KRIP and NAERLS during his last visit,
- Participate in the definition of an information system module for the farmers' servicecenters based on farmers needs and interests for the launching of the FSP project,
- Finalise arrangement for Mr. Aminu Sulaiman of NAERLS training on SILAT programme in France.

Each of these targets is detailed as follows:

A. Followup on the action plans defined at HVIP, KRIP and NAERLS during his last visit

Review of progress of implementation of information system in HVIP and KRIP:

- Marketing module
- Hydraulic module
- Linking GIS and database
- Field data collection and entry, and
- Application

Assist in developing the national database on agricultural commodities for research and extension in NAERLS

B. Participate in the definition of an information system module for the farmers' servicecenters based on farmers needs and interests for the launching of the FSP project

i. Assist in defining the configuration and application of the information system in the farmers' service centers in the new FSP project :

Assist in defining the needs, interests and resource base of the federated WUAs innHVIP,

Establish the objectives and types of applications of the information system,

Propose a configuration of the information system,

Define the need for training and support to enable the beneficiaries manage the information system,

Test the genericity of the information system in the groundnut-base farming system

ii. How to involve the farmers in the formulation, generation, application and management of an information system for decision making on agricultural and development projects using their existing practices and facilities.

C) Finalise arrangement for Mr. Aminu Sulaiman of NAERLS training on SILAT programme in France.

Interaction with all partners including the French Embassy in Nigeria on the possibility of supporting the identified NAERLS staff toundergo a one year training on GIS Database, and remote sensing technique leading to Ph D programme. This would provide the opportunity of making local expertise available to support the development of farmers service centers in the new FSP project.

The proposed itinerary of the mission is provided below (3rd to 12th July 2002)

Dates	Activity	Responsible
3 rd Wednesday	Arrival from France at Abuja Travel to Zaria and meeting with PT	EFIN ¹ NAERLS
4 th Thursday	Meeting with NAERLS management Technical session with project team	NAERLS NAERLS
5 th Friday	Technical session with project team Travel to HVIP	NAERLS NAERLS
6 th Saturday	Meeting with HVIP management Technical session with project team	HJRBDA/HVIP HJRBDA/HVIP
7 th Sunday	Technical session with project team	HJRBDA/HVIP
8 th Monday	Meeting with federated WUA for definition of needs etc Meeting with HVIP field staff and management	HJRBDA/HVIP HJRBDA/HVIP
9 th Tuesday	Technical session with project team Wrap up meeting with project team Travel to Kano	HJRBDA/HVIP HJRBDA/HVIP NAERLS
10 th Wednesday	Meeting with KRIP management Technical session with project team Travel to Zaria	HJRBDA/KRIP HJRBDA/KRIP NAERLS
11 th Thursday	Wrap up project team at NAERLS Courtesy call on NAERLS Management	NAERLS NAERLS
12 th Friday	Travel to Abuja Travel to France	NAERLS FEIN

¹ French Embassy in Nigeria

ANNEX 2 : IMPLEMENTATION OF THE ACTION PLAN DEVELOPED FOR NAERLS ON INFORMATION SYSTEM

A. Action Plan Developed For NAERLS During The Mission On Information System Conducted Between 28th January To 8th February 2002

1. Initiate action on databank development.
2. Staff training on information system.
3. Intervention on library information system.
4. Define requirements for establishment of information system.

B. Staff Training On Information System.

As part of the efforts of NAERLS to implement the action plan developed, trainings were conducted to build the capacity of staff on information system. The two trainings conducted are as follows:

1. Database Management conducted from 25th February to 14th March 2002. Both academic and technical staff of NAERLS were grouped and the training conducted in batches. The areas covered during the training includes:

- Building a database
- Data types
- Data entry and editing
- Data sheet display
- Sorting and searching in database
- Forms and Report
- Database wizard

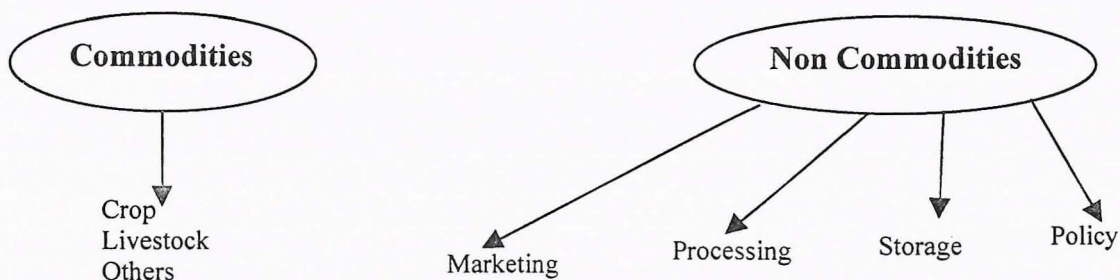
2. Information System conducted between 25th to 28th March, 2002. Staff were selected from those who attended the first training on database management. The areas covered during this training includes:

- Database concepts, development and Management
- Geographic information system concepts and Management
- Thematic Mapping

¹Report 2: Presented during the country mission of Marc Despinoy On Information System conducted between 3rd to 12th of July 2002. By Aminu Suleimen

ANNEX 3 : NATIONAL DATA BASE ON AGRICULTURAL COMMODITIES (NAERLS)

- **MANDATE**
- **ORGANISATION**
 - ❖ *Diagram*
 - ❖ *Disciplines*
 - ❖ *Staff*
 - Administrative
 - Academic
 - Technical
 - Support
- **ACTIVITIES**
 - ❖ *Research*
 - ❖ *Extension*
 - Commodities
 - Non-Commodities
 - ❖ *Media*



CROP

Cereals
 Agroforestry
 Horticulture
 Roots & Tubers
 Fibre
 Legumes
 Oil Seeds
 Tree crops

LIVESTOCK

Large Ruminants
 Small Ruminants
 Fish
 Monogastric

MEDIA

Printing Technology
 Radio & TV Production Technology
 Agric. Ext. Publications

BRAIN STORMING ON COMPONENTS OF NAERLS DATABASE

1.0 VARIABLES

1.1 CROP SUB-SECTOR

A. *Production*

1. Yield
2. Land Area (devoted to crop production)
3. Output
4. Varieties
5. Areas of production by state
6. Pest
7. Diseases
8. Control measures of pest
9. Control of measures Diseases
10. Available improved storage facilities by state and fed Govt.
11. Qty stored by state per year
12. Qty stored by federal Government by year
13. Location of storage facilities
14. Local storage methods by state
15. Duration of storage by farmer, state and Federal Government
16. Qty stored by farmers (large medium and small scale).
17. Recommended processing methods
18. Available improved processing plants by state.
19. Local processing in a year (season) per state
20. Products
21. Improved /Recc. Packaging practice
22. Local (farmer) Packaging practices

B. *Input (Fert./Seed/Chemical)*

23. Brand
24. Types
25. Rates
26. Methods of application
27. Time of application
28. Sources
29. Prices

C. *Cultural Practices*

30. Land preparation
31. Planting
32. Fertilizer Application
33. Weeding
34. Harvesting
35. Processing
36. Storage
37. Pest Management
38. Type
39. Time
40. Method
41. Labour requirements
42. Number (eg Planting)
43. Cost by method

D. Environmental Requirements

Climate

- 44. Rainfall
- 45. Temperature
- 46. Humidity
- 47. Sunshine
- 48. Wind speed

Soil

- 49. Type
- 50. PH
- 51. Water requirements

E. Extension

- 52. Sources of information
- 53. Source of improved practices
- 54. Adoption rates
- 55. Adoption level
- 56. Factors that influenced adoption by state
- 57. Problems of adoption

F. Marketing

- 58. Major markets
- 59. Local prices (monthly)
- 60. Major International markets
- 61. World prices
- 62. Available marketable surplus
- 63. Packaging
- 64. Grading
- 65. Standardization

G. Implements

- 66. Brand
- 67. Type
- 68. Name of implement
- 69. Prices
- 70. Uses
- 71. Problem with the implement
- 72. Source
- 73. Source of spare parts
- 74. Cost of spare parts
- 75. Availability
- 76. Requirements for use of implement

H. Utilization

- 77. Product
- 78. Usage
- 79. Processing flow chart of product

I. Government Policy

- 80. Inputs (including farm Implements)
- 81. Marketing

82. Land tenure
83. Credit
84. Utilization

1.2 LIVESTOCK SUB-SECTOR

A. *Production*

1. Breeds
2. Population by state
3. Distribution by ecological Zones
4. Growth rate
5. Reproductive characteristics
6. Yield
7. Mortality rate
8. Birth rate.

B. *Management Practices*

9. Management & Housing System
10. Feeding System
11. Types of feed ingredients
12. Seasonal Availability of feeds
13. Source of feed
14. Cost of feed
15. Sources of water
16. Water requirement
17. Cost of water
18. Types of housing
19. Space requirements
20. Cost of housing
21. Cost of house maintenance
22. Other practices
23. Facilities/appliances

C. *Health management*

24. Parasite
25. Disease
26. Parasite control
27. Disease control
28. Vaccination
29. Sanitation/hygiene
30. Facilities/appliances

D. *Utilization*

31. Products
32. By-products
33. Processing methods
34. By-products disposal methods usage
35. Usage

E. *Marketing*

36. Major markets by state
37. Local prices
38. Major International markets
39. Packaging

Ecology
(Adoptability)

I.3 PRINTING TECHNOLOGY SUB-SECTION

A. *General Information*

1. Available technologies (types)
2. Distribution/Location
3. Clients
4. Location marketers
5. Prices
6. Durability
7. Availability of spare parts
8. Govt. policy
9. Output
10. Advantage
11. Problems/shortcoming
12. Basic maintenance services
13. Operation
14. Market potential
15. Adaptability

Level of awareness