

REVIEW OF e-SERVICES TO CITIZENS PROJECT OF MINFA

April, 2009

KNOWLEDGE FOR LIFE

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1. Executive Summary:

The software, hardware infrastructure and network at MINFA were reviewed by CABI-SA at MINFA's request. The request was made keeping in mind CABI's 100 plus years experience of the Agriculture sector and its ICT expertise in Databases (various CABI Compendia, DIFID's R4D website, CABI own webportal) and e-learning.

The review was undertaken in the month of March and was of one week duration. During the review the facilities at MINFA were visited and detailed meetings were held with:

- a) Dr. Aslam Gill Coordinator for the E-Services to citizens project
- b) Mr. Tahir Mahmood Butt Acting Project Director
- c) Mr. M Tauseef Database Administrator
- d) Mr. Kashif Khursheed Network Admin

The e-Service to citizens' project initially envisaged a budget of over 155 Million Pak rupees. In the four years since its approval, it is expected that almost 80 Million Pak rupees would have been spent. The rest has been surrendered as either the relevant jobs could not be done or savings were made.

The review has indicated serious shortcomings in the systems. In its current form it will not be possible to implement the system. The system needs to be re-engineered. It is therefore recommended that a full detailed review of the system be made with MINFA, CABI-SA and CABI-UK as stake holders. For this, it is proposed that a PC-2 be written, the result of the feasibility report will then be used to get funding for the project from International donors interested in contributing towards improving governance.

The investment made into the infrastructure needs to be capitalized by ensuring the right staffing is available. Further it is necessary that a formal help desk and training plan be implemented in order to ensure the MINFA IT users reap the maximum benefit of the investment.

2. Systems Review of e-Services to Citizens Phase-I:

The software, hardware infrastructure and network at MINFA were reviewed by CABI-SA at MINFA's request. The review was undertaken in the month of March and was of one week duration. During the review the facilities at MINFA were visited and detailed meetings were held with:

- a) Dr. Aslam Gill Coordinator for the E-Services to citizens project
- b) Mr. Tahir Mahmood Butt Acting Project Director
- c) Mr. M Tauseef Database Administrator
- d) Mr. Kashif Khursheed Network Admin

2.1. Financial Stats:

- Approved Date: 23rd Feb 2005
- Project End Date: 23rd June 2008
- Project Extension: 30th June 2009
- Project Cost: Rs.155.332 Million
- Expenditure to-date:
 - FY 2004-05 Rs.01.777 Mil
 - FY 2005-06 Rs.18.981 Mil
 - FY 2006-07 Rs.44.322 Mil
 - FY 2007-08 Rs.07. 709Mil
- Planned Expenditure for FY 2008-09: Rs.26.463 Mil

Total Expenditure till FY 2008-09 Rs. 99.25 Mil
Unspent (Saving + Surrendered) Rs. 56.08 Mil

Total Expected Expenditure till FY 2008-9 Rs.80.00 Mil
Exp Unspent Budget Rs.75.33 Mil

2.2 Overview of the Various Applications/activities under Phase I

The overall impression from the systems is that more thought has to go into how these systems will be implemented for the use of MINFA, attached departments and the Citizens. At the moment, the systems, are so cumbersome and complex that these can be used by experts with an IT background or by people who have been given expert level training. The following table gives the summary status of the various activities undertaken under phase I of the project.

Table: 1 Summary Status of the operations undertaken under Phase-I of E-Services to Citizens.

Job Item	Status/Issues	Responsible	User
Provision of Basic IT Infrastructure	Completed/ No HW maintenance plan or equipment available	Kashif Khursheed	MINFA
Internal Office Automation and Communication	E-Office Replication Project	E-Office Replication PM (Saif-U-Rehman)	MINFA
Information Exchange Gateway	E-Office Replication Project	Ditto	
File / Document Management, Workflow and Content Management	E-Office Replication Project	Ditto	
Enterprise Resource Planning	E-Office Replication Project	Ditto	MINFA: HR & Admin
Food and Agriculture Information Repository	<i>Signed off. /Final roll out to be done by Nov 2009. Pl see Annex.1</i>	M. Tauseef (DB Administrator)	MINFA
Real Time Market Quotes for Agricultural Commodities	Pending (Expected b4June 2009) Data from ALMA -> FALIR-	PD	Citizens

Digital Display Boards at 11 Markets	>Display Boards/ LIVE DATA required from ALMA		
Remote Sensing and Digital Image Processing Systems	On-Going / <i>Pl see Annex.2</i>	Tahir Mahmood (RS expert, acting PD)	MINFA, Citizens (will be on the in future, only historical data)
Geographical Information System (GIS)	Completed connected with FAIR crop/district/year etc./ <i>Can be used only by the GIS expert. Suggest 'Power User' groups be created within the Users so the application can actually be used</i>	Only GIS Expert.	GIS expert will produce reports for MINFA. Data for Citizens will be on the web in future, only historical data will be available there
Data Warehouse, OLAP, and Decision Support System	Completed (OLAP DB has been completed GIS reports are generated via DSS)/ <i>DW needs further assessment at the moment enough data is not available.</i>	M.Tauseef (Data Base Admin)	Reports will be produced by the DBA for MINFA Higher Management
Information Dissemination Public Portal	Pending (IVR)/ <i>Suggest and Information Resource Centre instead of a Call Center</i>	PD	Citizens via a call centre
Digitizing Existing Paper Based Data	Partially Completed (E-office replication). 3 yrs data from the Economic Wing MINFA, Statistical data of Pakistan has been entered using the e-office staff./ <i>How will the data be entered in future</i>	E-Office Replication PM (Saif-U-Rehman), Attached MINFA Departments	MINFA, Citizens (FAIR)

Data Center and Network Management	FGDC (Federal Govt Data Centre) Project. LAN done, main data centre off location from MINFA. A single data centre for all ministries.	Kashif Khursheed	MINFA
Training	Partially Completed (Vendor has given training to the EGD staff (workshop: FALIR and GIS) and to the CCRI remote sensing and GPS usage and its data migration./ <i>No user level training plan.</i>	PD	IT Department, MINFA
Video Conferencing between MINFA and 11 other locations	Pending/ Suggestion: the bandwidth available is very low for this. In order to do VC each location must have atleast 1 MB at each location. Bandwidth is expensive from NTC. The equipment suggested is extremely expensive to be put at all locations specially if it not to be used frequently. Better to check cheaper solutions like: Renting VC facilities from vendors (approx 1800/hr) at users location, using SKYPE temporarily to check the bandwidth issues etc.	PD	Higher Management of MINFA and of the 11 attached departments.

Help Desk Facility	Pending	PD	MINFA users
Citizen Services	Pending/ <i>Suggest an information resource center and an Identification of services req by citizens thru a PC-2</i>	PD	Citizens

3 Recommendations:

In view of above it is recommended that the a PC-I be written targeting the smooth running of th MINFA Systems (LAN/WAN, Hardware Infrastructure maintenance and upgrade, User Training). The FALIR and allied software be re-engineered. These are further detailed below:

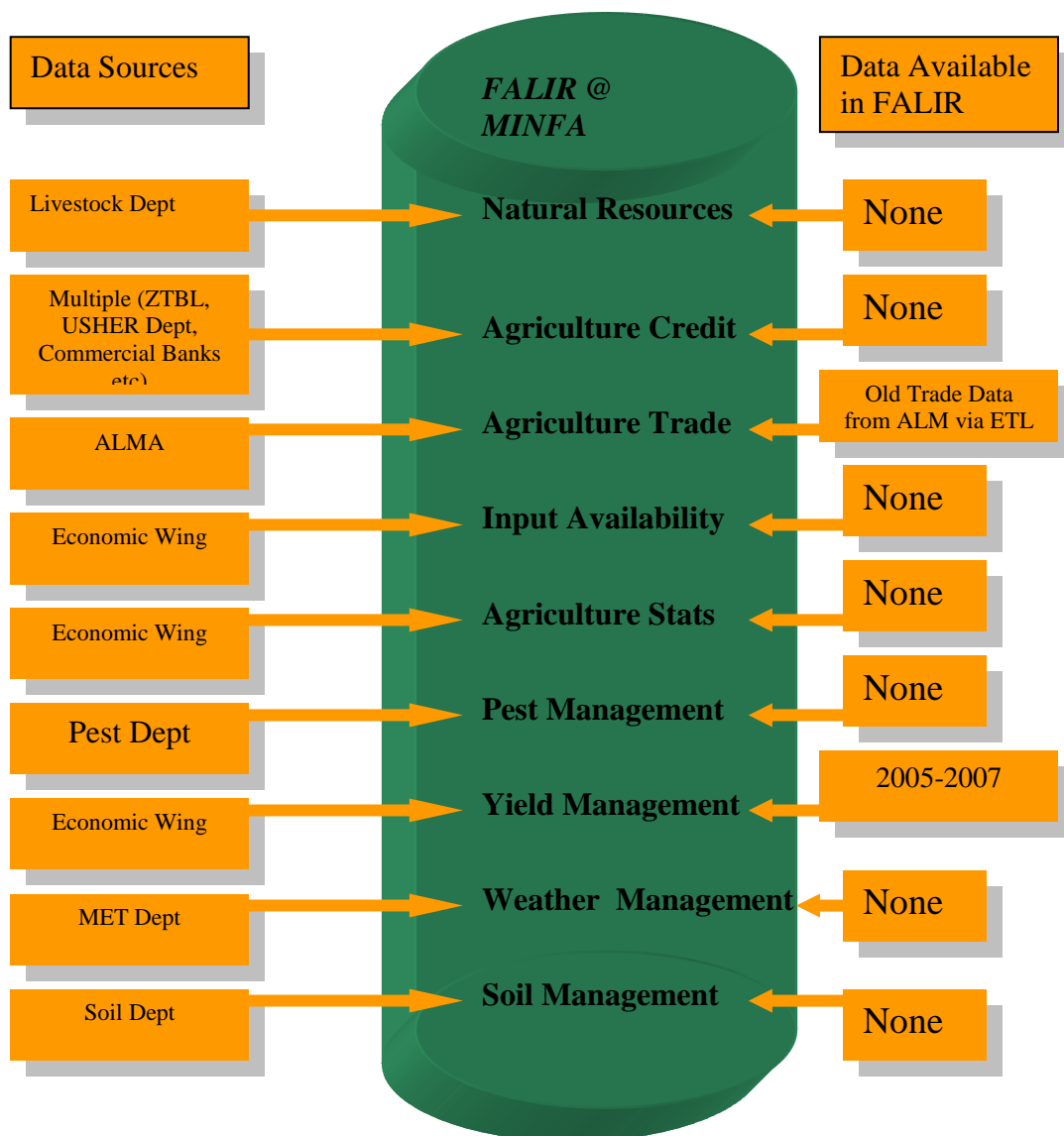
- a) Improvement of MINFA Systems be carried out via PC-I. Systems to include, upgradation/maintenance of hardware infrastructure, User training (help desk, formal training for 250 people), Completion of Remote Sensing/Digital Image Processing and GIS for yield forecasting of the pilot area, upgradation and maintenance of MINFA webportal.
- b) With the following objectives:
 - i) Model for South Asia: Info exchange system that can be replicated in South Asia
 - ii) Centre of Excellence in Knowledge Management and dissemination in the Agriculture Sector
 - iii) MINFA and allied departments enabled and empowered to use the system.
 - iv) Empowerment of the Citizens interested in E-Services in the Agriculture Sector.

A Proper assessment into the use of FALIR (A stakeholder analysis leading to development of methods for data acquisition from various departments, encourage usage of FALIR by associated departments, user input forms, report generation modules) and allied software (Citizen e-Services, Remote Sensing/GIS, Information Resource Centre, Rural Knowledge Centres etc.) be made via a PC-2 with MINFA, CABI-SA and CABI-UK as stake holders. ***The outputs of thePC-2 will be used to get funding from International Donors to re-engineer the existing systems to state of the art Agri information systems.***

Annex 1.

Status: FALIR (Food, Agriculture and Livestock Information Repository) now FAIR:

FALIR was an ambitious undertaking to make all data relevant to Agriculture sector available at one point. The following fig. represents the databases in FALIR the sources of that data. The availability of data in any of the databases is an indication of the success so far in getting that data from those sources:



Input:

The FALIR can be an operational system only if the data base has been properly populated and data is updated regularly. This is essential as some data in FALIR eg. Market information is of value to the citizens only if it is current. The above figure clearly indicates the attached departments of MINFA and others such as ZTBL and commercial banks are required to enter data into the various data bases of FALIR.

This is not happening even though apparently a lot of paper has moved between the MINFA and the attached departments. The data entry is also not taking place as issues like: how this data will be entered and who will enter this data, would the credit for the data be given to the respective departments and would this mean extra work for the departments etc. still need to be resolved.

Another issue that might be causing problems in data acquisition is that use of a central repository of information would bring about a change in the working of the MINFA and its allied attached departments. Some of the functions of these departments will not require as much manpower as before, this may also entail some loss of authority and power by the concerned departments.

In any case this issue is extremely important as without data FALIR has no use at all.

On the technical front, there are quite a few problems with FALIR starting from its current outlook and design. It is an extremely complex and non-user friendly system thus making it more difficult to implement to a multi-department data-entry community. From data entry to report generation the forms are very demanding of the user, requiring a lot of typing. The data entry checks have not been implemented properly. For the report generation the query mechanism is also very cumbersome and does not follow the usual modern practices in building a user defined query. Furthermore there are glitches like e.g. it is actually possible to print a report on wheat production in bales!

Outputs:

Even though FALIR is expected to contain a lot of data, there is only one report coming out of it i.e. the Agriculture Statistics Book originally produced by the Economic wing of MINFA. There is no option for the user to create reports dynamically as per their requirements. The only way a report as per user requirements can be generated is by actually asking the data base administrator to do so. This obviously is not a feasible solution for MINFA or even for its attached departments or for the Citizens.

The following table further illustrates some of the technical problems in FALIR, without resolving which it would not be possible to implement it.

Sr No	Description of problems/bugs	<u>Criticality (1-5)</u> 5 for highly critical 1 for less critical
1.	It has been observed in majority of the forms that Name/description filed accepts duplicate value eg; city name, commodity name, fertilizer name, livestock commodity, etc	5

2.	All those Forms / Reports which contains commodity / Product Name & unit of measurement (e.g. Area & Production of crops and Wheat) if we select any product then unit of measurement should be filtered automatically. For example if we select milk then unit of measurement should be liter, '000' liter etc or if we select cotton the unit of measurement should be 'Bales' or '000 Bales'. Irrelevant units should be filtered. This feature is highly required keeping in view the ground realities at end user level.	5
3.	Search Criteria in each form is very complex keeping in view the end user.	4
4.	Following error message is displayed in case of any type of problem: "Critical Error Occurred. Contact your system Administrator for details" This test of this error message should be meaningful and clearly identify the cause of problem.	5
5.	Alphanumeric checks have not been properly implemented, especially if we enter space/spaces and try to save the record, it is saved.	5
6.	Forms which contains Commodity Field e.g. Wheat, Cotton etc and next field is its unit, the unit will be selected automatically as some of the users may not know the exact unit of the	
7.	"AddDate" & "ModDate" columns in majority of tables are of "varchar2" data type. It should be "Date" data type.	4
8.	When we delete a master record whose child records are present then application neither displays error message nor deletes the record. It should display proper message that record could not be deleted due to the presence of child record.	4
9.	Standard naming convention for fields name has not been followed in the design of database.	2
10.	There are some unnecessary files/folder containing data files, control files and log files in database folder. These can not be deleted at out end because we do not know the reason of their presence.	2

Annex-2

Status of the Remote Sensing and Digital Image Processing Systems

Satellite image is analysed to forecast yield. Currently a pilot area of 250KM has been selected in Lodhran/Multan for the Satellite images.

Currently the image is verified through ground truthing, i.e. any anomalies in the satellite image are identified and then investigated by actually visiting the ground location. The survey spots for ground truthing are selected from the satellite image on the basis of certain pre-defined criteria (common tone, extraordinary spectrum signatures etc.).

The data has so far not been compared with the data collected manually for the following reasons:

- a) Usually the manually collected crop data is available for a district. The pilot area of 250 sq KM though spread over two districts (Lodhran and Multan) does not cover any one district [Lodhran or Multan] completely.
- b) The manual crop yield data has been provided to the Remote Sensing people for the province only so far. Therefore it cannot be used to compare the results with the satellite image.
- c) The satellite images for an entire district are not purchased as the cost of the satellite images for an entire district is very high (per sq km cost is: USD 28 from the satellite *Quick Bird* (0.6 meter ground resolution, 4 band) and PKR 354000/image (3600 sq km) from *SPOT* (from France of 2.5 meter ground resolution, 4 band). Both the images are available via SUPARCO in Pak rupees. Images from ASTER (Japanese Satellite with 15m ground resolution, 14band from USD 100/image(3,600 sq KM.)) are not used as there is foreign currency is not available in the current PC-1

There can be errors in the forecast made via the satellite images due to intercropping/multi-cropping, weather conditions on the day the image was captured. Therefore these need to be compared with some real data to establish the % authenticity of the results and also to build historical data of crop texture.

SUPARCO is already running a crop monitoring project (Phase-II has not been launched as yet). The results are provided at the district level. The data provided by SUPARCO so far has not been compared with the district level data which was collected manually as Economic wing is supposed to provide this data.