

ICT-KM Second Level Connectivity Project

Improving Communications and Access to Internet Resources for CGIAR Regional and Country Offices

1st April 2006 to 31st March 2007

A Project of the ICT-KM Program

Annual Report

EXECUTIVE SUMMARY

In the past year, the project has made notable progress in improvement of connectivity in the regional offices, though at a slower and cheaper rate than expected. Major activities included completion of site surveys in the sites that were pending and implementation in many sites. However, the project faced new challenges that led to delays in implementation at some African sites.

The project has now completed the installation of improved internet connectivity in 10 locations and has committed funds for installations at 2 more sites. A further 4 sites have improved internet connectivity following advice from the project but without requesting funds from the project. Seventeen (17) sites from the original priority list no longer require financial assistance to upgrade their connectivity. These offices were no longer a priority or have been closed by their Centre. As a result of these changes some centres requested to change their priority sites and in 3 cases these requests were accepted.

The audit of the CGIAR offices, carried out at the beginning of the project has been updated, using the information obtained from the site surveys. This has been used to update and add to the information on the map that is available on Cgxchange.

The ICT Briefcase development is in its final stages; and we are relying on centres to provide information for populating the briefcase.

The design and implementation of the project has undergone various changes owing to the volatile nature of regional offices. The decision to obtain local individual solutions at each location as opposed to a single tender for satellite connection for the SSA region has proved successful and more locations have been upgraded in the past year. In SSA region, licensing issues have been the biggest barrier to satellite implementation. Negotiating agreements between Centres with offices in the same location or between Centres and hosting NARS partners to share an installation has been another major barrier to implementation.

There are many lessons learnt from the installations already carried out; and these are invaluable to all continuing and future implementations.

PROJECT PERFORMANCE

Site Surveys and Pre-implementation process

Following the prioritisation of 42 sites by the Centres the next stage was to carry out site surveys at each location and based on the site survey recommendation many Centres were required to complete one or more of the following tasks before the internet installation could begin:

- improve network infrastructure;
- improve local IT support;
- negotiate agreements with other CG Centres or hosting organisations

This part of the project always relied on the centres involved to lead and carry out the recommendations before the project can assist with implementing the improved internet connections and in many cases this has caused long delays.

Prioritised sites no longer included in the project

Of the prioritised sites 8 were grouped with other sites in the same location. Two offices were closed before the site survey took place. In Abidjan, the site survey was not carried out because of civil war and eventual closure of the office and in Honiara, Solomon Islands the office was closed by World Fish.

Three offices were closed by their Centres after the site surveys were completed. These were the IWMI offices in Bangkok, Thailand and Lahore, Pakistan and the Bioversity (IPGRI) office in Toezour, Tunisia. Five further sites decided that they did not require improved internet access following the results of the site surveys; IITA Nkolbisson, Cameroon¹; WorldFish, Egypt; ICRISAT Kathmandu, Nepal; CIMMYT Kabul, Afghanistan; and CIAT Luang Prabang, Laos.

¹ IITA as the host Centre does not want to upgrade this site, however CIFOR and World Fish who are hosted IITA still prefer a more reliable and faster internet connection.

In two sites the site survey has not been completed, at this stage we are assuming that these sites are no longer a priority for upgraded internet connectivity. These are in Beijing, China; and Vientiane, Laos.

Three Centres whose office prioritisations have changed during the last 2 years have requested a change in their priority sites. The 3 sites that have been added to the list are IITA, Cotonou, Benin, where Bioversity and WARDA are also located; CIFOR Lusaka, Zambia and Bioversity, Tunis, Tunisia.

The result of these changes is that the project is now expecting to implement improved internet connections in 28 sites.

Locations where implementation is pending

Including the 3 new sites there are 12 sites where the improved internet installation is pending. Each has particular reasons why the implementation has been delayed; these are documented later in the document.

Of the 12 sites one is in the Pacific Ocean, one in North Africa and the others are in Sub-Saharan Africa. In Sub-Saharan Africa site surveys have been completed in all sites. Where these sites are in rural areas and even in some cities the local communication infrastructure is poor so a satellite solution is recommended for improved access to the internet. Individual solutions have been evaluated to ensure that the best solution is provided for each particular site. A solution that gives the best opportunities for future upgrades is always preferred especially if this leads to easy migration to optic fibre internet connections when these become available in the area. The iWay Afsat solution is preferred for small offices (less than twenty computers) in most parts of Africa. However licensing of satellite installations has been a problem in Zimbabwe and Ethiopia.

Details of the issues affecting the 12 sites are:

- a. Gizo, Solomon Islands – a satellite solution has been proposed and is currently being evaluated to ensure that it is the most appropriate solution; it has been difficult to identify local providers to deploy and guarantee local support; recent staffing changes at WorldFish have also led to some delays.
- b. Kampala, Uganda – negotiating collaboration between the different CGIAR offices has been an issue. In 2006 ICRAF closed its Kampala office and several of the other offices have moved to one site within Kampala. A satellite solution is being proposed by IITA for these offices. This is being evaluated in light of recent information indicating that optic fibre internet solutions will be available from Kampala 1st quarter of 2008. Also the fact that the previous CGIAR satellite installation was sold to a local ISP by the IITA office in Kampala needs to be taken into consideration.
- c. Zimbabwe, Harare and Bulawayo – preferred satellite solution but licensing satellite installation has been a major problem and becoming more difficult. The project is in a process of seeking the services of a consultant from the African ISP association, who may be able to help negotiate for licensing. Despite these difficulties the project purchased firewall equipment for Harare and also supported the office in carrying out minimal upgrades with their ISP, though useful, didn't achieve the desired bandwidth or reliability.
- d. Cameroon Bastos and Nkolbisson – IITA has indicated that their Nkolbisson office does not require assistance to be upgraded. However, CIFOR and WorldFish who are hosted by IITA are not satisfied with the reliability and speed of the Internet connection that they receive. IITA's priority site is now Cotonou, Benin. ICRAF plan to move their staff from Nkolbisson to join the office in Bastos which is one of their priority sites. The project is in the process of ordering firewall equipment for the Bastos office and identifying local providers for this implementation.
- e. Butare Rwanda, Arusha Tanzania and Kawanda Uganda – CIAT sites that require assistance negotiating improved solutions with their national hosts. The CIAT management also need to approve infrastructure upgrades before project installations can be carried out.

- f. Debre Zeit Ethiopia – ILRI are currently carrying out a review to determine the future use of this field station. Once the future is known the appropriate installation can be implemented.
- g. Cotonou, Benin - IITA have requested to change a priority site from Yaoundé, Cameroon to Cotonou, Benin where Bioversity and WARDA are co-located and will also benefit from the planned improvements. Site surveys have been carried out and recommendations for satellite upgrades have been made. These are being evaluated to provide the most suitable solution for the three centres. The project is also in a process of purchasing firewall equipment for this office.
- h. Lusaka, Zambia and Tunis Tunisia are two locations recently accepted by the project and the available options are currently being evaluated.

Completed Internet connectivity upgrades

In total 16 of the prioritised sites have completed or almost completed the upgrade of their internet connections.

Two locations completed the upgrade of the internet connectivity in 2005; these are the CG Delhi office that hosts 9 CG Centres and the IWMI office in Pretoria, South Africa. Communication and evaluation documents on the Delhi implementation have been produced and those of South Africa are in the production process. Important lessons learnt from these implementations are invaluable in the preparation for other installations.

In 2006 the project approved the plans for upgrading the internet connections in 10 locations. These include Serdang, Malaysia; Accra, Ghana; St. Louis, Senegal; Kabul, Afghanistan; Ouagadougou, Burkina Faso; Cairo, Egypt; Tashkent, Uzbekistan and Bamako, Mali. In Chitedze, Malawi and internet connection has been installed and staff at the campus are slowly being connected to the Internet. The connection in Addis Ababa, Ethiopia is currently being upgraded. This follows the commissioning of optic fibre gateway out of the country that has relieved contention.

A further 4 sites upgraded their internet connection at their own, minimal, expense following the site surveys and advice from the project. The 4 sites are Ankara, Turkey; IRRI Bangkok, Thailand; Zomba, Malawi and Anand, India.

ICT Briefcase, Training Material and use of available Resources.

The ICT Briefcase is an integral part of the project that aims to provide information and tools to help country and regional offices optimise the use of the improved connectivity and better manage and protect their data and information resources. CIAT staff have been involved in its development; and are currently waiting for more input from other CG centres in order to further populate the briefcase.

An excellent resource from BalancingAct-Africa of a series of 4 CDs containing ICT Country Profiles for all African countries has been added to the ICT briefcase. This resource has been extremely useful in guiding sites in Africa as to the options that are available to them and regulatory environment that they have to deal with.

The project aims to improve the use of resources available to the Regional and Country offices. Improving internet connectivity only guarantees that more resources are available to the offices and we need to do more to ensure that staff know how to use these resources effectively.

- a. A survey of the regional offices will be carried out to determine their priorities in relation to use of available resources and additional resources that they require.
- b. From the results of the survey additional information will be made available through the ICT Briefcase. So far the CG Centres have not been able to provide or recommend people to develop the required training materials. Therefore, the project will identify writer(s) of training materials who will be contracted to develop the material that we are unable to source from other locations. The CD version of the ICT Briefcase will be sent to all offices along with a book on Internet use.

- c. A spin-off from the first phase of the project was the first comprehensive audit of CGIAR offices around the world. The audit has been updated with the latest information from the Centres and the project. This has been used to update and add to the information on the map that is available on Cgxchange. The project will take the opportunity to redesign the map to make it more user-friendly and easier to view a Centre's sites and related information.
- d. We are in touch with IT trainers who will be contracted to visit all sites to provide training to staff. This will include training in using the resources available on Cgxchange (ICT Briefcase, Vlibrary, journal access, shared workspaces etc), use of Communication tools (Office Communicator and Skype), responsible internet use, data management (including backup of data) and network security. The training will generate some additional customised training materials that will be added to the ICT Briefcase.

The audit of the CGIAR offices, carried out at the beginning of the project has been updated, using the information obtained from the site surveys. This has been used to update and add to the information on the map that is available on Cgxchange. The project has committed to improve the map and make more information available in a user friendly format.

Testing a model for IT regional support

ICT support to regional and country offices is a challenge for many Centres. Centres are often too far away to have a good understanding of the local IT environment or HQ staff do not have the time available to provide support to both HQ and the regions satisfactorily. A pilot activity will be undertaken to identify an acceptable model for providing ICT support in a region.

- a. The project will contract an IT Specialist for 1 year to coordinate and provide IT support in the Southern and East Africa region. The person will ensure that site surveys have been carried out at all offices in the region and that these are used to develop improvement plans for each office. They will identify good quality reliable local resources and ensure that local support is available to all offices in

the region, that recommended standards and configurations are implemented, that infrastructure improvements are raised with the appropriate Centres and act as a link to the Centres in the region and HQ offices.

- b. The pilot will be monitored and evaluated with a view to developing a model for providing IT Support that can be continued and expanded to other regions.

Design and implementation

Satellite connections are the most appropriate solution for improving access to internet in many of the sites in Sub-Saharan Africa. This results in a slightly higher operating cost but gives greater flexibility in speed of implementation and reaction to future changes in the local communications environment as well as providing better reliability of service. In this regard, the project has seen more sites upgraded in the past year than in the previous years. However, sites that would have otherwise been upgraded are still pending due to licensing issues. In light of this, the project will be contacting some local companies that operate across Africa to assist the project overcome this difficulty.

The project has established a standard portable network configuration that is being installed in offices that need to improve the network infrastructure and in all future country offices. The transportable nature of the configuration will make it easy to move the equipment to where it is needed as offices move to larger/smaller premises or to be re-deployed as offices open and close.

In some sites, such as Arusha and Butare, the lead centres are yet to negotiate with the NARI hosts and ensure that the required infrastructure improvements have been made. Other sites such as those in Uganda, negotiations with all offices at the location need to be done to ensure that infrastructure improvements have been made before project installations.

In 2006 Ethiopia opened an optic fibre gateway through Sudan, the project will now assist the Ethiopia site upgrade their main internet connection to take full advantage of this improved situation. The future of the Debre Zeit site is currently under review by

ILRI, assuming a positive outcome to the review the link between Debre Zeit and the Addis Ababa office will be upgraded.

We have obtained quotations to purchase equipment for the pending sites in Africa and are currently shipping the equipment already received.

Project Delays

The project is behind schedule, the principal reason being that most of the work is being carried out by CG staff that already have full-time jobs in their own centres. For most staff the project is considered as an addition to their normal workload and therefore we have had to wait for them to fit project activities into an already congested work plan. This is particularly true in carrying out the site surveys and implementing the recommendations from the site surveys. Although this has caused delays, in the long run it will be better for the sustainability as it encourages people to feel ownership for the work being carried out by the project.

The original project plan underestimated the amount of work required in terms of IT Support and infrastructure improvements that were required in many locations before the project could install improved internet connectivity. Most Centres had not budgeted for the improvements that they were required to make and it took time for capital budget to be approved. This was despite these locations being high priority offices for the centres concerned. There were no funds allocated by the project to assist the centres make these improvements or to facilitate them.

The time taken to negotiate a solution that is sustainable to all involved was underestimated when developing the project plan. Someone with the appropriate authority needs to take the lead in these negotiations. It may require working out how offices in the same or similar location can work together to share the internet service or negotiating with NARS on how we can best assist them to improve the bandwidth and management of their internet connections. The example to follow is the Delhi office where the DG of ICRISAT took the lead in negotiations between all the centres located

on the CG Delhi ICAR campus. Once agreement was reached implementation was relatively easy.

The status of the country and regional offices seems to be in a continual state of flux. Offices that were high priority last year are no-longer such a high priority and in several cases are being closed down or relocated. The project is not in control and sometimes not even in the communication loop of these decisions which makes planning more difficult. However, the project took the initiative to afford each centre one more site for consideration for connectivity upgrade, where any previous priority site is no longer priority.

In Africa, licensing in some sites has been the greatest obstacle to satellite solutions implementation. In Harare and Bulawayo, the situation is particularly difficult; the project in many occasions has tried to negotiate for licensing from the local authorities but the situation is still cloudy. In Addis Ababa, licensing was also a major difficulty but with the commissioning of an optic fibre gateway to the internet the situation has improved; the project has obtained quotations from the government owned Telecommunication Company and we hope to move faster with the implementations in these sites.

Conclusion

The project has been successful in upgrading internet connections in 16 sites and giving improved access to important resources both on the Internet and hosted within CG Centres. However progress has been slow. One of the major problems that regional and country offices face is that many of the Centres do not invest enough time and funds into providing the services that they require to work efficiently. Those Centres that do invest the time and funds, like ICARDA and IWMI, have seem major benefits in the way that the regional staff can communicate with others in the Centre and gain access to more and better resources.

The project will submit a Request for Project extension that will concentrate on 3 areas:

1. Complete the installation at the pending sites

2. Improve the knowledge and capabilities of the regional staff through better training materials and training courses
3. Provide improved IT support to the East and Southern Africa Region in a pilot project that will provide a framework for improved support to regional and country offices in other parts of the world.

Annex

1. Financial report