

The impact of ICT in Bolivia in 2009: experiences of TiCBolivia

“I am developing my own teaching material with the help of ICT”

The multi country state of Bolivia, named since March 2009 for the New Political Constitution of the State, is a country that is located in the heart of South America without access to the sea. It is characterized by its large geographical differences, from the mountains of the Andes, to the valleys and low areas like the Amazon and the Bolivian Chaco. Bolivia has a population of 10 million inhabitants, of which 65% lives in urban areas and 35% in rural areas. 70% of the Bolivian population is concentrated in the departments of the central axis known as La Paz, Cochabamba, and Santa Cruz. The country is characterized by having a young population. The latest census of 2001 indicates that nearly 60% of the population is younger than 25 years.

On the one hand, recent changes in the structure of the government are guiding the country through a process of historical change with social inclination. These changes aim to reverse the current conditions of poverty, increase development policies, and give prominence to social organizations. On the other hand, the political-social-economical climate for neo-liberal governments has left the population in maddening conditions: 58.6% of the population is poor, 30% is extremely poor, and in the rural area this number adds up to 75%.

In addition, in the Era of Information Revolution and telecommunications Information and Communication Technology (ICT) has become a strategic sector worldwide. It has created a new stage "in cyberspace" in which communication between people has no borders. In this scenario, IICD (International Institute for Communication and Development) has supported the introduction of ICT in Bolivia since 2000, as a tool for sustainable human development.

Moreover in September 2000, leaders from 189 nations agreed on a vision for the future: A world with less poverty, hunger and diseases, with improved chances of survival for mothers and their children, better education for children, equal opportunities for women and half-preserved a better



environment: a world in which developed countries and developing countries work together towards the common good. This vision took shape in the eight Millennium Development Goals (MDGs), which provide a framework for planning the development of countries around the world and time-bound targets to measure progress.

The fulfilment of these targets has to be realized before 2015. When Bolivia signed its commitment to the MDGs, it took the challenge of compliance. According to the fifth national report¹ on progress towards meeting the Millennium Development Goals, Bolivia is progressing with actions to achieve

¹ Published in 2008 by the Analysis of Social and Economic Policy (UDAPE) and the Interinstitutional Committee for the Millennium Development Goals (CIMDM)

them, even if the extended Bolivian social goals are more ambitious.

Impact of ICT in Bolivia

Would it be possible to help to reduce poverty levels in Bolivia through appropriate and equitable use of ICT? The answer is yes. New technologies represent an important opportunity for the country's development, as demonstrated by the experiences of TiCBolivia National program, which has been supported mostly by IICD. In the described context, ICT has proven to be a valuable tool to enable progress on four of the Millennium Development Goals:

- Goal 1: Eradicate extreme poverty and hunger through the reduction of people living on less than \$ 1 (half the population);
- Goal 2: Achieve universal primary and secondary education;
- Goal 3: Promote gender equality and empowerment of women;
- Goal 8: Implement a global partnership for development and implementation of new technologies.

When IICD in 2000 committed itself to work in Bolivia, ICT and its implementation were still unknown in the country. The process was started using the round-table process to identify needs, which are then translated into projects. The participating institutions took the challenge of implementing ICT in their workplaces. In order to realize this, the participating institutions used IICD's strategy of developing-country work, with support from IICD to take the important steps to understand and apply ICT for development. These steps were supported with strategic advice and support of the National Program Manager. The process was strengthened by the exchange of experiences, the use of focus groups, capacity building, and accompanying impact assessment to development.

TiCBolivia National program promotes the use of ICT for peasants, teachers, students, indigenous farmers, etc.. With the use of this program, they have access to communication and information, they can be better informed, and meanwhile obtain an improvement of their quality of life. IICD supports the implementation of ICT in the country's nine departments, with three areas of intervention: governance, agriculture and education. To date, the support has reached

over 700,000 beneficiaries in nine departments. A total of about 200,000 direct users interact directly with the technologies and information and training services in the three program areas.

IICD and partners in Bolivia measure the satisfaction of the end users with the services that are offered through the projects. They also measure the impact that the projects have on the final users by using indicators of satisfaction with services, awareness, empowerment, economic impact, and impact of the sector. The system includes filling out online questionnaires and giving feedback to participants in focus groups, where information is socialized. The monitoring and evaluation of IICD is unique and has been feeding since 2003, allowing a continuous assessment for 7 consecutive years. During this period we have completed no less than 5.459 questionnaires, which in 2009 were filled up with another 1.570 questionnaires.

Conclusions and recommendations

7 years of impact of governance projects shows that the use of ICT has contributed to the empowerment of people, through training in their own communities and places. It has allowed them to exercise their human rights and leadership for the benefit of their communities. MDGs 3 has been supported directly by the exchange of information and the possibilities to access the Internet, because this increases the participation of women in decision making or in human rights claims. This is also mentioned in the following testimonies: "I feel a useful person for society and my family, I am a woman who can defend herself, I have to enforce my rights as a woman and thus there is no domestic abuse" and "I can write and read messages because I managed to learn about computers and the internet. I do this for the good of the women in my organization, to have more information and to know what is happening in other departments and other countries."

Similarly, the evidence of impact on education shows that the use of ICT in teaching and learning processes contributes to an improvement in the quality of education in both primary and secondary education and therefore contributes to the objective of MDG 2. This can be seen in the testimonies of some teachers: "I had access to in depth knowledge of the history and the culture of our indigenous brothers",

"Students will strengthen their own identity and respect among different cultures, world views and customs of different peoples", "The upgrade of teachers in ICT allowed me to develop my own digital educational materials and expand my vision of using new teaching methods to improve the quality of education."

The strong and continuous evidence of the impact on agriculture projects can help with the encouragement of small and medium producers as well as rural producers who struggle day to day against poverty and hunger. Access to agricultural information contributes to an improvement in the income of producers with a low income, thus contributes to MDG 1 as shown in the testimony: "I now know the worldwide machines, Internet and organic products "

Among the suggestions of the end users, there was the request to continue the training of some of the supporting organizations. Second, despite increased attention and the introduction of alternative connectivity models, the majority of the users in 2009 have no connectivity, and therefore the demand for access maintains. Finally, the users acknowledge the support of IICD and apply for further support, since the support remains crucial and important for further progress. The challenge of the proposed strategic advice is to maintain support in finding funding and finding joint solutions.

1. Empowering women through ICT in Governance

With respect to governance, it can be stated that in 2009, two institutions have participated in online self-assessment process for their end users: The Confederation of Indigenous Peoples of Eastern Bolivia (CIDOB) and the Casa de la Mujer. The two organizations have been working on ICT projects for the empowerment of women, with the support of IICD.

CIDOB strengthens the leadership and public policy advocacy for indigenous women, whereas Casa de la Mujer works with women in rural and peri-urban areas, through a virtual office for guidance and legal and psychological counseling to women victims of domestic violence in the middle social strata. This report is based on the opinion of 86 users of ICT projects of both organizations, and resulted in the following observations and lessons learned in this sector.

User Features

The statistical data shows that in 2009 again a high percentage of participation of women in the projects was maintained, corresponding to 98%, while male participation is 2%, suggesting that this corresponds to objectives pursued by both projects. Second, 85.5% of the users live in rural areas and 13.6% live in cities further inland, in suburbs, where there is little to no access to services. In addition, most people with low incomes live in rural areas (86% lower than the average incomes of the population). About 80% of the users have primary and secondary education: 57% has only primary education and 23% has secondary education. 5% has no formal education and the remaining 15% has tertiary education. The information generated shows that the projects are most beneficial for girls and low-income households, those without access to a computer or Internet services, and for those who live mostly in rural areas.

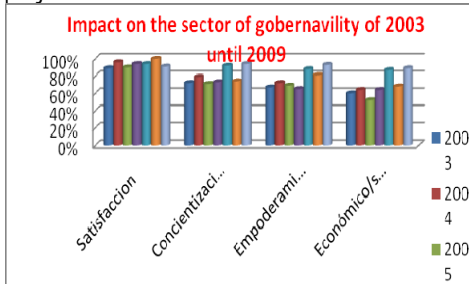
In the focus group, members of project teams have indicated the success factors of ICT projects in governance and gender issues:

- "Addressing the demand of end users leads to the appropriation. Wanting to know, wanting to take their needs leads to empowerment."
- "Decision-making from the end users, e.g., a local leader in CIDOB became a national leader who did meet the demands of women."
- "Continuous learning from the training (continuous monitoring) to strengthen leadership step by step."
- "Openness and flexibility (interest on the part of the end users)"

"Accompanying the pairs (the most advantageous assistance to the other), becoming co-facilitator has the advantages of common language, confidence, the willingness to help each other, etc. You can learn faster and leveled, and it empowers the co-facilitator. Continuous monitoring can be done for this partnership with other institutions. For example, House of Women made a covenant with the career of Social Work students who trained and helped in the reply to the women of the neighborhood."

Satisfaction

The chart below shows that for 2009, 91% of the users of CIDOB and Casa de la Mujer are satisfied with ICT services and the information that they received in the projects.



Also during the years, satisfaction remains above 90%, which is a figure suggesting that the projects have been answering the needs and that solutions or responses were created to suggestions and requests of the users.

Among the opinions of the users one can mention:

- I learned to use ICT and to communicate with others.
- I created my core and have posted my news to tell you how we live.
- I learned how to send my information and everything I want without problems.
- I see with great satisfaction how to communicate with people that I need to streamline my activities with and I do it through the internet because it is easier and cheaper.
- With the training we've had, I have improved my leadership because I have more knowledge the project is meeting us, we have raised the required courses.
- It was a successful part in the courses to lose the shyness of being able to demonstrate and be more informed of what's happening in our country and learn more, this is important in everyday life.
- The online service clinic is very beneficial and accessible to women who need help to handle violent abuse. Thank you.
- I feel satisfied with what I do, I have more knowledge to defend myself and to assert my rights as a person; the project helps me a lot.
- I am satisfied with everything I've learned.
- I learned to defend my right to prove that women can go ahead alone and that we must not be

mistreated and that we have the courage to denounce and stop being afraid.

- I learned the management of the computer.
- I teach many things besides being involved in this project. Now I know more about my rights as a woman and therefore I provide services and support.

The end users were satisfied with the Information Centers, as they brought new opportunities: The users can train in their own rural communities to manage computers, access the Internet, access information, communicate, and at the same time to exercise leadership, or even conduct their consultations on the issue of violence anonymously through the virtual office.

In the focus group, the project team members have talked about connectivity, an unresolved issue to date in the program. From the beginning connectivity has been a concern to IICD and therefore there has been a constant search for alternatives. The alternatives should provide Internet at one point (either DSL or Satellite) and from that point connectivity could be extended through wireless (WiFi, mesh, etc.) This connectivity would then be extended to other remote communities, but there is still no definite solution. Therefore IICD will continue to support the theme of technological innovations, through the modality of "drivers." Suggestions by the project managers are:

- Perform exchange of knowledge / experience amongst members.
- Build a national network Pilot. Continue with the investigation of new technologies, for example, 3.5 G (technology that uses Tigo) Investigate Motorola technology, the experience of "virtual cities", e.g., cell technology, etc.
- Make a platform to exchange information involving IICD, where the history of recorded conversations is shown, as well as solutions, so that other users can learn (either internal blogs as a service to the community, or Google group). Suggestion for the name: CONECTABOIVIA.
- Continue with the advice and specialized training for technicians in connectivity issues, wireless networks, Moodle. TICBolivia will

fund two workshops to increase vigilance.

- The technical projects should be proactive, to become a platform to support the Red TiCBolivia, to help to negotiate for future action.
- Learn about new projects, e.g. ALIS, Alice, Clara Red, etc.

Awareness

The rates of awareness of the benefits of ICT for the end users, are about 94%. This is a very high percentage considering that the awareness variable is an indicator of impact. Among the following opinions can be mentioned:

- I can now communicate and find a project to conduct a women's organization
- I learned things that I did not know and I am very grateful
- I'm learning what the internet is and I can write a little and send notes via the Internet, now I could go to Google, thanks to this course I can use these tools.
- We learned to make international contacts, send documents and meet other experience of other countries
- Now I can open my mail, and also upload images.
- The management of the computers that I am learning has changed my knowledge of reality a lot
- I learned the management of a computer and feel I am a woman to date. Through this project I feel well equipped to support other women.

As seen in the users views of the project one seem to see themselves as having gained a greater awareness of the possibilities offered by ICT (for their work and life). The projects have an awareness rate of about 70% the years 2003-2006, and percentages around 90% during the years 2007 and 2009. This seems to be related to the participation of women, which was in the early 2000 about 35%, and then it increased year after year to reach 98% in 2009.

Empowerment

For its part, empowerment has grown steadily from 76% in 2003 to reach 93% in 2009. This is a fairly high percentage, considering that the empowerment indicator measures the impact one step beyond awareness. These figures suggest that users are able to acquire new knowledge and skills, or are helping others to do so, as can be seen in their views:



- Now I can handle this easily and this tool helps a lot when I do the leadership process.
- I see that use of the Internet makes it easier and cheaper to contact my community, my colleagues, as well as the institutions that support us in order to streamline activities.
- Now I can write and publicize messages, I have also learned about computers and the Internet, for the good of my organization.
- "I am a useful person for society and for my family, I am a woman, I can defend myself, I have enforced my rights as a woman, and thus there is no domestic abuse.
- I'm a fighter, so I have learned not to be afraid of anyone, I can decide what I want to do
- I share with my colleagues, friends and also with my family and I learned that all that I can learn, they can learn too.
- Because of the project we have more knowledge about non-violence against women, we have increased self-esteem so that we don't have tolerate discrimination and abuse by man and that they will respect us as women.
- I've learned to use this tool which facilitates communication, timely information to make better decisions in daily work

Economic and sector impact

Similarly, the indicator of economic impact and impact on governance sector has grown year after year, from 60% in 2003 to 89% in 2009. This seems to be generally higher for impacts of projects where the majority of their users are highly satisfied with the services we provide such as access to information, efficiency, effectiveness and transparency of information. Although no Governance projects pursue the goal of economic impact, since this is an indirect

impact, apparently to the users did develop these capabilities.

The impacts in 2009 are higher than in 2008, but users say they still need more continuous training, improving access to connectivity and provision of computer equipment. The Confederation of Indigenous Peoples of Eastern Bolivia (CIDOB) is the representative organization of indigenous peoples from the lowlands and is implementing ICT with the support of IICD since 2000 through different projects.

The main struggles for the indigenous movement are the subject of territorial demand, being able to develop a negotiating strategy with the State, and the ability to get the promulgation of the INRA Law. This law recognizes the right of indigenous peoples to communal lands of origin (TCO), as well as it establishes a mechanism for their degree. But in the application of the law, problems have arisen that have prevented the immediate qualification of the territories. In this context, the ICT project facilitates the implementation of a network of information centers where they have the latest information on titling, land management plans, conflicts with others (loggers, ranchers, and others), and follow-ups to agreements and conventions signed by the Government.

During nine years of joint work with IICD, there has been an effort to support and reach the farthest corners of the indigenous population, to train their regional organizations directly, with the aim to improve the access to information and to improve leadership skills. The CIDOB has apparently also used IT projects to respond to ongoing and explicit demand of women working in ICT. In 2009, indigenous women leaders, who represent their communities, have continued to develop and strengthen their capabilities, with respect to both ICT and leadership. They have learnt to exercise leadership, to influence public policy, and some have been participating in the change process in the country to contribute to building sustainable and equitable development.

The project is implemented in all regional organizations affiliated with the CIDOB. It seems that ICT has enabled them to inform their communities about what has happened to their natural resources, their territories, the political problems that affect them, and so on. It allows them to raise their self-

esteem, as a first step and to feel that they have the ability to exercise their leadership role as a strategic ally using ICT tools.

Next, with the support of IICD, the House of women has made significant progress and impacts on the theme of Governance in relation to ICT. Since 2000 the project has gradually focused its work and since 2008 it has focused on vulnerable women who are living in peri-urban neighborhoods who suffer violence issues.

In Bolivia the problems of violence against women are usually shouted down by the machismo and by submission of women. The House of Women is an organization specialized in issues related to the support of women. In this respect the support of IICD has boosted the performance of a virtual clinic for legal and psychological counseling to women victims of domestic violence strata social media. These women can consult and seek guidance anonymously. The project aims to support both direct counseling service for female victims of violence through the virtual office and to provide an enabling network to share their problems with the rest and so that they will feel strengthened and supported in their decisions.

Apparently the social fear of many women to be identified is still so strong that they prefer to remain silent and endure the violence. Therefore, the virtual office offers consultations anonymously, which has brought a considerable increase in the number of queries that inform women about how they can exercise their human rights. The project also develops skills in the area of human rights in the peri-urban neighborhoods, which has provided the possibility to users to advance and improve their skills day by day, to build a humane and equitable sustainable development.

For Users of Casa de la Mujer, access to information by phone and the costs involved has a high degree of importance. 93% of men and women report being highly satisfied with the services of the project, including training in human rights issues, domestic violence, computer literacy and access to the office. In June 2009, the Info Centre (ICS) has been installed in the neighborhoods and started promoting the formation process. Because the subject of the project is new to them they seek more training in both the legal issue and the management of ICT.

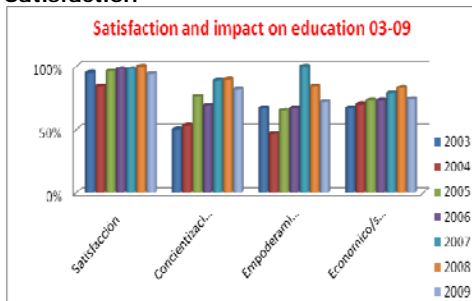
2. Improving the teaching and learning in the education sector

The institutions that participate in the Self-evaluation of their end users in the education sector in 2009 are: AYNI, CEPAC, EDUCATIC and APCOB. The projects work in the area of integration of ICT to support educational processes. Thus, we have worked on the development of digital content in primary and secondary education, and on the use of interactive CDs with information about indigenous cultures and educational computing centers. The final users include directors of schools, parents, teachers, and students. In this sector opinions have been collected of 411 teachers and students. You can see the following lessons for the sector:

User Features

In this sector, 50% male and 50% female respondents participated, which indicates that the target for education projects has been reached. Further on, 52.5% of the users among teachers live in rural areas, 44% live in cities of the country, and the remaining 3.5% live in the capital of the country. They all live in peripheral neighborhoods where access to services is very limited. Most of them receive revenues equal to the average Bolivian population (83%). 69% of the teachers have tertiary education (3% has only primary and 28% has also secondary education). It also confirms that the participating schools in rural and peri-urban areas are poor and do not have access to computer services and / or Internet.

Satisfaction



As shown in the Figure above, satisfaction started on with a high rate and it has held for six years, but this 2009 has dropped a little to 94%. Although this is still a fairly high percentage, the fact that we lost some satisfaction over the past years seems to indicate the need for some adjustment in the projects. It is recommended to deepen the topic in a focus group with users. The satisfaction indicator measures satisfaction

with respect to training, access to educational materials, quality, relevance of information, and the support to implement programs in their schools (including internet access). Among the views of the users, the following can be highlighted:

- Now I have knowledge of the wonderful things that can be done using educational computing.
- I am glad because now I can prepare some of my teaching materials to the satisfaction of my children
- Thanks to the technology, my students rallied on learning level.
- I have noticed changes that were achieved with successful students, which points out that we can use the same great approach for our children so that they can learn the content through technological means, losing their fear of using the computer
- That students are more excited to work at the tele-center, is also more practical.
- I still needed to consolidate my knowledge of other tools for developing digital educational material.
- The world of technology is very broad. However, the project has served to open his eyes a little and realize that teaching using ICT will be good.
- Broaden my horizon towards the TICs vision
- I'm able to apply the NTIC's in the classroom and the classes are more dynamic.
- I'm working on a new strategy and I am motivated by the thought that we will create our own material.
- Thanks to the training received, now I could install programs and set up the network at my Tele-center.
- Now I am developing my own teaching material with the help of ICT.
- Participating in this project has motivated me to learn and get more involved with the ICT and the benefit of my students
- Because students are reinforcing their own identity and their respect among different cultures, world views and customs of different peoples.

In general, teachers strongly agree that ICT is a partner in the study, when they know

how to use it. The quality of education improves. This is the case in the elementary schools in East and West, where these institutions carry out ICT to improve the quality of education.

Awareness

The rates of awareness regarding the benefits that ICT brings, are about 82%. This is a very high percentage, considering that the awareness variable is an indicator of impact, which is apparently an important tool for teachers to access information, to improve educational quality and to envision new opportunities. In this respect, the following opinions can be mentioned:

- We represent HAMO in the lab, to have the sufficient conditions for conducting the course.
- Since I occupy the post of teacher in charge of the tele-center, my colleagues want to join the call center too. Here we conduct trainings for the community
- I am preparing my digital educational materials for my classroom lessons, using computer and multimedia projector.
- To participate in this project I have new opportunities of ICT
- We have made proposals to digitize games in the field of physics
- First, students know and value the indigenous peoples of our country. Second, we can transmit fresh concepts to students.

According to the views of the teachers ICT is used as an ally to improve teaching and learning potential. In 2009, the rate for awareness was 82%. This percentage stayed more or less the same in the last three years, which seems to be related to the skills that teachers acquire in relation to ICT management.

Empowerment

For his part, empowerment has been 72% in 2009, which is a decrease compared to the past 2 years. Yet, this is a fairly high percentage for educational projects that seek to develop skills, suggesting that it is best for teachers to acquire ICT skills in class and to use the technology in their daily lives. This is reflected also in their opinions:

- Now I go to seek more information on cultural sites.
- Comment about the project to other people outside the normal.
- Today my communication is via email, I use the phone in the municipal system. I can perform

maintenance and repair of the computers tele-center

- To date, I am developing my own art work in coordination with the institution, meanwhile I support the management of the computer and I use some programs for my children and some for the community.
- In addition to teaching my students what I am learning, I can also guide my family, sons and nephews to use the computer
- Now I'm arranging my own packages, to produce sheets of notes.

The fact that teachers express their consent to apply ICT in education is a significant step. Next, the students are more motivated to use computers and the various programs and to access the Internet.

In the 2009 focus group, the project team members have spoken of the success factors and the difference in impacts between teachers and students.

- What are the success factors of ICT projects in education?
- "A functional structure that assists in the implementation of projects (the involvement of teachers)."
- "The new contents generate interest in the beneficiaries. "
- "The introduction of new ICT tools like computers, internet, etc. "
- -Encourage teacher training processes.
- Why do we see a higher impact among students than teachers?

The generational difference influences, young people are more open to assimilate ICTs as part of their social milieu (the digital age). Instead teachers develop resistance because they lack this facility having grown up in a different medium. This item was discussed at the plenary disagrees, and called for assistance to break the paradigm, this approach had left the ministry and not forward. The experience is that teachers at any time they feel intimidated because their students use computers better than them, on the contrary, they feel many benefits as it has improved the teaching and learning. The first to get involved is the teacher. The difference in the impact may also be because teachers are more critical to the assessment, unlike the students who have a game or access the chat is fully satisfied.

Economic and sector impact

By measuring the economic impact, teachers and students are satisfied with the use of ICT: "The use of the computer connects you to the world and provides you with more opportunities, and thus chances to improve the living conditions." The high percentage of the impact indicator in the education sector, is directly related to the improvement of teaching and learning processes. The teachers emphasize that these are the reasons that the projects have enabled them: access to relevant and high quality information for students, the ability to create their own educational materials, and the use of CDs.

The economic impact indicator of the sector is 74%, suggesting that the projects represent a new challenge for learners and teachers. However there is the support of local seduces, organizations implementing projects and there is the ongoing support of IICD. Students experience innovative ICT and commented that the use of the Internet enables them to contact other people and that they even get to know other cultures. Among the demands, the teachers suggest that the project can reach not only students but also people in other areas and practitioners who are not currently connected. Further on, there is the desire to acknowledge the support of institutions and IICD, to seek support to get access to the Internet, and to continue with the training and support in the development of local content.

In the case of the institution APCOB (Support for East-Indian Farmers Boliviano) the project is framed within the field of Intercultural Education. Through the use of ethnographic material, audiovisual media have been supporting the teaching-learning system. By using these means students from urban schools, suburban schools, and rural areas were enabled to meet, assess, and bail out the cultures of the Indigenous peoples of Eastern Bolivia. Teachers said that even for them it has been a learning process: "I learned things could not imagine about people from other towns and I could share this with my students. First, my students know and value the indigenous peoples of our country. Second, we can convey new concepts to students. It was a wonderful experience and it allows me to innovate my educational work."

Also, thanks to the implementation and methodologies of AYNi institutions, and

EDUCATIC CEPAC, teachers and students performs their educational activities better, (with efficiency and effectiveness). For users who live in rural areas it has been hard to communicate with the world, to meet other people and cultures; previously the projects have been unsuccessful. Now, the projects have enabled them to exchange knowledge with students of their same age in other countries, but also management training programs such as Encarta are highlighting students and others in rural areas: "Now I can better assist the work of my brothers, and also my own work. I managed to meet more people with other beliefs and religions. I've gotten to know the culture of other countries and people." Teachers mention that thanks to the training they can develop their own educational materials: "I'm developing my own teaching material with the help of ICT. Through the training I received, I am improving my teaching materials. "

The project is a new challenge for them, but there is also the support of local seduces. Teachers are well aware that the application of ICT in education has been a big step. Among the demands of teachers and students, there is the demand for more training, to be able to have access to the Internet to conduct their own research, and to support the development of their own local content. This way, they can expand the project to other users (not just students), parents and other professionals.

In the focus group, members of project teams have discussed if it is necessary for teachers to develop their own content or if they are satisfied with the use of local content?

It is important to apply your own content, local and external, since they complement each other. "Own" means that they are developed by teachers themselves, the premises would be available in close context to provincial, departmental, national, and international context. In addition, when the teachers create the content themselves, it is easier to apply, since their preparation and involvement results in greater identification with their materials. It also raised the esteem of the teacher. Internationally there is resistance to the development of local content: Experience says that both kinds of materials are important: to develop proprietary content locally, and to complemented with external content. The important thing is that the teacher can adapt to the needs of his/her pupils.

It is necessary that teachers have "some skills" that allow you to develop content, but which also enable you to adapt the external content to your needs. This involves training of teachers in the use of certain tools. The wear resistance is normally made content. This also happens with producers: if he does not interact with the computer he can not use the results of it (prices). But the resistance is over when they are involved.

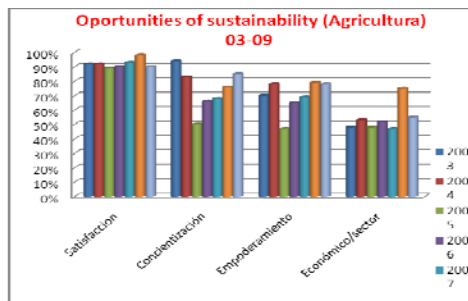
3. Improving the income of low-income producers in agriculture

In the agricultural sector for self-assessment process by final users in 2009, the organization has only participated with AOPEB Association (Organizations of Ecological Producers of Bolivia) with a total of 60 end users. In this sector, 62% men and 38% women participated. This year the participation of women has increased, which indicates that they are still working on the issue of gender equity in agricultural projects. Moreover, most end users (95.5%) live in rural areas, the remaining 5% lives in cities of the country. Most of the users are small farmers who earn less than the average population of Bolivia (77%). 37% of the users has primary education, 33% has secondary education, and 18% has no formal education. The remaining 12% has tertiary education.

The actions this year were focused on strengthening human capital, e.g. the SPADES (Promoters Agroecological Information and Communication), in addition to the activities of the Information Centers (Call Centre) to support their affiliated agro ecological organization the AOPEB. At the same time, these information centers are part of the ICT NETWORK AOPEB Agroecology. The centers generate information regarding access to and exchange of information on prices, supply and demand of the market, with an emphasis on information and media which are relevant and accessible for small producers in rural areas.

Satisfaction

As shown in the graph, the satisfaction with the services of the project is high from 2003 to 2008, after which has decreased slightly in 2009 (90%). Nevertheless, 90% is a fairly high project satisfaction. The fact that the percentage is decreased compared to the previous years, could suggest that there is a need to deepen the theme by using in focus groups with users, to discuss what is happening and to



adjust the project according to its objectives.

The satisfaction indicator measures satisfaction with training, quality and cost of information and service, website, and other aspects (including Internet access). The following views of the users can be highlighted:

- I joined the group SPADES
- I could train
- I learned to manage the computer and everything else well
- I learned many things about computers and internet
- I have participated since the beginning of the course until it culminated
- Because I needed to know better

The projects include a series of information services available to users, mainly technical support services (87% are very satisfied). Pricing information of national and international markets, new production techniques that allowed them to be more productive, are examples of the received services through the Internet, telephone, etc. 82% of the end users was highly satisfied with the quality of the received information.

Awareness

Awareness is increased for the year 2008. The outcomes suggest that the efforts to provide timely and useful information allow producers to make better decisions with respect to production and marketing. Among their views, the following can be highlighted:

- I get new information, know new people from other organizations, exchange more ideas to benefit the organization
- Because I help my colleagues in my organization with their e-learning and I help them with Windows Word and the internet
- I could see the computers of telecenters and I could learn all of the ICT

- I can know the machines and the internet and organic products in the world

Empowerment

Empowerment is an impact indicator that is one step beyond awareness. Empowerment in 2009 is quite significant (78%), suggesting that people have been able to acquire new knowledge and skills and that they could even help others who needed it. Their views are:

- I learned to get along and manage my own income
- I could find information on wine prices in capital cities in order to discover our wines as sold elsewhere for that price, so that they can not hide us not deceive us
- I can see the prices of my products on other sides of Bolivia on the internet
- I can see the calls for AOPEB by email
- I have my email
- Already I could see the prices of several varieties of honey producing and selling in the country

Economic and sector impact

The projects of livelihood opportunities seek to improve the level of income. The impact on the economic issue is 55%, which is an indication of the percentage of people who have improved their income levels through the projects. With the exception of 2008 (which reached 75%), previous years the economic impact of agriculture sector has remained around 50%, suggesting that this subject should be studied in greater depth with End Users in a focus group. While the topics of awareness (85%) and empowerment (78%) are quite significant, users suggested:

- Further support and call center computers for my organization
- Please arrange more ICT courses
- IICD helps us to have more training, thanks for teaching the ICT
- To get a deeper understanding of the companions
- Continue please with the development of our skills, this is very good for our families
- Continue to train engineers
- We continue to support and to enable us to sell our products better
- Let him return the computer courses to teach more. You can not practice a lot in a few days

- I don't miss the group of SPADES when they encounter elsewhere

In 2009 AOPEB has concentrated its work to ensure the connectivity of its information centers for the installation and operation of its call centers. The strategies include the development of the skills of advocates of Information and Communication Agroecological "PICA's", to ensure sustainability through capacity building and training strategies. The end users of the sector, are eager to receive more support and computers, more training and secure access for producers in more remote places apart from the information centers.

During the focus group themes 2009, members of project teams have discussed the success factors of ICT projects in agriculture:

- Effective and timely information
- Exchange experience of information and knowledge management
- Replicas, and trainings
- Facilitate and promote the exchange of information between virtual or face-to-face users

4. Using the evaluation system for the program in Bolivia

In the focus group the importance of better understanding the usefulness of the evaluation system that was developed and implemented by IICD organizations in Bolivia was discussed. At this time the system is used to:

- Measure impact and perception (external site).
- Show the results of institutional assessment of projects with the financial report
- Fulfill the potential need to know how to exploit a demonstration of achieved results.
- Determine progress, achievements and difficulties.
- Plan of activities
- Make adjustments to the project M & E data, to increase the amount of focus groups with users. M & E results show us whether we are doing well or we're getting off, so that the project can remain objective. Feedback of results for the reorientation of the processes, in order to pursuit the objectives of the project. Make adjustments to the project and direct the project to the users needs)

- Demonstrate the institution in which ICT is the pillar of the HR training
- Show that M & E documents are input / evidence of the impact on future results and on financial proposals.
- Witness that ICT helps to empowerment. Ex AOPEB has generated synergy of peasant to peasant.
- Organize focus groups with users as part of farmer to farmer training (avoiding extra costs).

You can use the system:

- For the development of new proposals, using the supporting actions that have been performed.
- To share the report with the organizations, the institution will see that the work that should be performed is beneficial and they will see that the suggestions of the UF (internal evaluation) are taken into account.
- To share the results in institutional presentations.
- To publish on the Web page. Ex CIDOB will publish project information including budgets as part of public transparency.

The International Institute for Communication and Development (IICD) is a non-profit foundation that specialises in information and communication technology (ICT) as a tool for development. IICD is active in Africa and Latin America where we bring about technical and social innovations that create and enhance development opportunities in education, governance, livelihoods, health and the environment. For maximum impact we work closely with partners from the public, private and non-profit sectors. Our aim is to help our local partners – teachers, farmers, health workers, local government officials and civil servants - to formulate and implement their own ICT-supported development policies and programmes.

IICD was established by the Netherlands Ministry of Foreign Affairs in 1996. Our core funders include the Dutch Directorate-General for Development Cooperation (DGIS) and the Swiss Agency for Development and Cooperation (SDC). For more information, please visit www.iicd.org.