CONNECT 4 CHANGE

FINAL REPORT 2011-2015

CONNECT 4 CHANGE

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Chapter 1.1

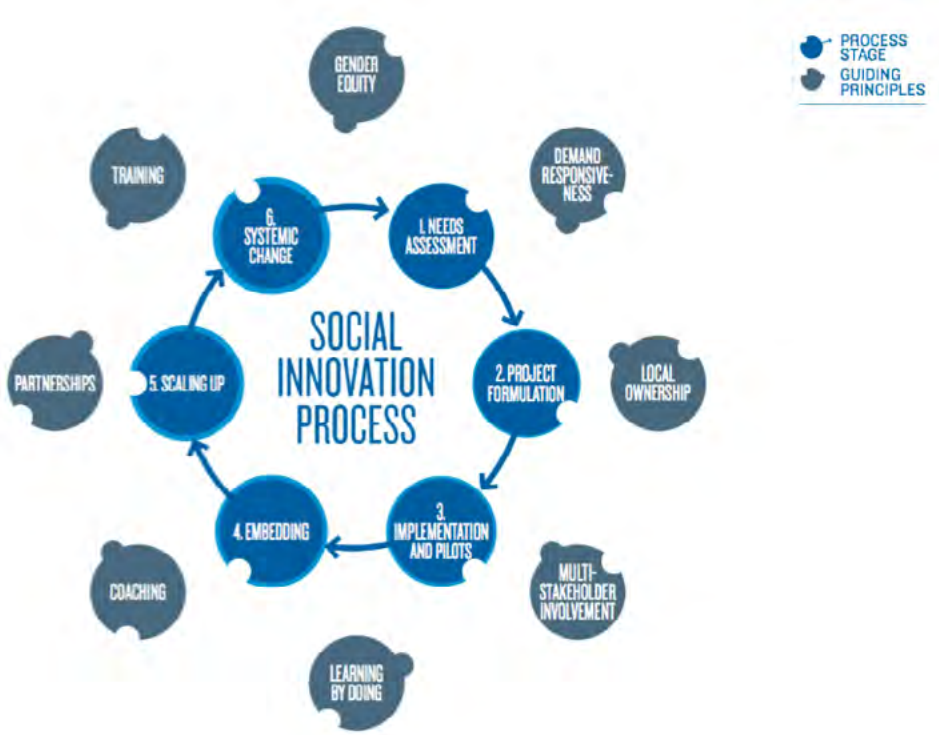
IMPLEMENTATION 2015: SOCIAL INNOVATION PROCESS

Over the last 5 years, the Connect4Change (C4C) consortium has focused on the integration of Information and Communication Technology (ICT) in programmes and organisations to increase the quality, effectiveness and relevance of development interventions in economic development, education and health in 11 countries in Africa and Latin America. In this final report, the consortium describes implementation, results and lessons of not just the final year, but the collected outcomes of the entire 2011-2015 implementation period.

Consortium members collaborated in three sub-sector programmes (Health, Economic Development and Education) based on the complementarities between consortium members:

- The sector-specific knowledge and expertise of Edukans, Cordaid and ICCO in education, health and economic development respectively.
- The knowledge and expertise on how to integrate ICTs sustainably in programmes, institutions and development processes using proven methodologies, facilitation and strategic advice by IICD.
- The innovative approach of Akvo in public reporting conducted by partner organisations, contributing to transparency in development cooperation and the development of new mobile information gathering.
- The set up and implementation of the mobile (bulk texting) component in C4C programmes by preferred partner TTC Mobile.

The main approach used by C4C is the **Social Innovation Process**, an approach tried and tested by IICD over the past decade, which works from the core problem, looking at the people, their organisations, and the ICT-enabled solution - in that order. This way, ICT is not a stand-alone intervention, but rather it fits existing organisational structures and socio-cultural and psychological needs of the end users. The picture below depicts the different aspects of the Social Innovation Process. It also shows the different interventions per phase: a Round Table workshop at the start of the programme when the need are identified, followed by the formulation phase that starts with a Solution Design workshop. During the piloting and implementation phase, training, coaching and mentoring services are offered to partners and finally, in the embedding, scaling and sustainability phase the focus is on training related to Change Management. The end goal of the Social Innovation Process is systemic change: the effective and sustainable integration of ICT in the three sub-sector programmes.



The first 6 months of 2015 marked the final phase of implementing the projects, therefore the main focus for the C4C alliance was on:

- Continuing with the implementation of the project activities and supporting our local partners in order to reach results.
- Implement sustainability strategies for the three ICT4D sub-programmes after the end of C4C in 2015 (i.e. fostering embedding of projects locally, building capacities among local partners for business plan writing and development, marketing/promotional strategies, adequate monitoring of project effects and outcomes, which is valuable content for proposal writing for resource mobilization purposes, among others).
- Supporting the C4C evaluation and impact teams to examine the effects and impact of C4C projects in their communities.
- Learning for the future, by building up on our knowledge base and experience developed in ICT4D.

The implementation process, as in previous years was reviewed using surveys that local C4C partners fill in. In these surveys, partners share their thoughts on the support provided by the alliance partners and on the status of the process of implementation. 333 questionnaires were collected during the implementation period (2011-2015), in which, on average, 75% of partners are (very) positive regarding the different kinds of support provided by C4C. Especially high levels of satisfaction are found for technical advice (85%), strategic and operational advice by the IICD country manager (85%) and technical training (91%). Chapter 2.6 contains more details on partner's views towards the support received by C4C in the last phase and in the overall implementation period.

External evaluations and impact studies took place in late 2014 and early 2015. They examined the effects and impact of the C4C projects and supported learning processes. A description of evaluation and impact assessment activities can be found in Chapter 1.6, more on the results and lessons from these studies is to be found in chapter 2.2.

Over the last 5 years, the C4C alliance aimed to improve income and employment opportunities for small-scale producers and entrepreneurs, improve quality and equity of education systems and improve effectiveness and efficiency of health care systems using ICTs. This report explains how C4C tried to accomplish this, what happened and what lessons we took away.

- In chapter 1.2, we explain what happened during implementation in the different countries and how the MDG results measured up to the goals C4C set when the programme started out. This chapter also discusses successes and challenges in the countries as well as sustainability.
- In chapter 1.3, we feature ICT and gender in the different sub-programmes as well as some major lessons learned in this respect.
- Chapter 1.4 focuses on capacity building – how this was approached in the different countries and what it resulted to in terms of people trained. We also look into the networks and into the developed capacities with partners from the different sectors.
- Chapter 1.5 shows the organisational aspects like the governance structure, CEO salaries and efficiency.
- Finally, in chapter 1.6, we look at the activities that were done for the learning agenda.

Section I of this report focuses on implementation, on activities and results. Section II is more analytical, and focuses not on what happened, but rather on why it happened and what can be learned from it.

Apart from the data taken up in this report, the website provides a comprehensive description of the programmes and projects ran by C4C in addition to project updates, insightful local partner blogs, and capacity development highlights. The C4C website can be accessed from http://www.connect4change.nl.

Chapter 1.2

RESULTS IN THE SUB-PROGRAMMES AND THE MILLENNIUM DEVELOPMENT GOALS

ICT4Economic Development sub-programme & MDG results (2011-2015)

Goal: *'Improved income and employment opportunities for 650,000 small-scale producers and entrepreneurs organised in 200 producer organisations supported by 24 partner organisations in 6 countries through improved productivity, better access to markets, financial services and institutional development by using ICT'.*

The C4C ICT4Economic Development programme is implemented by ICCO and IICD, in cooperation with local (implementation) partners and (locally-based) technical advisors. The programme facilitates the development of ICT solutions in economic development together with a variety of stakeholders.

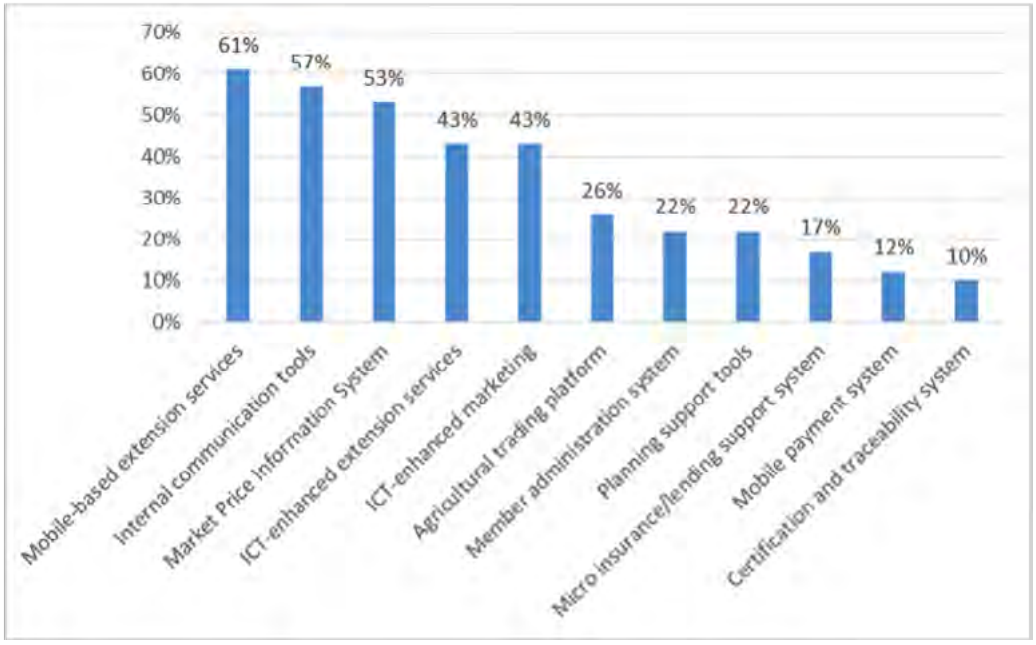
In 2011, all sub-programmes in Economic development (6 countries[I]: Peru, Bolivia, Mali, Burkina Faso, Kenya and Ethiopia) kicked off their projects with a Round Table workshop, followed by a Solution Design workshop that helped partners shape the solution most suitable for their specific needs, in their specific context. From these workshops, the following priorities were set:

- Improving access to **market information** using ICT to improve negotiation power of producers and enhance production planning (information on supply and demand for products).
- Support for the access to and sharing of **information related to production techniques**, crop protection and inputs to increase productivity of producers (agricultural tips, weather updates) using ICT.
- Better access to information and communication about **credit facilities** and related services to enhance access to rural finance (payment reminder and financial information).
- Improving information and communication of producer organisations to support **institutional and financial management** and planning.
- Using ICT for more efficient methods for the collection of **production information** (volumes, quality) at the level of producer organisations to improve planning of production and bulk sales to larger interested buyers.
- More efficient and effective collection and management of information required for **certification of products** to access higher-priced product markets using ICT.

In the 2nd half of 2014, questionnaires were collected at producer organisations implementing farmer ICT solutions under the C4C economic development sub programme. The questions focused, amongst others, on how they used ICT solutions to improve their work. 157 Questionnaires were collected from 148 producer organisations (primarily from Peru, Kenya, Ethiopia and Bolivia) with a total member base of 120,000 (an average of 800 members per organization). 30% of their members were female.

When asked what farmer ICT solutions they used, over half of producer organisations indicated to use mobile-based extension services (61%), internal communication tools (57%) or market price information systems (53%). 43% (also) use ICT enhanced extension services or ICT enhanced marketing. The high percentage for internal communication is especially noteworthy, as this is a solution that did not come up in the round table workshops at the start of implementation (in 2011). Implementing partner organisations gradually discovered that Producer Organisations' internal communications are a real bottleneck and cost factor. Less mentioned are the use of certification and traceability systems (10%) and of mobile payment systems (12%). These percentages reflect the number of organisations involved in certified production (organic, fair trade) and the countries where mobile payments have penetrated the countryside.

I The programme started in 7 countries, but was scaled down in Zambia after 2013 and eventually phased out. This programme was supported by IICD.



Simple mobile phones are for most organisations still the most important medium with 77% of organisations using feature phones. 75% (also) use desktop computers. 32% use laptops, 15% use smart phones and 3 % use tablets. More on the effect of the use of these tools is taken up in chapter 2.2.

Implementation of the sub-programme in the countries – featured interventions

Descriptions of the implementation of the economic development sub-programme in the different countries can be found in annex 1. In this paragraph, the report highlights two ICT4Economic Development interventions in more detail.

Food heritage on an online platform in Bolivia

MIGA (*Movimiento de Integración Gastronómico Boliviano*) aims to promote Bolivian foods, cooking, taste and gastronomy, and to maintain the country's natural and cultural wealth and diversity. Initiated by cooks, it connects producers from the three climatic zones (highland, valleys and tropics) with restaurants, both of national and local importance, and individual consumers who want to preserve traditional cooking and preparation of traditional dishes. Many of the other C4C partners in Bolivia support this initiative with moral and informational support. A key event is the annual food fair "Tambo", first organised in 2013. In 2015, 30 chefs participate in the fair, cooking in the fair area. Links on the website[II] refer a.o. to the electronic trading platform initiated by CIOEC, RIM.

The availability of a website greatly enhances the visibility of the network and the accessibility of connected restaurants, e.g. for tourists and urban middle class in the main towns and cities. During the first phase of the project with C4C, a virtual platform with new technology was created where information is available about the Bolivian kitchen/cuisine and traditional ingredients. On this platform producers, processors and consumers could interact with each other. In the second phase the virtual platform was redesigned to expand and improve the process of communication throughout the restaurants and canteens value chains. In this second phase, MIGA also integrated a video section, a knowledge exchange page, a message board and the site was adjusted for mobile devices (smart phone and tablet). Finally the site was advertised, for instance via Facebook.

Tambo is the first and largest national food festival, promoted by the Movement of Integration Gastronomic Boliviano (MIGA). *"The Tambo is the national meeting point where gastronomy*

II www.miga.org.bo

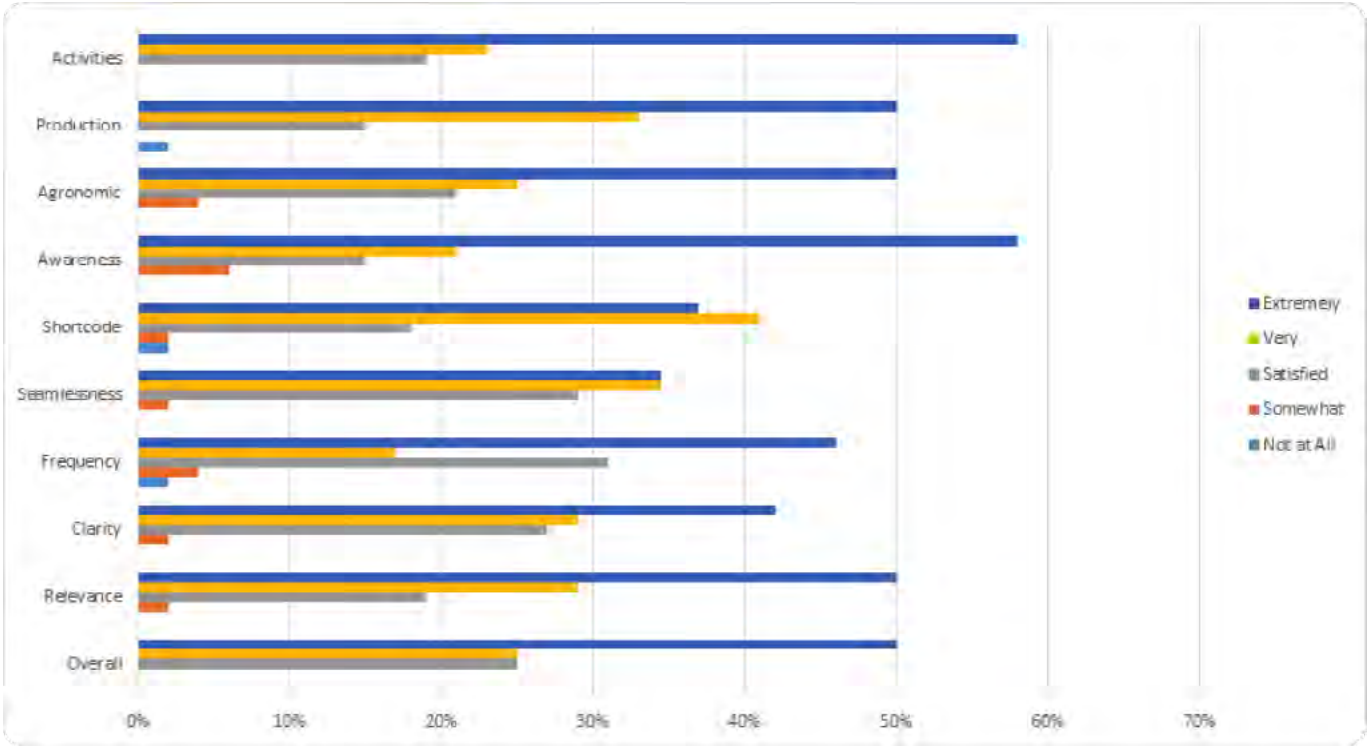
is not the end but the means to reassess the food heritage and cultural identity, through our kitchen, traditions, cultural roots; highlighting the diversity of our products at a party integration to strengthen the pride of Bolivians," said representatives of MIGA. *"The meeting aims to be the reference among Bolivians who are proud of and united by the cuisine and its diversity and biodiversity products and flavours."* It brings together over 100 exhibitors, national and international chefs, more than 50 restaurants from all regions of the country, about 50 farmers, food processors, kitchen utensils artisans and urban gardens' owners.

Knowing when to plant through text messages in Kenya

Like many farmers throughout Kenya, farmers in the Nyanza Region in the west of Kenya faced challenges accessing production and market information. This scenario led to food insecurity and low income level amongst farming households. C4C implementing partner in this region, ADS-NYANZA, has, during the implementation period, focused on a number of bottlenecks in their own operation and in the information flow towards farmers, where ICT could really make a difference. One of their interventions was the use of mobile phones to provide technical production and marketing information to farmers in Nyanza Region. This way, farmers can make timely and relevant production and marketing decisions. In close liaison with Ministry of Agriculture and KARI, ADS is matching the demand for information and supply by translating technical advice into simple text messages. This is then sent through a bulk messaging platform. At the same time, farmers can make queries and give feedback into the platform in order to keep improving it.

In collaboration with TTC Mobile and C4C, ADS-Nyanza used text messages to send information on issues like pest and disease control; information about when to plant and when to harvest; post-harvest handling and information about scheduled trainings and meetings. In Q4 of 2014, 80 farmers, chiefs and village elders were interviewed to give their opinions on the service.

The figure below shows the results of farmers' satisfaction regarding different aspects of the text service. 100% of farmers were (very/extremely) satisfied with the overall sub-programme and updates of activities shared by ADS-Nyanza. 98% respondents were also (very/extremely) satisfied by the seamlessness of messaging between mobile and in-person meetings, the relevance of messages to farmers' needs, the clarity of messaging and the information received regarding production techniques. The short-code functioned (very) well according to 96% of respondents.



The survey also discussed the end of the partnership between C4C and ADS-Nyanza in 2015 and queried farmers' willingness to pay for text messages with agricultural information in the future. Over 86% of farmers indicated that yes, they would be willing to pay for messages in the future. The majority indicated they would be willing to pay between 1 and 3 Kenyan shillings

"We have experienced a great change since the introduction of short code messages through our mobile phones. Before we wasted time walking from homestead to homestead to inform fellow farmers of a meeting, but there has been a great change since we get to meetings on time and number of attendance has increased than before."

Respondent from partner organisation ADS-Nyanza

per message, with outliers being willing to pay only 50 cents and up to 10 Kenyan shillings per message.

ICT4Economic Development MDG results (2011-2015)

Looking at the original goals set in 2011, the C4C economic development sub-programme did quite well in terms of outputs. The "number of small scale entrepreneurs and producers that use ICT to access production and market information" was actually already met in 2014. Due to delays in implementation in Ethiopia and lower than expected numbers of SMS users in Burkina Faso, the total number did not increase compared to end of 2014 data, yet it still is at over 160,000 producers of whom about 45% (over 72,000 producers) are women.

Noteworthy is the really high number of small-scale producers and entrepreneurs trained in the use of ICT: this number is 25 times as high as projected in 2011 and has reached almost 77,000 producers and entrepreneurs by now. This figure can be explained in two ways: Most trainings were relatively straightforward trainings of a few hours or a few days (per year). Furthermore, the registered trainees are generally "end-users" whereas our original plan envisaged this number to primarily incorporate trainers who would then train others. A large part of trainees reported in 2015 comes from local partner PROMUC in Peru, where many women were trained in the use of SMS for information services. This results in a final number of producers and entrepreneurs trained that is actually heavily skewed towards women.

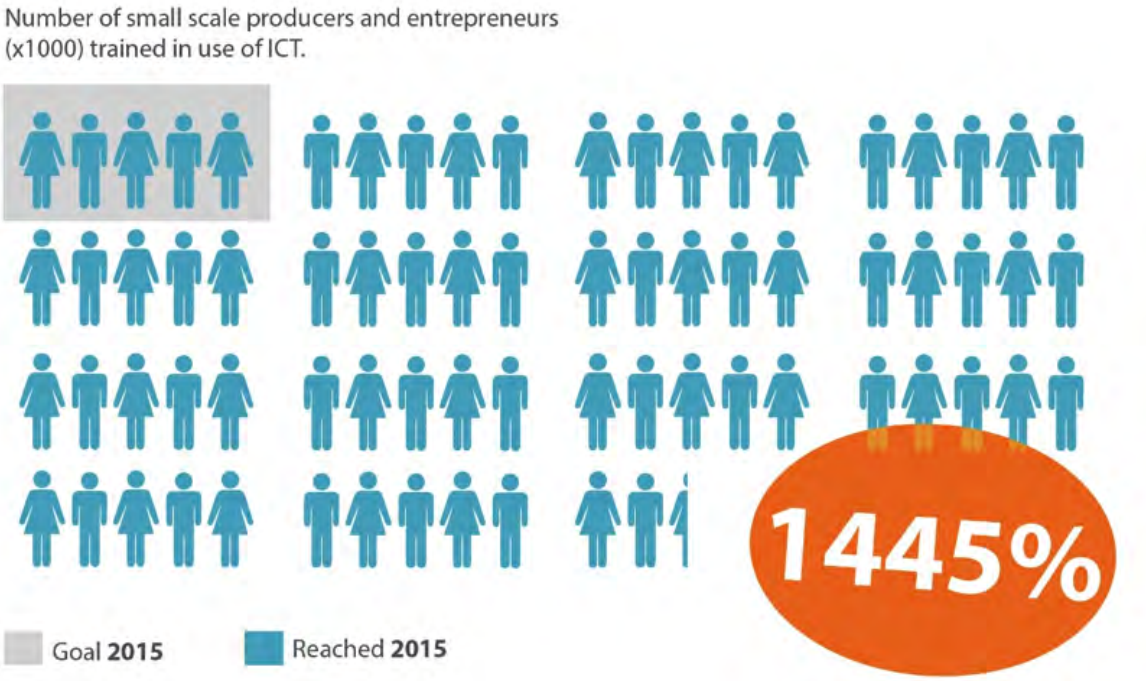
The number of producer organisations that have integrated relevant ICTs for organisational strengthening is also quite high with a total of almost 700 organisations instead of the planned for 200. Producer organisations advised (but not having completed) is over 1300. Effects may actually go beyond: CRCR reports that they circulate price and market information with a large number of sectoral producer organisations in Sikasso, Mali, numbering around 600, while we only counted in those actually being advised on ICTs (250). Through this information sharing agreement, producer organisations are able to closely monitor buying and negotiate fair prices for a large proportion of the regions agricultural produce. Also, RAE and ANPE in Peru, national umbrella platform and producer organisation apex in the organic sector, report large numbers of producer organisations being served with their market information networks.

The number of financial service providers integrating ICTs in innovative rural services deliberately was set quite low in 2011. C4C made a conscious decision to focus on Latin American organisations only. As we can see in the 2014-2015 number however, the sub programme reached a respectable number of 59 organisations. This was mainly due to PROMUC, a national umbrella of savings and credit organisations and rural banks in Peru, counting over 50 organisations that have integrated ICTs such as SMS messaging in their daily operations.

C4C originally did not plan to monitor the number of members of Producer Organisations advised. This number is significant though, as it indicates the number of male and female producers that could benefit from the ICT services, either directly though information from the organisation, or indirectly through better services, more possibilities for giving feedback to the organisation and a generally better managed organisation. By 2015, the number of members was almost 770,000. Of these members, 26% were women - generally, the larger producer organisations appear to have the lowest female membership base.

The number of stakeholders participating in networks lags behind a bit to the number planned. This is partly caused by strategic choices made in some of the countries where, rather than starting an ICT4D network from scratch, C4C and partners decided to use existing networks or other collaborative spaces like workshops or fora. Though in these cases too, organisations exchanged knowledge actively, it is much harder to keep track of the number of stakeholders involved. The network in Burkina Faso ceased to exist, though partners are still interconnected, this too influences the number of stakeholders reported. Finally, not all stakeholders active in collaboration and exchange are taken up in this overview: in Latin America for instance, municipalities are an important partner in network-like activities, yet they have not been included in this overview, as they are not formally a network-partner. For more information on the work of the network, please refer to chapter 1.4.

MDG output results Indicator	Reported 2011	Reported 2011-2012	Reported 2011-2013	Reported 2011-2014	Planned 2015	Total 2011-2015
Number of small-scale producers and entrepreneurs that use ICT to access production and market information (male and female).	4.436	6.578	135.018	**160.620**	160.620	**160.620**
Number of small-scale producers and entrepreneurs that use ICT to access production and market information (only female).	-	-	50.810	**72.286**	70.000	**72.286**
Number of small-scale producers and entrepreneurs trained in use of ICT (male and female).	1.034	6.849	25.840	**42.695**	5.000	**76.667**
Number of small-scale producers and entrepreneurs trained in use of ICT (only female).	-	-	9.313	**26.308**	-	**64.413**
Number of producer organisations that have integrated relevant ICTs for organisational strengthening.	15	599	497	**396**	200	**695**
Number of producer organisations advised on sustainable use of ICT.	5	141	601	**673**	200	**1.113**
Number of financial service providers integrating ICTs in innovative rural services.	2	11	12	**59**	4	**59**
Number of stakeholders participating in networks to share experiences, collect relevant data and lobby for use of ICT in programs.	64	48	50	**39**	105	**40**
Number of members of Producer Organisations advised (male & female).	-	-	120.766	**126.849**	-	**769.984**
Number of members of Producer Organisations advised (only female).	-	-	47.600	**77.153**	-	**203.344**



The outcomes of the economic development sub-programme are stated below. The percentage of targeted Producer Organisations (POs) showing a substantial increase in, either members of POs reached or turnover per member in 2015 is 85% (from 77% last year and compared to the projected 80%). This number is related to the actual number of POs reporting satisfactory increased turnover (163/192 organisations). More details on the increase in members and turnover can be found in chapter 2.1.

The number of small-scale farmer and entrepreneur clients reached with innovative financial services (115,000 by 2015) are mostly clients registered by financial service providers under "PROMUC"(Peru). The 115,000 farmers and entrepreneurs mentioned here is equal to the overall client base of PROMUC – of these 47,000 were trained in the use of the new ICT service and just over 25,000 registered as users of the SMS inquiry service and a few thousand used the "business plan calculation" module recently introduced.

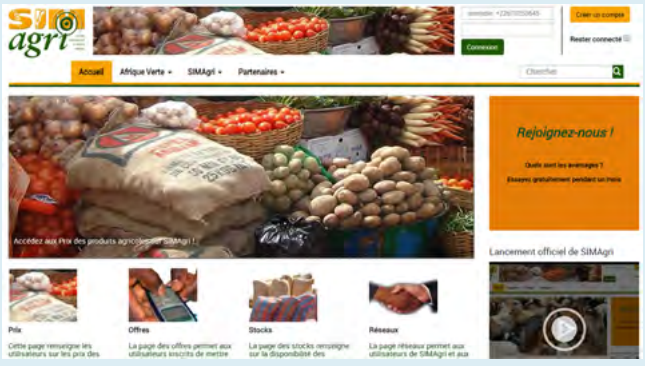
An important number in this last phase of implementation is obviously the percentage targeted producer organisations showing a substantial coverage of ICT costs. This was intended to be at 80%, yet unfortunately only 15% of organisations indicated that this was indeed the case. More on sustainability and what was done to bolster organisations' capacities in this respect, can be found in the "Sustainability Analysis" later in this chapter.

MDG outcome results Indicator	Reported 2011	Reported 2012	Reported 2013	Reported 2014	Planned 2015	Total 2015
Percentage of targeted Producer Organisations showing a substantial increase in, either members of POs reached, or turnover per member.	-	16%	38%	**77%**	80%	**85%**
Percentage targeted producer organisations showing a substantial coverage of ICT costs.	-	14%	15%	**15%**	80%	**15%**
Number of small-scale farmer and entrepreneur clients reached with innovative services.	-	1.696	43.014	**42.471**	50.000	**115.000**
Number of countries where partners have been involved.	-	7	7	**7**	7	**7**
Number of Producer Organisations	-	-	182	**184**	-	**192**
Actual number of Producer Organisations reporting satisfactory increased turnover.	-	-	69	**141**	-	**163**

Indicators marked with (-) were not part of the monitoring plan in some of the years.

ICT4Economic Development successes

Featured product

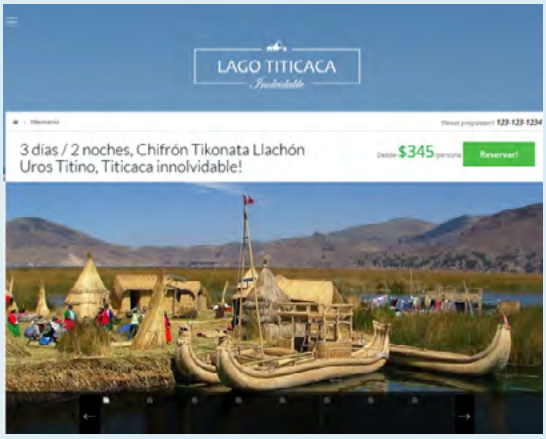


In Burkina Faso SIM-Agri - http://www.simagri.net - a platform for price information and food products marketing was launched as a joint activity of Table Filière Karité (the national Shea Sector umbrella) and *Afrique Verte*. The project enables users to access the platform with mobile phone text messages to connect supply and demand, already reaching over 4,700 farmers. The volume of trade facilitated with this platform was very large in the year 2014, over 92 Million Euro. For the first time in its long history of facilitating price information sharing, *Afrique Verte* is now the full owner of the software and all data. Another important feature of the project is their cooperation with all three mobile telecom providers in the country. They pay a small sum per SMS to the platform owners.

In **Bolivia**, local partner CIOEC has managed to clearly show the impact on farmers' incomes: CIOEC's renewed electronic platform has more producers using it than before (25 new producer organisations). By integrating their Market Information Network with a *Vusion* platform (allowing for back-and-forth text messages), they are now able to deliver more complete services for exchanging information between buyers and sellers. CIOEC thus combines a sustained process of sales of agricultural and processed products with a very important database about associations of producers, volume of production and prices. At the same time, they are closely connected with the government, at this moment a very important client of the producers. Sales generated through the use of the platform and texting represent a growing opportunity for producers as well as future possibilities to explore the export market. All of this provides not just a short-term opportunity for farmers to grow their incomes, but due to the sustainable business model, it shows much promise for their future incomes too.

Featured Product

In **Peru**, Coordinadora Rural launched Titicaca Inolvidable – http://punoinolvidable.com/ - a website to support entrepreneurs in eco-tourism around Lake Titicaca in the highlands. Direct booking on their website by tourists allows these entrepreneurs to cut out travel agency fees, around 50% of the tourists' expenditure. Through direct communication the entrepreneurs start to understand the clients' wishes better, which allows them to innovate. Furthermore CR helped the entrepreneurs get in touch with each other, adjusting the offered services to the "package" that the clients want.



ICT4Economic Development challenges

In **Bolivia**, local partner Fautapo faced problems related to the context of some of the quinoa producers: only some of their original producers would benefit from the services due to lack of electricity and connectivity, Fautapo had to seek new beneficiaries in other organisations of smaller producers. This has taken a long time but it is expected that by the end of the year, 4 new organisations will be using the system.

In **Burkina Faso**, partner Nununa did not succeed in getting the full C4C financial support that was planned for them, due to a backlog in reporting and proposal submission. The partner Fondation Faso-Biocarburant had to stop its activities, related to financial problems the holding Faso-Biocarburant ran into in 2013. The 'soulevement populaire' in 2014, resulting in the flight of president Compaore, resulted in a temporary slow-down of activities, but did not affect the sub-programme profoundly.

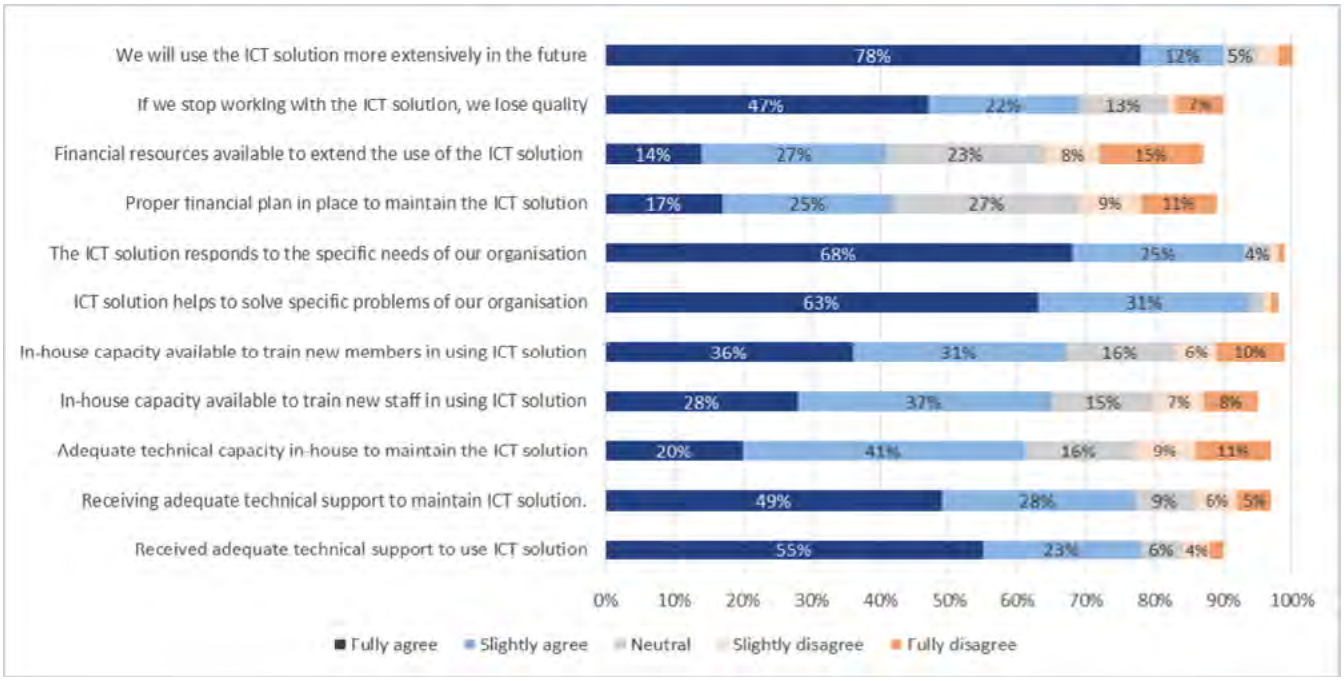
In **Ethiopia**, price information system Terra was completed late for the implementation of trainings in 2015. The local partner consortium of NGOs encountered auditing problems, inhibiting C4C to release funds.

In **Peru**, partner IAA faced some problems in the process of scaling up the process of training. They had been too optimistic in their planning of activities and had set too many goals, something that hindered the project. In 2015, a capacity development workshop on business models and e-marketing strategies for the 5 Peruvian project partners (of which IAA) took place. The workshop enabled IAA to: formulate a more realistic (lean canvas) business model to link IAA producers to markets; reflect on strengths and weaknesses of their ambitious plan and get input from peer C4C partners on how to re-adjust it; learn to use new tools and tricks to adapt to change. E.g. Given that they want to better commercialize the agro-ecological products of smallholder (member) families, they learned to produce digital marketing campaigns using standard platforms online.

In **Mali**, the Tuareg rebellion and coup d'etat in 2012, followed by the international intervention in 2013, had a delaying effect on the implementation of the both sub-programmes in Mali – but as most partners were located in the southern province of Sikasso, the partners' activities did not suffer too much.

Sustainability analysis

Sustainability was a key focus area in 2014 and 2015 in all countries of the (sub-programme). As described in the first paragraph of this chapter, mid-2014, 157 questionnaires were collected at producer organisations implementing farmer ICT solutions under de C4C economic development sub-programme to see how they used ICT solutions. This same questionnaire also targeted the respondents' opinions as to the sustainability of ICTs at their organisation.



The questionnaire shows clearly that ICTs contribute to the organisation: partners indicate that they will use the ICTs more extensively in the future (90% of partners), that the ICT solution responds to specific needs of the organisation (93%) and that it solves specific problems of the organisation (94%). Partners are convinced they received adequate technical support to use (78%) and maintain (77%) the equipment. They are also somewhat confident in their skills to train new members in using the equipment (67%), and slightly less so in training new staff (65%). The main challenges for the farmer organisations with regards to the ICT solutions seemed to lie with maintaining the ICT solution (technical sustainability – 61% of partners) and in the financial plan for maintaining the ICT solution (42%) and financial resources to extend it (41%) – financial sustainability. It is important to note that some bias in this site survey is inevitable: some producer organisations may indicate lower-than-accurate numbers on financial aspects, in fear of receiving less donor funding. In practice, C4C saw partners making sure the essentials of ICT infrastructure being maintained, though 'extras' like an (expensive) permanent ICT officer or non-essential equipment sometimes does suffer from budget cuts after donor support stops.

Within the different countries, many activities took place throughout the implementation period that focused on business models, technical capacities for sustainably maintaining the equipment and collaboration with commercial parties and government to maintain services. Some examples from this year were:

- In **Kenya**, an important aspect of the December 2014 learning workshop was the discussion on the possibilities for seeking evidence of the sub-programmes effects as well as sustaining them in the longer term. Partners made plans for action research on the results of their projects (most useful for collaboration with donors or government). During the same workshop, partners worked on Business Model Canvasses for their projects, allowing partners to think about their customer segments, cost structure, value propositions, etc. and discuss them with other partners and an expert on the subject. The Kenya partner consortium reports that by 2015, 25% of ICT costs are covered from non-grant sources, such as farmers individual payment for SMS based information, and coverage of costs by community of district government funds.
- In **Peru** PROMUC charges a fee to "loanees" as a top-up on the interest rate, to pay for SMS reminders or information requests on outstanding balance. In Peru and **Bolivia**

the e-commerce platforms that have been launched or are ready to be launched have in-built methods of ICT cost recovery. Here sustainability will depend on the increase of volume traded.

- In **Burkina Faso**, different workshops took place to discuss further sustainability with partners: there was one on the lessons and good practices from implementation and one of resource mobilisation. Partners were also trained in further technical maintenance of the SMS platform, so it will remain operational. Partner Nununa, a 4700 member women Shea-producer organization from Burkina Faso has been able to absorb all ICT costs in the operations of the federation. In fact the staff calculated that ICTs saved high costs for communication, which used to depend on persons travelling from chapter to chapter for all meetings and operations. Even SMS messaging is much cheaper than the old telephone calls over land-lines.

For more information on training activities related to sustainability, please also refer to chapter 1.4.

ICT4Education sub-programme & MDG results (2011-2015)

Goal: *'Improved quality and equity of the education system supported by at least 25 partner organisations for 6 000 teachers and managers of 250 education institutions and for 150 parents associations/grassroots education organisations in 8 countries through the integration of ICT in primary, secondary and teacher education and vocational training with a special focus on empowerment of women.'*

In 2011, all sub-programmes in Education (8 countries: Bolivia, Peru, Ethiopia, Kenya, Uganda, Ghana, Malawi and Zambia) kicked off their projects with Round Table, followed by a Solution Design workshop that helped partners shape the solution most suitable for their specific needs, in their specific context.

The C4C ICT4Education Programme is implemented by Edukans and IICD, local (implementation) partners and (locally-based) technical advisors. The programme facilitates the development of ICT solutions in education together with a variety of stakeholders.

Programmes differ among countries – resulting from the different Social Innovation Processes (Round Tables and Solution Design Workshops) taking place in each country. In Ethiopia, Kenya, Uganda and Ghana, the programme has developed and implemented information systems for school management. In Ghana, Ethiopia and Uganda, the C4C programme includes teacher training in Active Learning, based on a methodology developed by the University of Amsterdam in cooperation with Edukans. In Ghana, Malawi, Kenya and Zambia, the programmes include improving vocational training through ICT. In Zambia, Uganda, Kenya, Ghana, Malawi and Bolivia TTC Mobile supported Education partners with SMS services/mobile phone programmes. In all 8 countries, ICT is used by teachers to design teaching and learning materials. This improves, enriches and makes lessons more attractive for pupils.

Key areas where ICT solutions have a large impact on the quality and relevance of education:

- Design and improve the quality of (interactive) digital teaching materials in primary education and vocational training.
- Enhancing the quality of teaching and learning methods (e.g. active learning, use of interactive whiteboards).
- Increased efficiency and effectiveness in school management (e.g. digital school management systems).
- More participation of parents in planning and monitoring the quality of teaching and learning.

Challenges faced in most of the countries are:

- A high turnover of teachers recently trained for this programme; continuous training is needed;
- The lack of dependable power from the grid, regular power cuts; this affects the sub-programme and the equipment negatively;
- The lack of internet connectivity, or very expensive connectivity in remote places; C4C offers off-line resources in these cases;
- The actual use of ICT in the hands of the teachers and application by students is a lengthy process;
- The possibilities for scaling up the reach in some challenging environments.

They will be discussed in more detail below and in chapter 2.2.

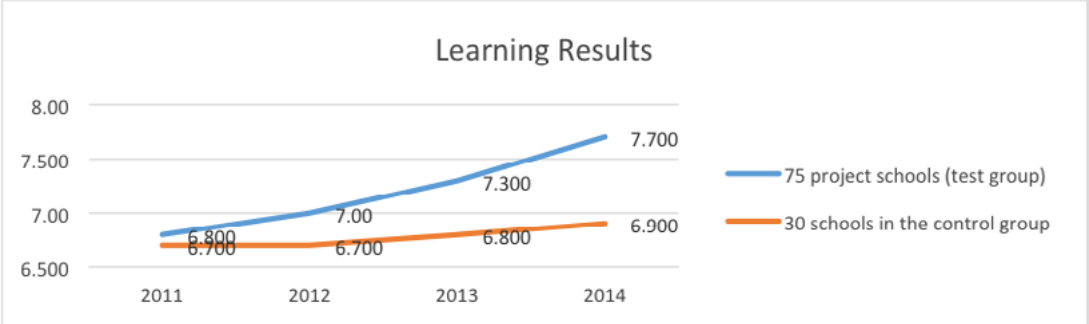
Implementation of the sub-programme in the countries – featured interventions

Descriptions of the implementation of the economic development sub-programme in the different countries can be found in annex 2. In this paragraph, the report highlights two ICT4Education interventions in more detail. The first featured intervention highlights the sub programme in Ethiopia, which shows an interesting mix of ICT components and pedagogical components – and the effects it had on the students. The second intervention highlights how the education sub-programme and its partners keep developing new solutions – through an innovative new pilot in Malawi with some promising first results.

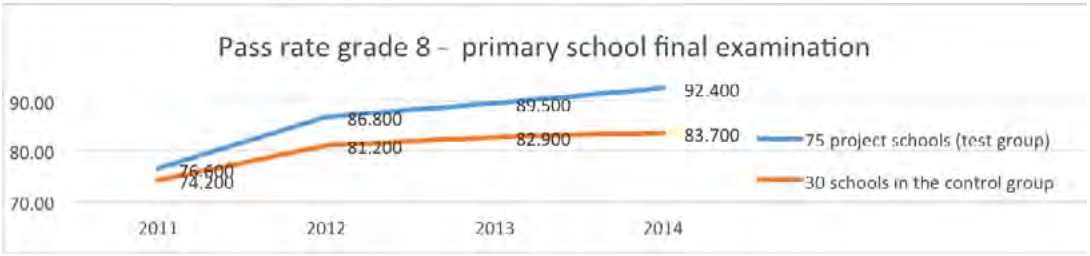
The effects on learning in Ethiopia

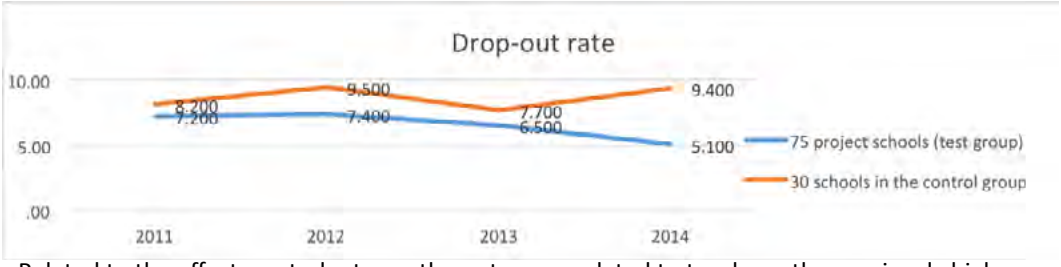
"Improving the Teaching-Learning Processes and Educational Management through ICT" is a project aiming to enhance the teaching learning process and educational management of 75 schools and 3 Teacher Training Institutes (TTCs) in 3 regions of **Ethiopia**- Afar, Amhara and Oromya. C4C supported local partners in installing computers at the schools, the development of a School Management Information System and in training teachers in the use of video for reflection and improving teaching methodologies ('active learning').

In a study to unearth the outcomes of the project, data was collected annually on three basic indicators: learning results, drop-out, and pass/success rate. This data shows that the C4C teacher training programme has had a positive effect on the learning outcomes of students, as well as on the completion rate. The graph below shows the results of pupils at the project schools and the fact that their learning results (grades) went up over time – this effect becomes even more noteworthy when compared to the students in the control group, who show no significant change in their learning results.
The 75 project schools also performed better when it comes to the question of how many pupils leave school with a certificate. Between 2011 and 2014 we see an increase in students successfully passing the final school exam, from 76,6 % in 2011 to 92,4% in 2014. The control schools show also progress between 2011 and 2014, but far less substantial.



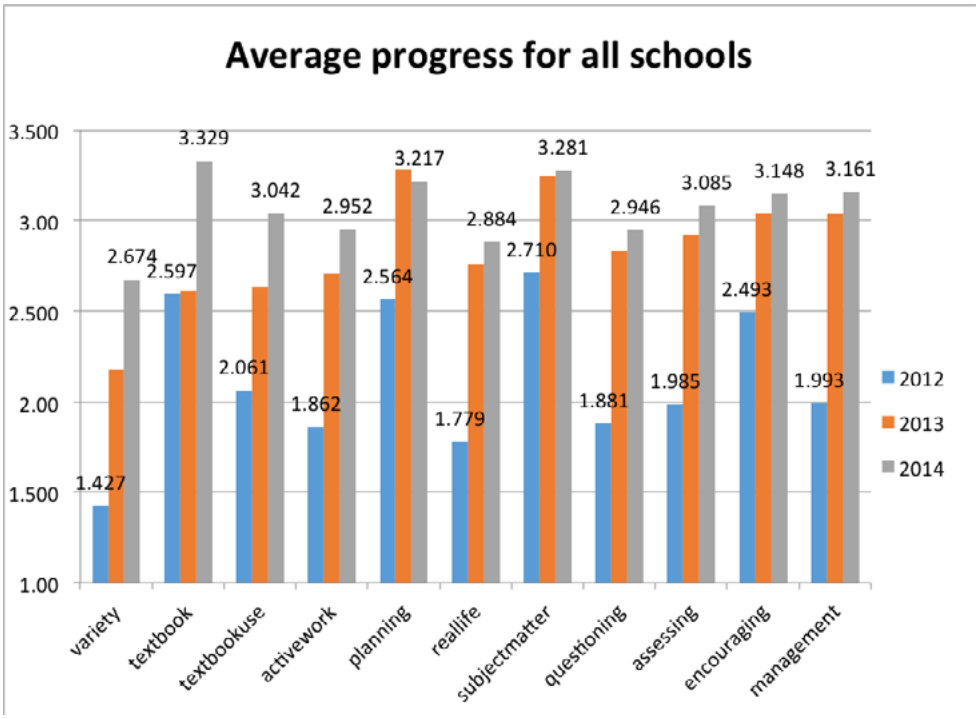
The C4C teacher training project also made a positive impact on reducing the number of children dropping out of school. The percentage of early school leavers (at the 75 project schools) decreased from 7,2% in 2011 to 5,1% in 2014. Measurements at the control schools show a slight increase in dropouts from 8,2% in 2011 to 9,4% in 2014.





Related to the effect on students are the outcomes related to teachers: the previously high turnover of tutors at teacher training colleges went down to less than 20%. ICTs have the power to connect professionals to the world outside – this is an especially important perk for teachers and tutors at remote schools, who are often not eager to be stationed at these schools for lack of facilities and lack of contact with friends, family and possibilities for development. ICTs enable teachers to work more professionally and remain connected with others. C4C has seen this affect the motivation of teachers more often – in the case of Ethiopia, it is also reflected in the decrease in turnover.

An estimated 75% of the College tutors and primary school teachers apply active learning in their daily practice. Every year, the lessons of these teachers have been observed according to a standardized list of indicators on student and teacher activities and marked on a 4-point scale. The graph below shows the progress of teachers and students clearly. We see for instance that students use much more variety in their learning activities, that teachers are applying better questioning (using open questions and giving students room to think and explore the subject) and that they are making more connections to real life practice in their lessons.



More on the effects of ICT on learning and teaching can be found in chapter 2.2.

Tablets as collaborative learning spaces in Malawi

Continuous innovation remains crucial to addressing the needs of both students and teachers – as previous studies in ICT4Education show that interventions tailored to individual needs often prove effective. In Malawi C4C piloted the use of *TeachTabs* and *LearnTabs*: specially designed tablets for educational use that could address the problems of educational resource shortages and overcrowded classrooms of sometimes 120-150 students in one classroom.

The pilot took place at Tsabango Primary School among 150 students from grades 5 and 6. 14 teachers were involved in the introduction of a bi-weekly 'tablet class' in which the students used the tablets in one of the subject classes with their teachers. Different types of tablets were piloted, in a setting which connected the tablets to a local network – allowing for instance the teachers to 'broadcast' power points and the students to participate in quizzes and look at videos. The pilot was monitored through a baseline survey and surveys after the 1st and 2nd term for the teachers and focus group discussions after the 2nd term with students.

"The most exciting part of my work as a teacher is that now am able to prepare my lessons on the tablet, I can not carry a lot of books with me when going to work because all the books are in the tablet and I can interact with learners using the tablets"

Teacher at pilot school

Tablets have certain advantages that make them quite interesting for the setting of many Malawian schools. They are portable, low energy, affordable and offer interactive capabilities. The *TeachTabs* and *LearnTabs* take advantage of the rapidly dropping costs in ICT hardware, and the software installed allows the teacher and all the students in the classroom to interact simultaneously. This results in a solution not only much more practical but also much more affordable than installing a traditional computer lab or other ICT solutions.

Using the *TeachTab*, teachers can control the whole classroom and monitor what students are doing with the *LearnTabs*. Teachers can broadcast text, presentations, videos or audio to all devices and can interact with and prompt questions to the whole classroom at once using the interactive whiteboard functionality. Using the *LearnTab*, students can work in small groups, collaboratively post answers to quizzes prompted by the teachers or edit the same document or project together.

The *TeachTab* and *LearnTab* effectively multiply the number of teachers in the classroom by allowing the teacher to reach more students at once. The *LearnTabs* can be seen as teachers' assistants: if students work in small groups centred around the tablets, the teacher can discuss lessons and problems with them together, avoiding potentially missing students who are stuck in the back of the class or not paying attention.

For the pilot, C4C collaborated with the Malawi Institute of Education to ensure relevance of the educational materials and local ownership of the project. The educational content on the tablets is based on the digital curriculum as developed by the MIE.

Monitoring and Evaluation was an important aspect of this pilot, in order to make sure the relevance of the tablets for teaching and learning and its effects on teachers and students were monitored. The aim was to learn from this pilot for future implementations. One of the aspects that was seen clearly in the data collected among teachers is that their motivation increased. They felt it improved their status as a teacher and that it made teaching easier, because of the easy access to books and other materials and the easy preparation at home. Taking the tabs home was not part of the initial plan because of security. But when schools started to allow this worked out very well.

"There is a difference in that when the teacher is writing on the board we become playful, but with the tablets the teacher's attention is focused on us"

Student at pilot school

Students too became more motivated, felt it made their learning more enjoyable and that it would prepare them for a future with technology. Teachers saw the tablets as a possible solution for the shortage of resources because of the access to a broad range of materials that now becomes accessible. The dynamics in the classroom change too.

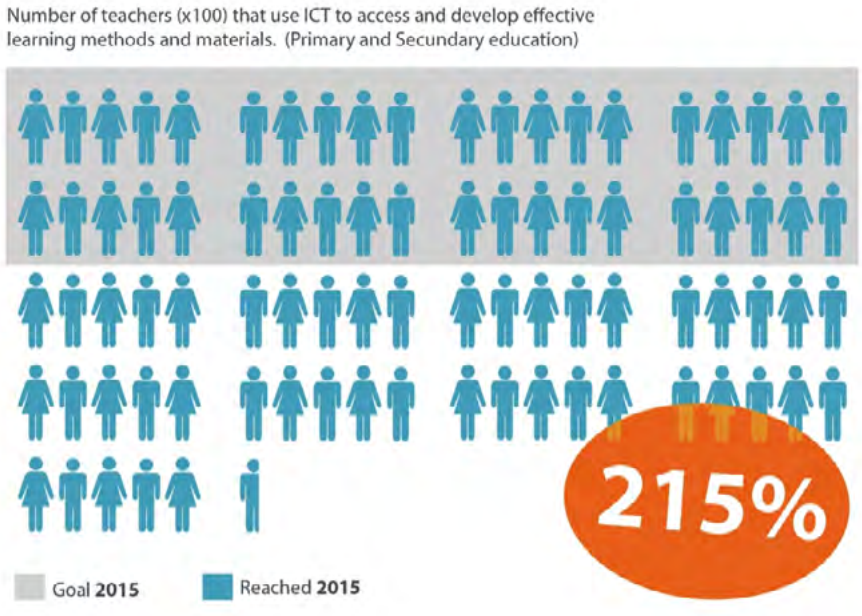
That said, the possibilities that the tablets have to offer are not yet fully used by the teachers. Teachers still tend to focus on the broadcast function, rather than the interactivity modules. It means that more training is needed to fully adopt interactive teaching in their didactic methods. C4C therefore also targeted a teacher training college and provided awareness and training on the use and effect of ICT (tablets) in the classroom. The students on the other hand quickly catch on in using the tablet's different functionalities. Recommendations regarding the didactical training of teachers and the relevance of certain content can now be taken on board for future projects. The pilot project was also nominated as 'ICT project of the Year' for the 2015 Computable Awards.

ICT4Education MDG results (2011-2015)

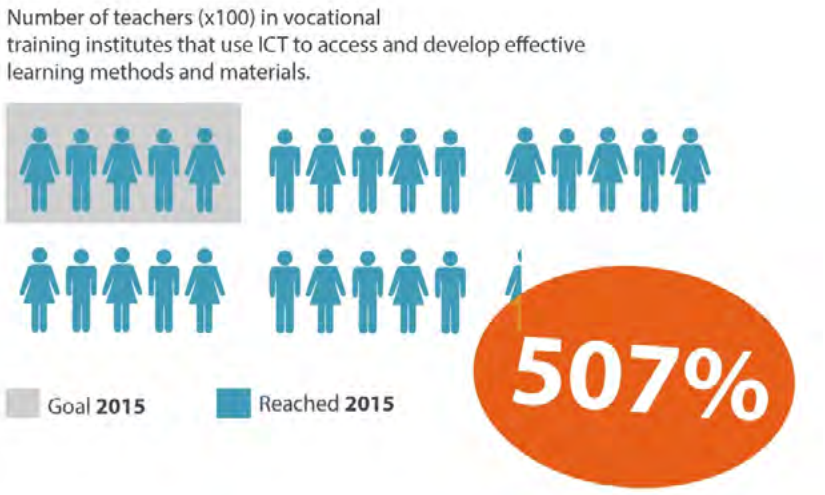
The goals set for the ICT4Education programme in 2011 (in the tables below marked as "Goals 2015") were, in hindsight, quite modest. Looking at the tables below, we see that all indicators were not just reached, but in many cases surpassed the original expectations 2, 3 or even 4 times.

Especially noteworthy are the number of partner organisations that have the capacity to train and strengthen teachers and/or pupils in primary and/or secondary education institutions to use ICT: instead of the planned 20 organisations, the education sub-programme managed to capacitate 66 organisations with these skills (exceeding the original goal with 230%). In vocational training, over 2500 teachers (instead of the 500 teachers planned) are now using ICT to access and develop effective learning methods and materials. In Educational Management, 50 partner organisations (instead of the planned 10) have trained and strengthened not 100, but 466 education institutions to use and institutionalize ICT for educational management. Indicators that were still in progress in 2014 have now all been surpassed. The only exception is the number of stakeholders represented in C4C country-partner networks: while originally the sub-programme planned for 70 stakeholders, the sub-programme managed to reach 65 stakeholders.

PRIMARY AND SECONDARY EDUCATION					
Output Indicators	Reported 2012	Reported 2012-2013	Reported 2012-2014	Planned 2015	Total 2012-2015
Number of partner organizations that have the capacity to train and strengthen teachers and/or pupils in primary and/or secondary education institutions to use ICT.	41	46	54	20	66
Number of primary and secondary institutions that use ICT to access and develop effective learning methods and materials.	248	528	328	250	484
Number of teachers that use ICT to access and develop effective learning methods and materials.	2.449	2.147	6.010	4.000	8.573
Number of students in primary and secondary education that access effective learning methods and materials because of ICT.	68.580	90.697	115.986	125.000	142.185
Number of pupils with increased learning performance due to ICT.	4.470	11821*	32.877		56.147
Number of female teachers using ICT or participating in ICT/training activities.	1.111	1.092	1.429	3000	3.722
Number of teachers (both male and female) participating in ICT/training activities.	2.611	2.205	3.164	4000	8.624
Indicators marked with (-) were not part of the monitoring plan in some of the years.					
The number marked (*) was miscalculated in 2012 and corrected in the 2014 report					



VOCATIONAL EDUCATION					
Output indicators	Reported 2012	Reported 2012-2013	Reported 2012-2014	Planned 2015	Total 2012-2015
Number of partner organizations that have trained and strengthened teachers and students in vocational training institutions to use ICT to access and develop effective learning methods & materials.	9	14	18	10	18
Number of vocational institutes that use ICT to access and develop effective learning methods and materials.	24	51	51	50	89
Number of teachers of vocational institutes that use ICT to access and develop effective learning methods and materials.	174	1.396	1.584	500	2.533
Number of students in vocational training institutes that use ICT to access effective learning methods and materials.	2.947	2.430	10.312	7.500	10.349
Number of female teachers from vocational training institutes that has participated in C4C programs.	47	557	590	300	742



EDUCATIONAL MANAGEMENT					
Output indicators	Reported 2012	Reported 2012-2013	Reported 2012-2014	Planned 2015	Total 2012-2015
Number of partner organizations that have trained and strengthened education institutions to use and institutionalize ICT for educational management.	32	56	45	10	50
Number of educational managers that use and access ICT for educational management.	192	538	831		780
Number of education institutes that use and institutionalize ICT for educational management.	173	302	469	100	466
Number of partner organization has supported teacher training institutions to use ICT for in-service and pre-service training of teachers.	9	19	20	10	25
Number of teacher training institutes that use ICT for in-service and pre-service training of teachers.	8	25	28	25	31
Number of partners that have improved performance on quality and access to their educational service in TVET by making use of ICT.	9	10	28	10	31

PARENTS'ORGANIZATIONS AND ICT4EDUCATION NETWORKS					
Output indicators	Reported 2012	Reported 2012-2013	Reported 2012-2014	Planned 2015	Total 2012-2015
Number of partner organizations that have trained and strengthened parents' associations/grass root education organizations to use ICT for monitoring of education indicators.	15	18	35	10	36
Number of parents / grassroots education organizations that use ICT for monitoring of education indicators.	126	204	229	150	278
Include C4C partner network (1 per country) if this network is active in sharing experiences, collecting relevant data and lobbying for use of ICT in education programs.	7	7	11	8	11
Number of stakeholders represented in C4C country-partner networks.	45	46	62	70	65
Indicators marked with (-) were not part of the monitoring plan in some of the years.					

In general, outcome indicators have shown an increasing trend since the programme started. In 2015, the sub-programme saw an important increase in the number of teachers (in primary, secondary, vocational and teacher training colleges) that apply ICT in their daily teaching practice in a sustainable way: over 11,000 teachers are now doing this (compared to less than 4,500 last year). The growth in the number of representative bodies of parents and pupils that have increased say in decision making, planning, and implementation is also impressive: in 2014 there were 597, while in 2015 there were over 1,300.

In the goals planned in 2011, original outcome targets were set in percentages rather that absolute numbers. C4C in the course of the sub-programme collected hard data. This resulted in said absolute numbers rather than percentages. That said, we can make some calculations looking at the reported output data. For instance: 8624 teachers in primary and secondary school and 2533 teachers in TVET institutes were part of the C4C programme, as well as an estimated 930 teachers (an average of 30 teachers on each of 31 TVETs) makes for 12,067 teachers in total. 11,995 are reported at applying ICT in their daily teaching practice, which makes for 99% of these teachers. This is much higher than the originally planned 80%, though over time, the percentage may diminish somewhat still, as the initial motivation related to training wears off – it will remain important to keep providing follow up and support for teachers.

OUTCOME INDICATORS					
Outcome indicators	Reported 2012	Reported 2013	Reported 2014	Reported 2015	Planned result 2015
Number of teachers (in primary, secondary, vocational and teacher training colleges) that apply ICT in their daily teaching practice in a sustainable way.	3445*	3.884	4.458	11.995	80%
Number of pupils with increased learning performance due to ICT.	1380*	37.185	49.716	64.685	80%
Number of pupils that earn sustainable income 6 months after leaving school / training.	248*	1.124	512	543	60%
Number of representative bodies of parents and pupils that have increased say in decision making, planning, and implementation.	51*	423	597	1.319	80%
Number of national education policies where ICT is integrated, due to efforts of C4C, in cooperation with others.	6	4	20	21	8
Outcome was reported on from 2013 onwards. In the 2013 report, outcome data was reconstructed based on available monitoring data. This was not done correctly. Data marked with (*) was therefore adjusted in the 2014 report.					

For students, the same calculation leads to 56,147 primary and secondary and 10,349 TVET students is a total of 66,496 students in the C4C programme. 64,685 of these have increased learning performance due to ICT. This results in 97% of students in the sub-programme increasing their performance. As above with the teachers, among students too, initial enthusiasm may diminish somewhat over time. It is also important to consider that their learning performance is strongly related to that of their teachers.

ICT4Education successes

Some main successes from the countries:

In **Ghana** C4C partners preluded on the end of the C4C programme, by forming the 'Connect4Change Education Ghana Alliance'. Partners are confident that this will offer more opportunities for cooperation amongst each other and joint fundraising to sustain their ICT services. Also in Ghana, teachers in the education sub-programme expressed interest in acquiring personal laptops. Ghana partners are now considering beginning a laptop scheme for these teachers, as this will enhance their skills and will encourage teachers in the use of ICT in the classroom. Another success was the customization of the school management information system. The Ghana Education Service in the Volta region has expressed interest to implement it beyond the C4C schools.

In **Malawi**, besides the training of teachers, improvement of school management and improved quality of education, best results are on sexuality education. The teacher Trainer Colleges now enhance their pre-service students' knowledge and awareness on sexual health and rights using "The World Starts with Me" (computer based sexuality education). Beyond this, local partner FAWEMA organised a campaign for the promotion of girls' education through ICT. During open days in Mzimba South and Chikwawa girls assured stakeholders that they would be able to do examinations because there was the possibility to print at school, this reduced the examination fee.

The education sub-programme in **Kenya** has been rather successful on improvement of school management and more effective learning in class due to ICT usage. Many schools in remote locations managed to motivate their teachers and save them from tedious administration work by the instalment and usage of School Management Information Systems. Instead of closing the schools 2 weeks before each school holiday to prepare grades and report cards, teachers could now spend this time teaching their class. In the classrooms, schools successfully integrated the ICT in their regular lessons by using simple, low-cost interactive whiteboards.

In the education sub-programme in **Uganda** the introduction of ICT had several effects on the students: more students were enrolled in the first place, they had better grades (school performance in the national exams improved) and there are reduced drop-out rates. This is a result of a better, more professional image of the school and better quality of teaching and, on a more practical note: text messages were used to remind parents of the start of the new term and the payment of school fees. Additionally, 5 teachers from 4 schools were selected by the Ministry of Education for certification of Teacher of ICT.

Monitoring data from **Bolivia** confirms that partners here successfully scaled-up their projects. Over the years, we see more teachers and pupils access effective learning methods and materials due to ICT: from almost 600 teachers in 2012 to almost 5000 in 2015 and from 6800 students in 2012 to more than 45,000 in 2015. Project partner *FE Y ALEGRIA* brought multimedia educational materials to a broader public using the internet, allowing more teachers and students to have access to and use them.

ICT4Education challenges and unexpected developments

By the end of 2014, C4C alliance members agreed on budget adjustments for the final year of the sub-programme. Less funds were allocated to Zambia, due to the low performance of partner organisations. More funds were allocated for successful scaling-up activities in Bolivia, Peru, Ethiopia and Kenya and funds in Malawi were distributed differently. All of this placed funds where they were most effective. As this was the last phase, the alliance also felt a need to harvest and document lessons learned. Therefore, more budget was allocated to learning and documentation.

In many countries where the education sub-programme took place, C4C worked with rural schools with limited facilities. Besides investing in regular ICT equipment like computers and laptops, this meant providing solutions for areas with limited electricity or connectivity, in some cases using thin client (NComputing) computer labs or working with low-energy tablets. It also means throughout assessments of the schools involved, looking at technological options and power needs, but also at interest and involvement of the school staff. The C4C consortium also discussed and weighed, per country or even region, possible benefits for schools against investment costs in rural schools (looking at other schools in the area, sustainability and possibilities for scaling up. Opportunities for integrating ICTs in rural schools fortunately become more abundant and feasible each year: solar panels become cheaper and more innovative, and mobile Internet is more and more available, allowing for relatively cheap Internet connectivity through mobile modems in even the remotest of locations. Though it is an investment, C4C felt it was a needed one: It is often these unconnected schools that can benefit most from ICT solutions.

In **Ethiopia**, the Education Management Information System (EMIS) turned out to be quite complex to use for many people to use on a daily basis. Partners therefore opted to focus on ICT experts present at the schools. Getting teachers to participate in the EMIS trainings also was a challenge at times. Sometimes that was due to the motivation of teachers or the lack of per diems given. Most importantly though, this was due to heavy workloads and other commitments in or out schools. Trainers and implementing organisations successfully managed to change some teachers' schedules to better fit training requirements.

In **Kenya** partner organisation SEED was phased out late last year. Due to institutional problems project funding had been on hold since 2013. It was decided to conclude the project with a final phase out funding through another partner (Computer for Schools in Kenya) to enable training of teachers and school management in two schools where computers had been installed in 2012. Also in Kenya, political instability in 2014 caused discontinuation of activities in Pokot and Turkana. On top of that, local government not taking responsibility for construction led to delays in projects of partners Dupoto and Nairobits; lobbying the Kajiado County government ensured that the construction was completed in 2015 and the projects could go on as planned.

There were large teacher strikes in Kenya and **Ghana**. This has effected programme implementation, but there was no delay. After the strike, activities were re-scheduled and implemented. At schools in Ghana, due to the lack of internet connectivity, the sub-programme focused on the use of offline tools and materials. Though this worked well, some teachers did feel the need for access to the internet. Local partner Savana Signatures does allow teachers to use the Internet at their offices.

Malawi suffered from large floods in early 2015, something that delayed some of the project activities, especially of partner FAWEMA – these activities have now been taken up in September. Other challenges in Malawi are speed and level of trainings: many projects faced an older generation of teachers, who generally needed more time and guidance. The trainings were adapted to their individual levels.

In **Zambia**, C4C unfortunately had to decide to scale the sub-programme down to just three projects (Mpelembe, Mukuba University and Zacode). The other partners were phased out because of very weak organisational development and weak project implementation. Training of teachers went slow and was still taking place in the very last phase, making it more difficult to assess the effect of ICT use in the classroom by teachers and students. Overall, using the ICT equipment by well trained teachers in a way that the quality of primary/secondary/vocational education is improved turned out quite challenging in Zambia.

In **Uganda**, challenges are the high staff turnover with the implementing partners, the need to train school administrators to embed and fully integrate ICT in schools, and the high number of teacher transfers that calls for continuous training of teachers.

In **Bolivia**, partners encountered limitations as to the hardware and software they were using, for one partner this influenced the way ICT equipment could be expanded; another partner had to make changes to the design of online surveys they were using to allow for multiple choice questions. Partners also highlighted their need for continuous support to improve teachers' capacities.

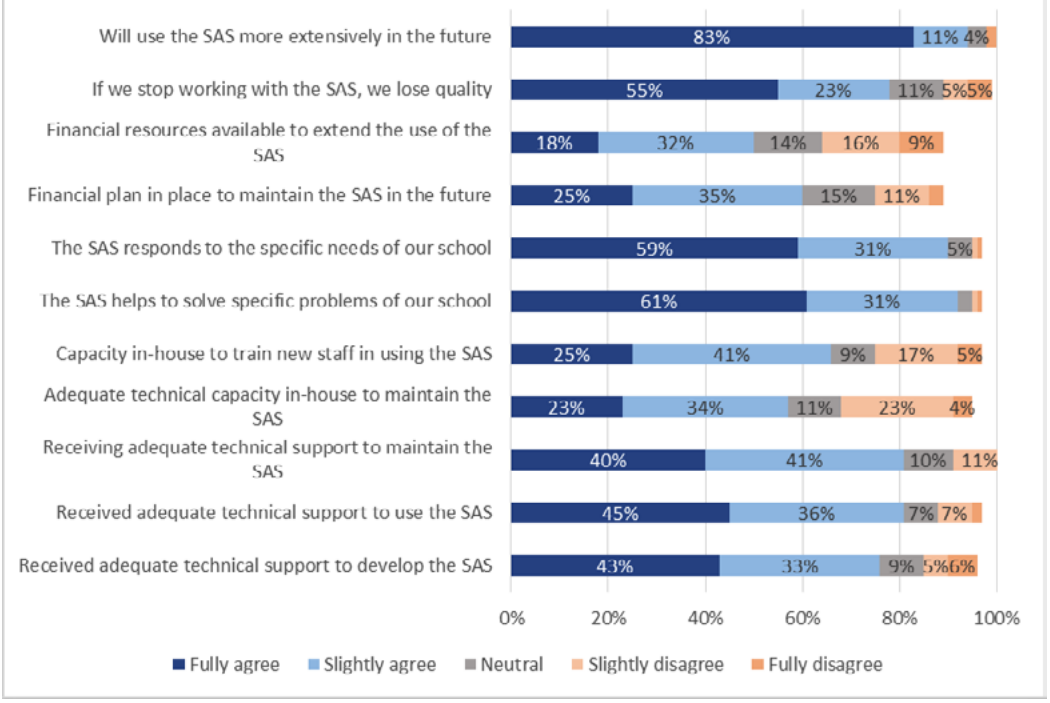
In **Peru** the maintenance of ICT equipment, technical capacity to manage ICT (combat viruses), high turnover of teachers and external problems like slow internet connections and power failures were mentioned as challenges. Some schools identified a further need for teacher training as several students were asking ICT questions beyond the knowledge level of their teacher.

Sustainability analysis Education sub-sector

Sustainability was a key focus area in 2014 and 2015 in all countries of the sub-programme. In the 2nd half of 2014, questionnaires were collected at schools and institutes that implemented School Management Information Systems under the C4C education sub programme. The questions focused on how the schools used the SMIS (or School Administration System (SAS) in the questionnaire), but the questions also targeted the respondents' opinions as to the sustainability of the ICTs at their schools and institutes.

157 respondents from 6 countries filled in the questionnaires. 82% of the respondents were head teachers, 8% were assistant head teachers (10% filled "other" in response to their function) – they came from primary, secondary and junior high schools.

Looking at some different aspects of sustainability and School Administration Systems (SAS) we see the following picture:



Schools are overall quite satisfied with the fact that the SAS responds to their needs (90% (fully) agrees) and that it solves their specific problems (92% (fully) agrees). Schools claim that they will loose quality should they stop using the SAS (88% (fully) agrees with this) and 94% agrees that they will use the SAS more extensively in the future.

Most schools also feel that they have received adequate technical support to use the (71%) and develop (76%) the SAS and that they are capable of training new staff in using it too (66%). At the same time, 57% feels they have the technical capacity to maintain the SAS. Schools are also more hesitant about financial sustainability: 60% has some kind of financial plan in place to maintain the SAS in the future and only 50% says there are financial resources available to extend the use of the SAS.

The Education sub-programme consists of four intervention areas, and "Increased efficiency and effectiveness in school management" (e.g. digital school management systems) is just one of these areas. This data therefore gives an idea how schools perceive the challenges regarding sustainability in this area, rather than the overall education sub-programme. It is also important to note that there are some differences between the perception of schools and the more positive view of partners on this same subject (see also Sustainability in chapter 2.6). There may

be some bias in the way the surveys are filled, meaning that schools may fear to loose donor support when showing too much ability to sustain themselves. At the same time, financial sustainability in the education sub sector may be somewhat more challenging than in a sub sector with a more commercial outlook, such as the economic development sector, as 'return on investment' in education is less tangible or simply longer term.

Sustainability has been on the agenda of all projects since their inception, however, the last 6 months of the sub-programme, C4C, partners and schools undertook a great many activities to further improve technical, organisational and financial sustainability. Some examples are:

- In **Ghana**, 6 implementing organisations partnered up in the Education Ghana Alliance to jointly fundraise for their activities. At the school level, many schools have worked out sustainability plans that include fundraising methodologies such as allowing the wider public to use the internet at a fee and having parents contribute small payments.
- In **Peru**, the wider community was engaged through the participation in a weekly, bilingual radio show on education. Though the Peruvian Ministry of Education was hesitant to embrace some of the new technologies, some successes did materialize: 2 municipalities in the programme area will now invest in upscaling to an extra 50% of the schools.
- In **Kenya**, partners and schools involved media, communities and government: 33 board members of schools were trained in resource mobilization and community support to the schools was gathered through publicity in local media highlighting the advantages of ICT in the schools and though large awareness meetings with over 500 participants. This in turn led to a close working relationship with the county governments – important for future funding.
- In **Uganda**, schools managed to have parents embrace the ICT projects, allowing schools to raise minimal fees for maintenance of ICT equipment. Although the sub programme has ended implementing partners to continue activities in the project sites. Schools use ICTs to remind parents of school fees at the beginning of each term, making for less delayed payments. All C4C partners participated in an ICT4D workshop and training in Business Model Canvas Development, which will help them plan for the future of their projects.
- In **Bolivia** the strengthening of the ICT4D network was a priority-strategy for the sustainability of ICT4education activities in the country. The network managed to enhance the relationship between members contributing to the educational platform *Educando* – something that can contribute greatly to profiling and resource mobilization.
- In **Malawi**, the focus was on both further involvement of communities and lobbying and advocacy activities for more visibility of the projects to the media and the Ministry of Education. The Learning Workshop in Malawi was focused on learning from past activities and on improving project sustainability, planning for independent continuation and on financial resources and needed capacities.
- In **Zambia**, C4C supported Makumbi University in integrating ICTs (tablets) in their curriculum and communication with students. For the university, this was a pull factor for students who were interested in working with ICTs in their studies. For students, an attractive repayment scheme was in place to pay off the tablet. This is an example of how the use of ICTs was embedded and made sustainable.

ICT4Health sub-programme & MDG results (2011-2015)

Goal: *'Improved effectiveness and efficiency of the health care system supported by 20 partner organisations for 1,000,000 patients and citizens by 6,000 community health workers, home based care givers and health professionals working in 300 health facilities and care outreach programmes in 300 communities in 5 countries through an integrated introduction of ICT in health care services and community health, with a special focus on empowerment of women'.*

The C4C ICT4Health programme is implemented by Cordaid and IICD, in cooperation with, local (implementation) partners and (locally-based) technical advisors and support from Akvo and TTC Mobile. The programme facilitates the development of ICT solutions in health together with a variety of stakeholders.

In 2011, all sub-programmes in Health (5 countries: Ghana, Uganda, Mali, Tanzania and Malawi) started their projects with a *Round Table* workshop, followed by a *Solution Design* workshop that helped the participating health partner organisations to identify the key areas where they expect ICT to have the largest impact on the healthcare sector. These were the following focus areas:

- **Collection of evidence-based health data** to support home-based care and health care planning by health institutions.
- Provision of relevant information on health practiced for **health care campaigns** for citizens.
- Provision of more **digital training materials** for health workers for continued training programmes.
- Registration of patient data and data on different areas of the work of health facilities and hospitals to support **health planning and management**.

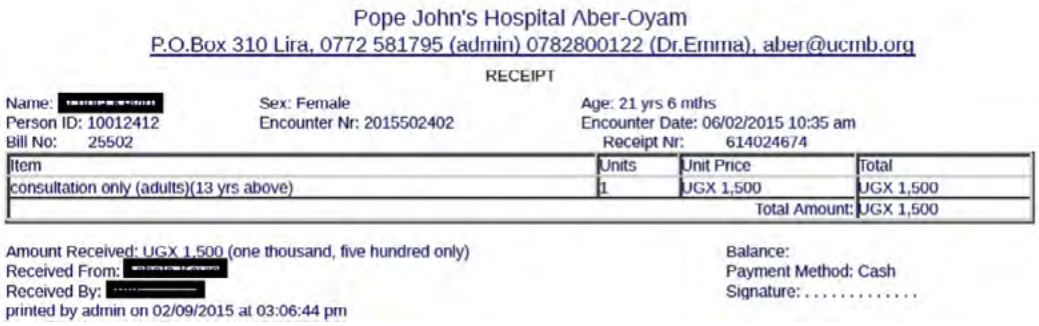
Partners in the health sub-programme were quite successful in achieving their desired goals. As the use of ICT for improved healthcare, both computers and mobile phones, was new to many of the partner organisations, as well as to the health facility staff and volunteers included in their projects, it was quite a challenge to have the use of ICT accepted and to become of added values in the health activities. However, the fact that C4C has been able to support the projects for over 4 years, has resulted in large uptake of ICT knowledge and skills in all the projects. Continuous attention for the challenges such as staff turnover, computers or mobile phones not working, power failures, connectivity issues and more, have all taken time, but eventually resulted in many results and achievements. Particularly in places where computers and mobile phones are quite new to people, this long term involvement is essential in making a real and lasting difference.

Implementation of the sub-programme in the countries – featured interventions

Descriptions of the implementation of the health sub-programme in the different countries can be found in annex 3. In this paragraph, the report highlights two ICT4Health interventions in more detail.

Transparency vs community wishes in Uganda

As part of their reporting for the first half of 2015, 14 hospitals implementing Electronic Patient Record Management Systems (EPRMS) supported by C4C and local implementing partner UCMB were asked to provide information on changes the system had brought about. 60% noted that patients receiving services from these facilities have indicated that they trust receipts produced by the system more and complained when issued with summary receipts from receipt books whenever there was an interruption to the system. Such interruptions are common due to power load shedding. Printed receipts have information for the patient to verify and this contributes to patients' satisfaction because of the detailed breakdown of the charges such as consultation charges, lab tests requested, drugs prescribed. This improves patient to hospital relationship and eventually increases service utilization because of more patients who come back or recommend others for services offered by the facility. Below are snapshots of receipts from EPRMS-Care2x at Aber hospital where the system is pay per service.



Pope John's Hospital Aber-Oyam
P.O.Box 310 Lira, 0772 581795 (admin) 0782800122 (Dr.Emma), aber@ucmb.org

RECEIPT

Name: [redacted]
Person ID: 10012412
Bill No: 25502
Sex: Female
Encounter Nr: 2015502402
Age: 21 yrs 6 mths
Encounter Date: 06/02/2015 10:35 am
Receipt Nr: 614024674

Item	Units	Unit Price	Total
consultation only (adults)(13 yrs above)	1	UGX 1,500	UGX 1,500
		Total Amount:	UGX 1,500

Amount Received: UGX 1,500 (one thousand, five hundred only)
Received From: [redacted]
Received By: [redacted]
printed by admin on 02/09/2015 at 03:06:44 pm

Balance:
Payment Method: Cash
Signature: . . . . . .

Receipt for consultation paid at the start of the process

Pope John's Hospital Aber-Oyam
P.O.Box 310 Lira, 0772 581795 (admin) 0782800122 (Dr.Emma), aber@ucmb.org

RECEIPT

[redacted]
2412
9

Sex: Female
Encounter Nr: 2015502402

Age: 21 yrs 6 mths
Encounter Date: 06/02/2015 10:35 am
Receipt Nr: 614024718

	Units	Unit Price	Total
	1	UGX 3,000	UGX 3,000
	1	UGX 3,000	UGX 3,000
		Total Amount:	UGX 6,000

d: UGX 6,000 (six thousand only)
[redacted]

Balance:
Payment Method: Cash

Receipt for Lab services paid after examination by the Medical Doctor or Clinician

Pope John's Hospital Aber-Oyam
P.O.Box 310 Lira, 0772 581795 (admin) 0782800122 (Dr.Emma), aber@ucmb.org

RECEIPT

Name: [redacted]
Person ID: 10012412
Bill No: 25569

Sex: Female
Encounter Nr: 2015502402

Age: 21 yrs 6 mths
Encounter Date: 06/02/2015 10:35 am
Receipt Nr: 614024737

Flat fee bill?: ◉ Yes ○ No	Malaria Treatment @ 5500.00		
Item	Units	Unit Price	Total
Paracetamol 500mg Tab	18		
Artemether/Lumefantrine 20/120mg Tablet	24		
		Total Amount:	UGX 5,500

Amount Received: UGX 5,500 (five thousand, five hundred only)
Received From: [redacted]
Received By: [redacted]
printed by admin on 02/09/2015 at 02:54:23 pm

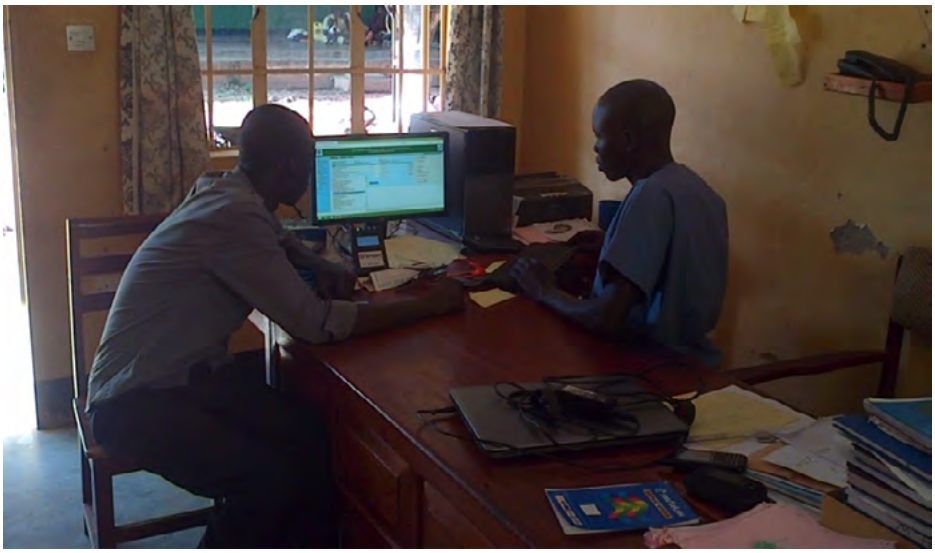
Balance:
Payment Method: Cash
Signature: . . . . . .

Receipt for drugs paid after investigation as prescribed by the Medical Doctor or Clinician

While this kind of transparency is a positive change it has come under criticism by local users of the health facilities. Among these are some married women from rural areas who are without employment. They depend on their husbands for financial needs and had devised a way of getting money out of their husbands when pregnant. Partners heard the story of expecting mothers deceiving their husbands using false receipts by requesting cashiers to alter the amount written. The intention was to save money which they would use for personal things since many husbands can be hard on providing money to purchase basic things such as baby clothes and even for delivery kits. Husbands discovered that their wives were not telling truth causing mistrust on issues to do with money. On the part of husbands they are happy with printed receipts because they can't be forged by cashiers but on the part of the mothers its bad news.

The big challenge with the previous system was that it gave staff a way to fake receipts and uses some of hospital money for their own needs. From the perspective of health systems strengthening, the system is of great importance to the hospital, especially patient records management. However, patients as mentioned above prefer a system that can be manipulated to their wishes forgetting the greater good offered by good hospital systems which translate into many other benefits such as low cost of services, timely information to support decision making on drugs and medical decision on patients.

Above notice board with fees structure at St. Josephs Kitgum to promote transparency and prevent contradictions regarding fees



Cashier at St. Josephs Kitgum being helped by their IT person

Critical acclaim for C4C partner in Mali

Muso Ladamunen, one of C4Cs project partners in Mali has received important critical acclaim in 2014 and 2015. In a World Bank report from October 2015, the organisation was mentioned for making a major difference in health care utilisation and reducing child deaths from malaria[1]. In September 2015, the same partner was presented during the Clinton Global Initiative[2], where the Malian Minister of Health and the global health nonprofit Muso announced a new commitment to expand a proactive health care approach and test it as a global model for combating the child mortality crisis.

Muso's contribution to a fall in child mortality by a factor of 10 in Yirimadjo, Mali, has been commended as '*an important example of success*' by the World Bank's Global Monitoring Report 2014/15. The project trains and works with Community Health Workers (CHWs) to promote preventable health measures and provide timely, proactive healthcare to poor populations in Mali. By selecting local, trusted individuals as CHWs, Muso Ladamunen strengthens the health sector from the community level up, and increases general efficiency of care. CHWs make regular house-visits to check up on the health of young children and pregnant women in particular. This plays a vital role in the screening and prevention of common diseases such as malaria - the main cause of death in Mali. From there, patients are rapidly referred to doctors if needed and user fees are eliminated. This ensures that even the poorest can access treatment.

C4C works in partnership with Muso on the 'Ma Santé' project, which uses mobile phones and a mobile app to help improve the effectiveness and impact of malaria monitoring in Mali. Together with local technical partner CERTES, a local app 'Mamans Mobile contre le Malaria au Mali' (MAMMA) is developed and pre-installed on low-cost mobile phones. CHWs are being trained in basic ICT skills and learn how to use the mobile phone and app in their daily work. The MAMMA app allows CHWs to quickly collect, register and instantaneously transmit data on malaria indicators to a web-enabled database. Professional health workers of the nearby health centres consult this data on a daily basis to see who needs to come in for treatment and whether an outbreak of malaria can be expected. This streamlined system allows CHWs to easily communicate with health centres and vice versa. This improves referral and case management, thus making the monitoring and treatment of malaria more effective.

At least 2,200 malaria patients have been treated since Ma Santé's implementation in 2011-12 and a number of impressive results have been recorded. Improved efficiency has allowed for a 20% increase in the number of patient visits, a 65% faster treatment response and a 19% increase in the number of children receiving treatment within 24 hours. Since the pilot in 2012, funded by C4C, Ma Santé has been up-scaled by C4C and Muso Ladamunen with technical support from Orange/Orange Mali/ Sonatel in Mali and replicated by RAES in Senegal.

In late 2014, when it became clear that Ebola posed a serious health threat in West Africa,

1 http://www.worldbank.org/content/dam/Worldbank/gmr/gmr2014/GMR_2014_Full_Report.pdf

2 http://globalhealthsciences.ucsf.edu/news-events/solution-to-child-mortality-crisis-could-come-from-an-unlikely-corner-mali

the approach designed for the malaria programme was used to roll out an Ebola awareness campaign. Although Ebola had not yet affected Mali, the outbreak in neighbouring countries did raise serious concerns. The awareness campaign sent information on the virus to registered users via SMS and the campaign was promoted via flyers and on the radio.

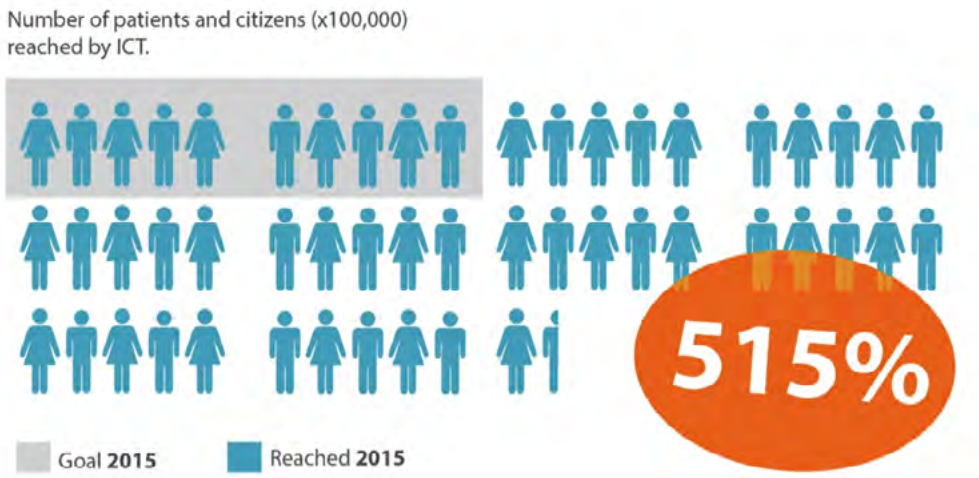
ICT4Health MDG results (2011-2015)

In 2011 goals were set for the ICT4Health sub-programme. As we can see in the table below most of the original goals ("Goals 2015") were surpassed, sometimes in great numbers. Numbers that catch the eye right away are the population coverage reached by ICT (patients and people reached by for instance awareness campaigns) - this number is 5 times higher than originally projected. This shows that ICT makes it easy to reach people on a large scale. Both systems for health management information and mobile based health campaigns can reach thousands of people with relative ease. 61% of the population mentioned are women – this is mostly due to a number of projects and campaigns aiming specifically at girls and (pregnant) women. For the number of health workers the ratio is more equal: 48% of health workers trained in ICT applications in health care are women.

The number of stakeholders who are actively participating in C4C partner networks has also exceeded the 2015 objectives by a large margin owing in good extent to the activities undertaken by C4C partner SEND Ghana (composed of 50 district assemblies, 50 Facilitating Non-Government Organisations FNGOs, and 50 District Health Management Teams DHMTs). There has been an increasing integration of healthcare variables in Hospital Management Information Systems (HMIS) to adapt the systems to new national healthcare policies, among others. Indicators that neared completion last year, like the number of health workers trained in ICT applications, and the communities reached by the Health sub-programme, have now been completed.

Output indicators	Reported 2011	Reported 2011-2012	Reported 2011-2013	Reported 2011-2014	Goals 2015	Total 2011-2015
Population coverage reached by ICT /media activities supported by C4C (men + women).	35.000	1.043.355	2.744.248	4.615.842	1.000.000	5.149.551
of which these are women:	-	-	1.654.881	2.864.823	-	3.157.605
Communities reached by the programme.	-	-	172	291	300	778
Health workers (in facilities, programmes, CHWs, caregivers, etc.) trained in ICT applications in health care (men + women).	54	2.704	5.661	4.809	6.000	7.508
Health workers (in facilities, programmes, CHWs, caregivers, etc.) trained in ICT applications in health care (only women).	-	-	2.632	2.644	-	3.665
Total facilities from which trained healthcare workers come:	-	-	-	287	-	536
Number of health facilities and care outreach programmes that integrate or improve Health Management Information Systems.	20	661	354	427	150	350
Number of variables integrated in the Health Management Information System.	20	573	916	1.466	20	1.689
Number of stakeholders (NGOs, institutions, representatives of government), whether or not directly supported by C4C participating in a C4C network at country level.	49	179	200*	218*	25	222
Number of C4C partner networks in ICT for Health that participate in sharing experiences, collecting relevant data and lobbying for use of ICT in health programmes.	5	5	5	5	5	5

** Number adjusted after corrections in how data was added up*
Indicators marked with (-) were not part of the monitoring plan in some of the years.



The number of communities reached by the sub-programme still rose strongly compared to last year. In Ghana, two new Health partners became part of the sub-programme in 2015 – new partner Savannah Signatures covers new districts, which also allows new communities to benefit from this sub-programme. In Malawi, the focus of the Nkhoma project expanded to women's health. This led to the inclusion of new safe motherhood women's group facilitators and community based distribution agents of family planning in many new communities.

In terms of outcome objectives, in 2015, the programme reached over 1.3 million patients that accessed health facilities due to information they received by text, radio or TV programmes supported by C4C. It is important to note that not all partners were able to keep track of this – the actual number therefore may even be higher. 64% of these people were women – again a high number due to the specific services aimed at women described earlier. The outcome on the patients' satisfaction scores is described, mainly in qualitative manner, in the sections below. Some examples on Health policies and collaboration with government are taken up here:

In **Ghana**, partners ACDEP and Savana Signatures at various occasions engaged the District Health Management Teams (DHMT) and the District Assemblies, where their projects are being implemented to dialogue on the use of ICT in health and what the projects have done so far to integrate ICT in health. The response has been positive as the DHMTs and the Assemblies are willing and committed to supporting the initiative through the provision of human and material resources at the various clinics. Benefits and experiences in the use of ICT in health are discussed and shared with the District Health Directorate during their mid-year and annual review meetings. All the ten health centres that participated in the C4C health programme by ACDEP are in the sub-districts of the geographical areas of the Ghana Health service. Having successfully integrated ICTs into their healthcare delivery system, it is expected that the visible results at these health centres will provide useful learning points for government (including the GHS) and non-government institutions in northern Ghana that would want to utilize ICTs to improve efficiency in communication and healthcare delivery services.

In **Tanzania** the government worked on the formulation of an eHealth strategy which emphasizes telemedicine practice. ELCT, one of the C4C partners has been consulted to share its experience.

In **Uganda**, the government has been engaged through local umbrella organisation Uganda Catholic Medical Bureau (UCMB) to incorporate ICT in Health policy to be operationalised, partner UNHCO participated in this same process. For UCMB, their collaboration with C4C not only improved the ICT levels in the network but also helped in creating awareness about UCMB activities including being used as model/reference to other partners and government. The Ministry of Health performance based programme in Private Not For Profit Health facilities supported by Belgium Technical Cooperation has adopted the UCMB Electronic Patient Management System for its use, which is a step to supporting sustainability of the system. At the same time, partner Health Child with external funding collaborated with Makerere University in 2012 to undertake research project *"eHealth, can wireless text messaging increase uptake of planning?"*. Results of this survey were presented to the Ministry of Health (MOH) maternal and child health technical working group in 2013 as a way of advocating for mobile phones as a tool for MCH promotion. Additionally the same findings were presented by Health Child during the International conference on family planning held in Ethiopia in 2015.

In **Mali**, results from partner SGI-SC on the impact of Clinic Management Information Systems will be used by the National Federation of Community Health Associations (FENASCOM) to share with the 1354 Health Centres connected to them. The PROVIA-ASACOM project on regulatory issues around Community Health Centres resulted in improved relationships between the governing Associations of community health clinics and city councils, and between clinic staff and its Association Board members: is some cases, the project led the involved city councils/mayors to take on investments and expenses of the clinics, where they had been reluctant to do so before. The National Programme to Fight against Malaria from 2015 onwards started using the data collection model from the Muso project as a national reference for the collection and processing of data in the fight against malaria. More information on this can be found in the Featured Intervention above.

In **Malawi**, C4C partners have been involved in discussion on policy with the Malawi government. Partner NONM, involved in the development of e-Continuous Professional Development, has been able to make sure that this is recognized as a valid way to get government mandated "Professional development credit" for nurses and midwives.
More examples of the work done in networks with regards to development of the health sector, lobbying and advocacy and collaboration with government can be found in the section on ICT4D Networks and Civil Society in chapter 1.4.

Outcome indicators	Reported 2011	Reported 2011-2012	Reported 2011-2013	Reported 2011-2014	Goals 2015	Total 2011-2015
Patients accessing health care facilities, who received information by text messaging, radio or TV programs supported by C4C (men + women).	-	range 11-80%	range 65-97%	1.378.030	10% increase	1.378.030
Patients accessing health care facilities, who received information by text messaging, radio or TV programs supported by C4C (only women).	-	-	range 40-70%	867.376	-	881.933
Healthcare facilities for which patients received information by text messaging, radio or TV programs supported by C4C.	-	-	-	52	-	120
% patients with satisfaction score above 75%.	-	range 60-85%	range 40-86%	Please see sub-sections below	20% increase	Please see section below
Partners have influenced government policy on ICT for development of the health sector.	-	3	3	5	5	5

Indicators marked with (-) were not part of the monitoring plan in some of the years.

As partners collect more and more data on the ground, so do they collect data on satisfaction of their own patients and clients. This also means the data for the MDG indicator on patient satisfaction now comes directly from them. Some examples are included in annex 4.

ICT4Health successes

The **Ghana** health sub-programme was quite successful. Savana Signatures supported by TTC Mobile sent sexual health education messages (text and voice) reaching almost 3900 young people aged 18-24 years, much more than expected. SEND, an advocacy organisation, organised multiple engagement sessions with (local) government departments and health facilities and authorities at regional and district level to discuss NHIS enrolment for the very poor and for pregnant women. In those meetings challenges were discussed and steps and actions agreed on increasing enrolment of those groups to increase their access to the health services they need. Altogether this resulted in increased action in many districts towards improving access to healthcare for vulnerable groups.

In **Malawi** the sub-programme enabled community health workers (CHWs) to register pregnant women and stimulate them to visit the nearest clinic for antenatal care and deliver at the hospital, throughout the area intended to be included. This has resulted in increased numbers of antenatal care visits and deliveries at the hospital.

"I have been receiving messages from the Mobile for Access Project and it has been very helpful. This is my second pregnancy and the messages are helpful because there are things I did in my first pregnancy without knowing their consequences to me and my baby, and now that I am receiving the messages in my second pregnancy, I am really very careful about the work I do, the way I sleep and get up and the food I eat. I received a message this morning and I was educated to eat a lot of food as the baby was fully formed now. I was also educated that I would begin to experience some pains in my lower abdomen and that it is a normal feeling in the 7th month of a pregnancy. I want to thank Savana Signatures for giving me these messages."

Basigi Madinatu, expecting mother and user of the Mobile for Access project (Ghana)

In **Tanzania**, partner AfyaC4C carried out a maternal health project using mobile and radio as the main media. In addition, they used mobile technology to collect data from Traditional Birth Attendants (TBAs) in the field. Together with TTC Mobile the partner sent out informative SMS messages and appointment reminders to 20,000 pregnant women, mothers and supporters. The project was rolled out in two areas, Sengerema and Bariadi, but was made part of the nationwide maternal health programme Healthy Baby, which will allow the project to continue beyond C4C and will allow for costs for mobile traffic to be paid at the national programme level.

In **Uganda**, the health sub-programme succeeded in contributing to a positive change in attitude by health workers, which is attributed to continuous training and equipping of health units with ICT, after first getting the buy-in of managers. All hospitals have at least some component of ICT in their annual plans, contributing to sustainability. The use of computerized patient registration has resulted in increased transparency to patients and trust, while it has also resulted in improved user fee collection. ICT at some of the health facilities enabled additional means of delivering public health education and improved timely submission of data to the District Health Officer.

ICT4Health challenges and unexpected developments

In **Ghana**, partner Savana Signatures struggled with languages of their information: although information was provided in additional languages, they found that in some areas the main languages used by the women were even different ones again. On top of this, there were some technical issues: the platform used for text and voice messages was not as compatible with the software, which led to a lot of manual registration of phone numbers. In addition, mobile network connectivity issues were observed in delivering the weekly messages.

Malawi's major challenges throughout the sub-programmes have been mobile connectivity, loosing or damaging of phones and lack of airtime. Lack of reliable power for computers and charging phones has also been recurring throughout the years and remains an issue to be solved.

In **Tanzania**, like in many other countries, partners found that the ownership at management level is essential to make sure that ICT becomes part and parcel of efficiency in health service delivery. Ensuring this takes time and effort, as sometimes a lot of resistance also needs to be overcome.

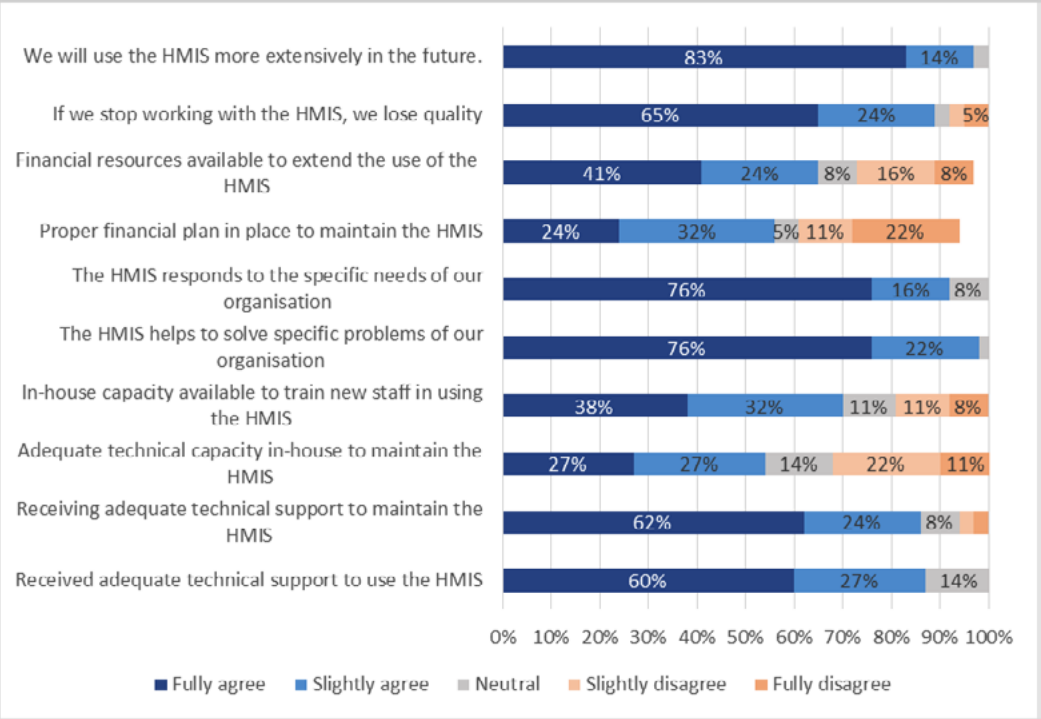
In **Uganda** staff turnover was high, resulting in continuous need for training of new staff on HMIS and use of mobile phones for health services. Although ICT is of great value, existing technologies—particularly the telephone, radio, and television—can often convey information less expensively, in local languages, and to larger numbers of people, than can the newest ICT options. Careful weighing of options therefore remains important.

In **Mali** the main struggle throughout the implementation period has been external: the country's political and social insecurity from 2012 onwards had a negative effect on the development of the C4C programme, though generally projects in implementation could follow course. Planned workshops and visits sometimes had to be delayed, and anticipated travel missions by the IICD country manager, the technical advisor and TTC Mobile had to be stalled until further notice, hindering provision of critical advice, and further deepening of partner-relationships. The Ebola outbreak in the West-African region in 2014 also had a temporary paralysing effect on the whole sector – but did provide C4C-partner CERTES and Muso with the opportunity to conduct a large SMS-based interactive awareness raising campaign – reaching more than 20.000 respondents.

Sustainability analysis Health sub-sector

Sustainability was a key focus area in 2014 and 2015 in all countries where partners worked on ICT4Health. In the 2nd half of 2014, questionnaires were collected at hospitals and clinics that implemented ICT for HMIS in their facility. Though this by no means covers the whole health sub-programme, it still gives an idea of how partners using this solution viewed (amongst others aspects) the sustainability of the HMIS in their facility. Data was collected with a modest group of 43 respondents from 39 facilities (hospitals, clinics and other facilities) in 3 countries.

23% of respondents claim that their health facility will be able to pay for the ICT for HMIS without external financial support either fully or to a great extent. 31% claims to be able to pay for the ICT for HMIS to some extend and 39% to little extend. 8% says they will not be able to sustaining the digitalized HMIS at all.



The graph above shows the different aspects of sustainability that the respondents answered to. Although the sample for these questions was somewhat smaller (37 respondents) there are still some interesting differences. Respondents are very positive about the contribution of the HMIS to their organisation, as demonstrated by the agreements to statements like “we will use the HMIS more extensively in the future” (97% (fully) agrees), “The HMIS helps to solve specific problems of our organisation” (98% (fully) agrees) and “The HMIS responds to the specific needs of our organisation” (92%). Health facilities are confident about the technical support they received to use (87%) and maintain (86%) the HMIS. Quite a number of respondents also feel confident in their capacity to train new staff in the use of the HMIS (70%). We see that to some facilities, despite the technical support they had, feel that maintaining the HMIS might be a challenge (33% (fully) disagrees with this statement). 56% of respondents claim there is a financial plan in place to maintain the HMIS, yet a slightly higher percentage (65%) does feel there are financial resources available to extend its use. While the business case for HMIS remains strong, management needs to pay attention to running the HMIS systems well, because the stakes are high. Any system that creates transparency and fights corruption meets resistance. It takes time to embed new practices.

In the last phase of the sub-programme (2014-2015), the C4C alliance and partners invested much time and effort in discussing and preparing for independent continuation. Now that the programmes are ready, assets such as computers and mobile phones remain with those involved in the health care delivery, as will gained knowledge and skills to use them. In many of the projects the added value of ICT has been felt and recognized and staff and resources are being allocated to keep (at least part of) them functional and relevant to the health services provided. Several partners have come up with creative business ideas which are used to contribute to payment of programme elements which will not yield (enough) income.

In **Ghana**, equipment provided to health staff and/or health facilities remains with them and training has resulted in enhanced skills, knowledge and approaches in using ICT, which they will continue to use in relation to maternal health services. As health staff and health centres as well as communities have become aware of the added value of computers and mobile phones (increased reach, efficiency), they will continue to ensure that those will remain operational and support the health services provided through allocation of resources to sustain them. The information management system and mobile data collection by local partner SEND foundation has improved the timeliness and relevance of the data collected and dissemination by SMS and

voice alerts has increased awareness of the results found and eased monitoring of actions at the level of duty bearers, NGOs as well as citizens. The results from the data collection have been used for policy change at national, regional and district level, leading to relevant contributions in health policy and access to health service. Partner ACDEP has been able to ensure their ICT centres where SRHR information is available and actively shared for youth have become telecentres that combine for profit and not-for-profit activities.

In **Malawi**, computers will remain at health facilities and content for learning is available and will continue to be developed. Continuous Professional Development facilitators are working at the sites paid by government or otherwise, they will continue providing support to their fellow nurses and midwives. Increased knowledge on ICT at health facilities and with community health workers will remain and is of great value to them. Computers and mobile phones will remain with health facilities and community volunteers, as their added value in direct communication and registration is very much used and appreciated.

In **Tanzania** it was a challenge to keep finding enough health facilities willing to pay for ICT improvements and capacity development as well as staying abreast with the fast software developments to remain relevant as ICT-providing organisation or unit, as this is still not an obvious worthwhile investment for many health facilities in Tanzania. Both AfyaC4C and ELCT have been involved in the development of eHealth strategy by the Government of Tanzania, making sure that the role of ICT in health services will continue to be developed in future.

In **Uganda**, local partner UCMB has made the ICT staff and activities become part of the organisation. They will continue to contribute to UCMBs health service delivery. Within health facilities it is harder to maintain this. UNHCOs ICT is also mainstreamed within the organisation and certain project aspects will be taken onwards at district level, so they will continue to improve health service delivery. The District Health Officer (DHO) Jinja has created a ICT tele-centre: paid trainings and use of computers provides income for the DHO. Health Child has created innovative ways of turning part their experience into an innovative business model that will support their non-profit activities.

In **Mali**, C4C project funding stopped by the end of 2014, but with the exception of the campaigns on regulatory issues and on Ebola, all activities continued independently or with other funding in 2015. Both C4C-partners Sante-Sud (SGI-SC) and Muso Ladamunen (MAMMA/ Ma Santé) managed to attract considerable new funding and (political) support based on the results of their programmes, while the @mkoullel project on multimedia for IEC run by CERTES was successfully integrated at the level of 5 community health centres and continues to be executed independently by the clinic staff of these centres. The C4C-partners have developed a combined presentation of the different relevant ICT-tools for Community Health, a modular kit 'TIC-Santé Communautaire', describing the costs, the challenges and the benefits of integrating specific ICT-tools in Community Health (multimedia for awareness raising, mobile phone for data collection, management information and patient registry systems).

ICT4D over-arching implementing activities and results

Besides the activities directly related to the sub-programmes, some activities and results during programme implementation were overarching. This was especially true for the activities implemented by Akvo and TTC Mobile, who supported various country sub-programmes and the alliance during implementation. Their activities and results are partly taken up in the chapters on the different sub-programmes and chapter 4 on organisational capacities. Those activities not related to any of these aspects can be found here.

TTC Mobile

Via the implementation of mobile text and voice solutions, TTC Mobile contributed to the objectives as defined in the C4C mission and worked with local partners in the three sectors. In 10 C4C countries, connections and infrastructure were created to enable interactive communication via SMS. In many countries data collection activities took place to collect valuable data for the partners to be used. Almost all partners have been trained by TTC Mobile on the use of the *Vusion* platform and many partners were trained in the use of the data collection tools. Depending on the requirements and needs of the local C4C partner and their beneficiaries, there were a few platforms TTC Mobile could offer.

Vusion: This platform enabled partners to exchange high volumes of information and data in 10 different countries via SMS with their target groups. The development started in 2011 and the platform was launched in June of 2012. The platform has been connected to all major Mobile Network Organisations (MNOs) in the 10 C4C countries via a short-code. During implementation of the C4C programme, the further development of the platform has been an ongoing effort and additional partner specific features were developed and added on request. All platforms and systems that were implemented throughout the years by TTC Mobile are open source. Throughout the C4C years, a total of 5.240.752 messages have been sent and received during all interactions using SMS between the C4C partners and their beneficiaries.

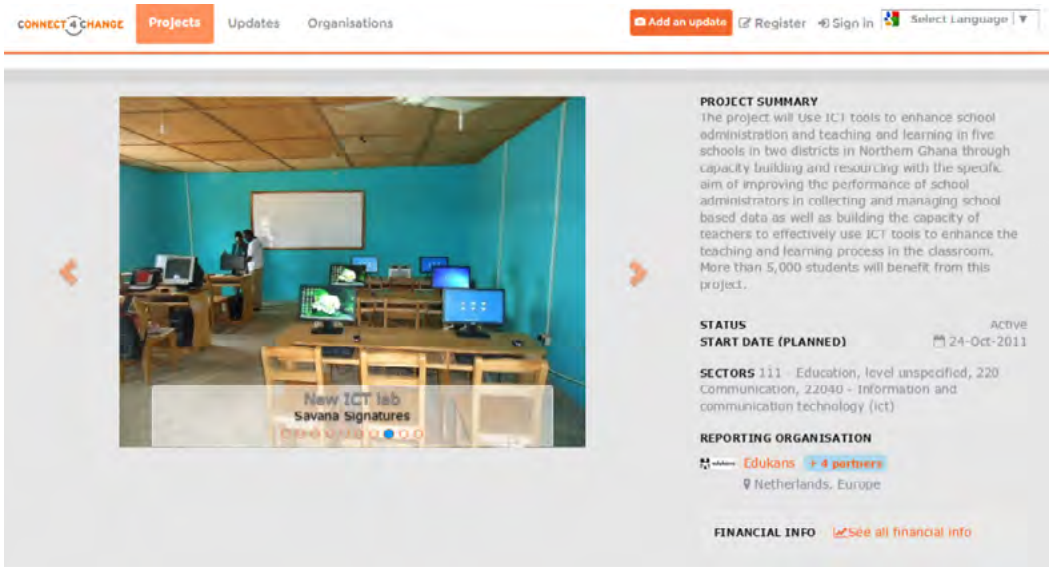
Interactive Voice Response: Due to illiteracy problems amongst some of the target groups, the partners were offered the possibility to use Interactive Voice Response (IVR) in the design of their programmes. During the C4C years partners in Ghana, Kenya and Uganda used the IVR technique to communicate with their beneficiaries. A total of 458.504 voice messages have been sent/received in the past 5 years. TTC Mobile used local technical partners to offer the IVR solution to the C4C partners. This brought about the key advantage that local support was available when needed.

Data collection: TTC Mobile provided technical support for C4C partners to collect data using smartphones by combining two existing open-source and free of charge tools: Ona and Open Data Kit (ODK) Collect. These online platforms allow for easy processing, management, analysis, visualization and mapping of results. Throughout the years, C4C partners were trained by TTC Mobile on the use of both tools making it a very sustainable solution which can be continued after C4C without having any costs.

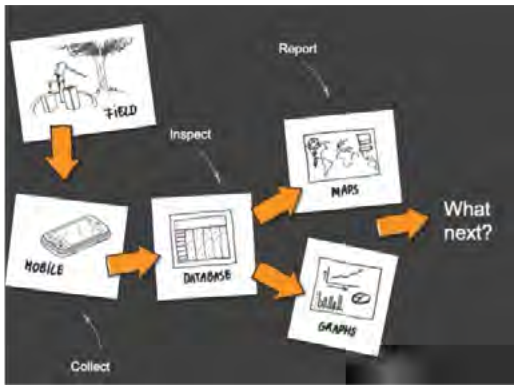
Akvo

Akvo's role in C4C was to assist the partners in sharing knowledge, bringing projects online and simplifying reporting and monitoring to speed up development.

Akvo RSR: To ensure transparency and accountability, the C4C Alliance worked with a public reporting platform, which is being developed, maintained and implemented by Akvo. Called Akvo RSR, it was used to provide "really simple reporting" (RSR) at a project level. Each project has its own web-page on which updates (text, photo or video) of the project can be placed through a web interface. The emphasis was put in making frequent, lightweight updates – a video or a photo with a short paragraph about what was happening, was enough. In addition to the updates, the project page contains other information on the project, such as the location, background, planning information, a gallery with photos and videos, etc. The platform functions both as a linking and learning tool between NGOs, and an accountability tool to the general public and other stakeholders. In addition to project updates, the Akvo platform is also able to hold output and outcome data, or summaries of it, in the project descriptions. In 2014 and 2015 Akvo continued to update and improve the C4C platform and RSR module technically and content wise. Together with the ICT networks Akvo continued to assist the C4C partners with updating their projects on progress. Akvo trained, supported and guided the partners in using Akvo RSR, documenting and sharing their experience along the road. By 2015, 92 projects were online and local partners wrote 1291 progress updates including videos and photos.



Akvo FLOW: Akvo FLOW helped partner organisations to map, monitor and evaluate infrastructure and services using mobile phone surveys, with results shared online in dashboards. Looking forward to 2015 Akvo continued its support (either via online support or a refresher training) to C4C partners in Uganda and Zambia that used Akvo FLOW for data collection. Below is a depiction of how Flow works:



Chapter 1.3

ICT AND GENDER

The C4C programme proposal emphasized a gender sensitive approach to ensure that projects respond to needs of men and women and girls equally and generate benefits and opportunities for both men and women. The proposal stressed the need for properly assessing and addressing specific cultural and social barriers to secure that both women and men access and use ICT tools and services and capacity building. Whereas partners dealt with gender-related issues, it appeared that during programme implementation gender equality was not explicitly taken into account. In order to explore what worked well and what could be done better, IICD organised learning days specifically focusing on gender and ICT in February 2014. Also, in 2015 a study into Gender and ICT was executed and documented.

During the design and start-up of the projects under C4C, implementing organisations in the different countries integrated gender in their strategies in different forms and with varied intensity, depending on their familiarity and previous experience with gender in their organisations. In their reports over 2015, several local partners gave examples of the effect of their work on gender dynamics and the focus on gender equity in their projects. This chapter summarizes some of the local partner's descriptions and gives some background to the Gender and ICT report that IICD published in 2015. Some highlights of this report and its conclusions can be found in Chapter 2.4.

Gender in ICT4Economic Development

Of the small scale entrepreneurs and producers that use ICT to access production and market information about 45% are women. The number of female members of producer organisations that were advised by C4C is lower – just 26% of these members are women. Generally, the larger producer organisations appear to have the lowest female membership base. This does mean that the mixed approach of C4C (reaching users indirectly though producer organisations and targeting individual users) is a good way to reach both men and women.

In **Ethiopia** partners mentioned that women are the most disadvantaged group of the communities in the local context, as they have limited access to and control over resources as well as low decision-making power despite their restless involvement in almost every activity of their family. This is mainly due to complex socio-cultural factors and low community awareness on gender equity and equality. Partner organisations therefore stimulated the participation of women in the project activities of the primary producer organisations and a special training for 82 women was organised that covered different topics such as use of the mobile phone to access specific services. Overall the share of women in these activities (31%) in the period 2014-2015 is slightly higher now than in the general membership (28%). The project has facilitated access for women who are not exercising their right due to lack of adequate skill and knowledge on the activities they are participating jointly with men. The access has been secured through provision of tailor made trainings for women on mobile phone usage in order to make them able to decide on their commodity. Beyond the training provided for women, through coaching and mentoring supports provided for FMOs and Unions, the project developed thinks of gender equality and gender equity for sustainable development among the institutions.

In **Burkina Faso** and **Mali**, the choice to work in the shea sector is a choice to support women in the poorer sections of rural communities: Shea nut collection and shea-butter production are a typical source of cash income for this section of society. Besides income earning, the women producer organisations achieve social objectives as well, such as calamity funds for group members, credit and savings schemes, opportunities to meet and follow courses e.g. for literacy, numeracy and leadership roles, and to feel connected to the other women in the community as well as at the district and province levels.

"All the time since I was married, I have been engaged in subsistence farming. Before I got involved in ICT for Value Chain Development (VCD) project with ADS project, I used to harvest very little from my farming activities that could not sustain my family and pay the school fee adequately. This was partly because I was not knowledgeable about proper farming practices, marketing; "I almost gave up farming but couldn't because it was the only way of earning a living. However a relief came with the ICT for VCD project from ADS and partners, who trained us about new ways of farming productive crop varieties which improved our crops yields. I'm now knowledgeable on the market trends and agronomic practices. I now have food for my children, can pay school fee easily; there is peace and harmony in my family. We are planning to buy a cross breed dairy cow to diversify my sources of income and for milk."

Testimony of one of the participants interviewed in the external evaluation of the C4C PROGRAMME in Kenya

In **Kenya** partners have operated generally gender aware, allowing for an over-representation of women in project activities (around 68%), compared to organization membership (around 35%).

Gender in ICT4Education

In **Ghana**, Savana Signatures incorporated several interventions to promote female and girls' participation in ICT. "Cultural predispositions towards gender inequality and subservient of women leadership role in society also turn to deprived girls from having access to computers in school computer labs and a strong hindrance to female students learning ICT in school" says Augustine Opoku Adjei, the project officer of Tech Girls and Coordinator for the Female Teachers Using ICT (FTUT) of Savana Signatures. As part of concerted efforts to empower female students particularly to effective use ICT to learn, Savana Signatures (SavSign), has initiated a programme known as "Female Teachers Using Technology (FTUT) Fellowship, a yearlong extensive programme for female teachers to become ICT role models.

In **Peru**, the bilingual education sub-programme on communal knowledge and that was implemented with the use of ICT, actively and equally encouraged both boys and girls to participate. The sub-programme established a positive change in the perception of parents with regards to educating girls. Girls gained more self-esteem and started to communicate more. The percentage of students in the classrooms under the C4C education sub-programme increased to incorporate 50% female students.

Gender in ICT4Health

In ICT4Health, the number of female patients and other clients using the services is quite high at 61%. This is mainly due the specific projects and activities aimed at women – often also with a great number of users- such as awareness and alert services for pregnant women via text messages. `

In **Uganda**, UNHCO Uganda found women responding more positively to the ICT messages they receive than male users. This was quite interesting because on average very few had mobile phones. It seemed that although most men were not escorting their wives for health services, they shared information with their wives thus the turn up at health facilities increased. So the approach of approaching men and women together has proven to be a great way of health promotion in a household and community at large. Health Child in Uganda makes sure that their group members are 80% women in child bearing age 18-49 years and 20% are men. Messages they send out however contain cross cutting messages for men and women combining messages on health with messages on income generating activities. The testimonies we now have from the field show that more women have also started engaging in income generating activities and have been able to contribute to family healthcare fees in addition to other family basic needs at home. The women have testified that because of this, they now get more respect from their partners/husbands.

In **Malawi**, partner National Organisation for Nurses and Midwives (NONM) found that female nurses and midwives, like their male counterparts, have managed to acquire and nurture technology in the form of computers and smartphones, they are accessing e-Continuous Professional Development, use smartphones for reporting purposes and receive and share communication using SMS. This is especially important considering that 90% of nurses and midwives are women. Through team work, male nurses have provided ICT peer support to female nurses on computer and phone usage. 10 of the 17 Continuous Professional Development (CPD) facilitators are now female nurses and midwives.

Research into ICT and gender

One of C4C's ambitions was to contribute to an improved collective understanding of how the introduction, uptake, and embedding of ICT-based solutions impact the well-being of, and relationships between, men and women and their respective roles in health, education and economic development activities. During implementation gender responsiveness and the documentation of gender-related experiences and insights was not given structural and systematic attention, but programmes showed results related to women's empowerment and changing dynamics in gender relations. Though some of these results were shared during in-country Learning Workshops, C4C felt the theme warranted further research.

With support of the Dutch Ministry of Development and International Trade, C4C received support from the Gender Resource Facility to explore and document learning in ICT4Gender in the C4C programme. Local gender equality experts supported selected Learning Workshops and carried out case studies with partners in Kenya (ADS Western and North-Rift), Uganda (Health Child) and Tanzania (AfyaC4C). The case studies are based on information collected through interviews and Focus Group Discussions. These were synthesized into an overall study which highlights the main results of the case studies focusing on good practice approaches to enhance equitable participation in, and benefits from, ICT-enabled solutions, and the conditions that make those practices effective. Specific attention is paid to gender-related changes concerning access, decision-making processes, and benefits accrued from participation in ICT-supported projects.

"….we started receiving voice messages on our phones every Tuesday evening or Wednesday. The messages were about attending saving meetings, saving for health, cross checking the passbook to see if the money saved is clearly written in the passbook. Because of the voice messages that always ended saying "….. this message is brought to you by Health Child", I got more confidence in the VSLA (Village Savings and Loan) being very sure that our money would not be stolen. The messages also always reminded me to attend saving meetings. I also adopted a spirit of setting aside money for saving during the VSLA meeting. In fact, initially, I did know the importance of saving for health but voice messages gave me the confidence to also start saving for health regularly. This money would help me and my family whenever we needed money for treatment."

Nakiliza Jamilah, end user Health Child project, Uganda

In chapter 2.4 the main results from the case studies, and the most important lessons drawn from the case studies are taken up.

Chapter 1.4

BUILDING ORGANISATIONAL CAPACITIES

Main training activities and other capacity development interventions

Within the C4C consortium, IICD is explicitly focusing on building capacities of partner organisations to integrate ICT in a sustainable way while other alliance partners focus on training in their thematic areas or technical areas of expertise. This paragraph focuses on the topic of capacity development and describes the main activities that were carried out by C4C stakeholders. Capacity development interventions in 2015 were given as training courses for the project teams of partner organisations, technical update seminars, ICT4D learning workshops and one-on-one coaching activities. In 2015, activities focused specifically on capacity development for the implementation of the last activities of the programme and, in this last phase, on sustainability. Data regarding satisfaction of partners on capacity development and coaching support by the C4C alliance can be found in chapter 2.5.

TTC Mobile (TTC) focused on the operational aspect of sustainability throughout implementation. This meant that the self-management of *Vusion* was gradually introduced to partners to give them enough time to familiarize themselves with the platform. This also enabled them to apply their gained knowledge and practice as much as possible while TTC Mobile was still available for advice, tips and help when needed. Partners with the intention to continue their mobile programmes after C4C, received additional training in 2015 to ensure full capacity for the self-management of their mobile programmes.

Akvo provided most partners in the C4C countries with an Akvo RSR training. In order to make sure partners could use the platform well, Akvo also gave refresher courses for partners in the use of RSR. A self-help and online support environment (the 'Akvo academy') was developed where local partners can find information, support materials and the answers to most questions to further support partners and to facilitate partners' interactions amongst each other. Using online training software (GoToTraining) partners are helped by on-demand online questions sessions and specific webinars. All training materials are updated (including French), available online and include video-animations (French / English) to demonstrate effectively the use Akvo RSR and Akvo FLOW.

In **Bolivia**, IICD worked with technical support partner *EnBolivia* in the organisation of a workshop for economic development partners on the implementation and upgrading of a platform to commercialize products from the local partner's programmes (biologic/ecological products, organic fertilizers, academic literature on sustainable agricultural practices). Parallel activities included a 2-day workshop on the use of their platforms based on market demands, receiving training to upload and administer information. To conceptualize their business plans, plan cruncher and business model canvas were used. At the same time, IICD and its technical partner *Imaginar* worked with economic development partners to upload learning materials to an open repository. All content materials created throughout the C4C programme could be used in order to preserve knowledge products, which include audiovisual materials, user-guide manuals, and other learning material. Partners understood the benefits of preserving such materials, identifying relevant content for this repository and other technical requirements such as: editing, storing, compressing, crediting and uploading. Over the course of 2015, more trainings took place: A workshop on Copyrights allowed organisations to learn about ways to protect any digital material created, distinguishing between materials they could use and how to use content. A second workshop on marketing was given to all partners, which deepened capacities on the use of tools to portray the value proposition of their institutions and to reach certain market segments and public. Among the tools used were Google Adwords, and social media such as Facebook. Finally, a workshop on Moodle was given to education partners, which had practical and theoretical lessons on using this tool to be used in collaborative settings to improve both teaching and learning.

In **Burkina Faso**, IICD and technical partners planned for two capacity development activities in 2015. One focused on the experiences gathered during implementation as well as the way forward. It was attended by 14 people from 6 projects and treated subjects like resources needed, the different stages of implementation, good practices and communication. The second training focused on resource mobilization, was attended by 12 people from 6 projects and looked at SWOT analyses of the attending organisations, resource identification, strategic

plan design, communication and resource mobilization strategies (grants, donations, events, services and benefits).

In **Ghana**, quite a number of capacity activities still took place in this last phase. IICD stimulated partners to focus these trainings on independent continuation of the projects after the end of C4C funding (both focusing on technical capacities of partners and other sustainability strategies). IICD supported Ghana partners in the organisation of two "What is next?-workshops", one to start off the thought process and one for supporting partners' concrete steps. There was a workshop for Sharing Experiences & expectations of ICT intervention in Education and two workshops in Content Sourcing and Adaptation. Three trainings focused on Learning Management Systems (LMS): one on the training of tech support members, one on training of teachers in the use of LMS and one on the on-site deployment of the LMS. In total, 402 people were trained in this brief period: 81 project staff members (managers, tech support etc), 284 teachers and school staff and even 37 school children from selected schools.

In **Malawi**, capacity development focused on training in AfyaPro for super users at Nkhoma hospital, including the IT team, and for the AfyaPro implementing team consisting of the ICT officers of the 3 dioceses (Chikwawa, Mangochi, Blantyre). Partners in Malawi in turn trained 2244 doctors, nurses, administrative staff members and other stakeholders in the health sub programme – 27% of these users were women.

In the first semester of 2015, IICD supported partner organisations in **Mali** in the organisation of capacity development activities geared towards the Monitoring and Evaluation of capacities of the C4C project partners. Activities that took place for all project partners were a Workshop Project Management (a last module on closing a project) and two workshops on Monitoring and Evaluation. The first workshop highlighted capitalization of acquired lessons, knowledge and insights and gave participants the assignment of preparing documentation of their project as input for the final session where this documentation was shared with other partners. Workshops took place for a total of 61 people (though many participants obviously attended more than one workshop).

Based on project partners' needs for the completion of C4C, IICD worked with partners on the closing capacity development activities for C4C **Peru** - focusing on two major subjects: (1) The completion of a digital repository for learning materials, audiovisual materials and software created by C4C partners in the Education sector; (2) the consolidation of business plans and the launching of e-marketing and e-commerce campaigns suited for each C4C partner in the Economic Development sector. Training and additional activities were conducted per sector and are highlighted in the paragraph below (Featured Intervention). Partners in total managed to train over 32,000 people still in 2015 – 94% of the participants to these trainings were women.

Capacity development in **Tanzania** focussed on the use of ICT in health for telemedicine and HMIS and (repetitive) training took place in over 50 health facilities. Over 40% of the trainees were women. Other capacity development efforts were geared at (1) strengthening the capacity to develop and implement eHealth strategies as partners of civil society organisations, (2) ICT programming and development skills , (3) the competences to manage eHealth projects and to make them sustainable and (4) to assess the gender aspects related to HMIS and to promote positive and gender friendly/ respectful practices.

In **Uganda**, from the start of the C4C programme, capacity development was approached through "techy clubs" of partner organisations' ICT officers - and in some cases managers too. The techy clubs received classical collective skill training and technical update seminars supported by IICD, but no less important was the establishment of lasting peer to peer exchange and coaching. The sessions were held quarterly at rotating locations and each sessions highlighted a specific C4C project. The goal of this set up was to create a strong support structure for the C4C projects of ICT4D implementation experts which would ensure technical sustainability. Next to the focus on creating this solid support structure, short term advisory services were delivered to different projects by either local or international consultants. IICD's technical advisor supported project management in writing clear Terms of Reference for and in the procurement of the appropriate advisory service. This approach was feasible in Uganda because of the availability of a relatively large amount of well skilled ICT experts.

Capacities of technical partners

Building of capacities is not limited to implementing partners and end users. Over the years of implementation, technical partners linked to C4C programmes also benefited from their involvement in the programme: they got the opportunity to exchange with others, they gained new skills by applying them (in other contexts), or they developed new tools and solutions. Besides them being an invaluable aspect of the programmes, it is important to recognize the importance of this development too, as it contributes to the development of the private sector in the countries where C4C worked. Therefore, IICD developed a brief survey to find out how the technical partners benefited and what capacities they gained. The survey was distributed among key partners – the results of the survey can be found in chapter 2.5.

Featured intervention

Preparing the closure of C4C in Peru and Bolivia

In Peru, partners indicated their specific needs for this last phase of the C4C programme. As explained above, they identified the need for a digital repository for learning materials, audiovisual materials and software, as well as the consolidation of business plans and the launching of e-marketing and e-commerce campaigns as main priorities.

In the Education sector, the work on the repository has been done by IICD's technical partner *Imaginar*, supported by the Peru IICD Technical Advisor. Two 3-day workshops took place on the Yachay Digital repository (1 in January and 1 in June). *Imaginar* also conducted 7 field visits and a series of online support sessions in May and June.

- The repository is set up based on Omeka (a modern, open source, content management system). 30 ICT officers and project coordinators from the different C4C Education counterparts have been trained in understanding the reasons and benefits of having a repository. They practised appropriate labelling, file formatting, uploading content. Participants got trained on good practices in the final editing of media, storage, compression and export of digital materials, crediting, categorizing, coding of filenames, around different media including text, video, audio, and images. The 30 partners have also been trained in downloading large bundles of digital materials, which used to be a challenge for them.
- Imaginar executed a back-up recovery journey through partners offices based in different project intervention sites in order to collect the raw materials. *Imaginar* is still processing an amount of 250 GB materials in different formats and is finishing to upload them on yachaydigital.net.
- Yachay Digital will also be used by Bolivian project partners who also received training from *Imaginar*. The repository will be co-branded between IICD, Edukans and ICCO.

Featured product

Yachay Digital – http://yachaydigital.net - is an online repository digital resources that started in 2015. The repository currently holds almost 500 publications, books, guides, manuals, videos and interactive games developed by partners with support from C4C, related to ICT enhanced rural education and economic development.

In the Economic Development sector, IICD worked with technical DF group to organise a 3-day workshop that took place in April on Business Models, including collective lean canvas exercises and collective revision of streamlined cash flow projections. The workshop helped 25 participants from the 5 C4C partner organisations to concretely practise drafting their business activities beyond their usual NGO models. The 5 institutional partners were faced with the fact that their expected impact (according to their project strategies) still required a linear growth in costs.

Besides the repository and the attention to business models, the partners also worked on documentation and branding: IICD's video partner *NV Elemento Sac* produced 4 video clips (Web and DVD versions), which aim to capitalize knowledge, lessons learned, effects and insights of 4 projects in the economic development sub sector. Beyond documentation, the web clips and DVD also fulfil a co-branding wish of IICD and ICCO at the end of C4C.

The activities mentioned above all contribute to closing C4C in Peru according to a plan agreed upon by all Peru C4C project partners and the C4C counterparts.

ICT4D Networks and civil society

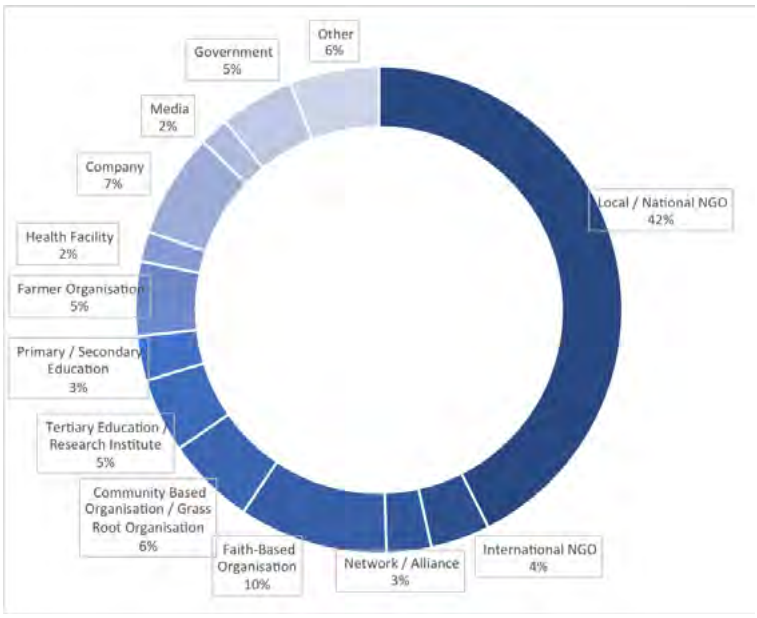
The C4C Alliance actively supported several ICT4D development networks in Africa and Latin America. The ICT4D Networks supported by the C4C Programme are multi-stakeholder platforms that participate with over 260 Non-Government Organisations (NGO) with 2000 individual members. One of their key functions is to lobby and advocate for ICT4 social and economic development and to provide their expert advice in the development of ICT4D policies at a country level. C4C does not implement the Civicus analysis but uses the network reports to gauge the freedom and flexibility of civil society organisations to advocate for and implement change using ICTs.

During implementation, IICD invited C4C local partners and key network representatives to participate in an annual survey that allows C4C to learn about the functioning of the networks, the support they give to Non-Governmental Organisations and other institutions of Civil Society, and their successes and challenges, among other themes. The results from this survey over the years 2011-2015 are taken up below. Also important in the monitoring of the C4C Programme is to explore the local partners' development of the five capabilities (5Cs). The results from the second assessment of the 5Cs with the partners (the first one took place in 2013) is also taken up below.

ICT4D networks survey 2011-2015

Network activities are a valuable opportunity for C4C local partners to collaborate with other organisations as networks allow them to learn about best practices, cross-learn from their projects and experiences and help one another to achieve developmental goals. Over the years of implementation (2011-2015) 416 surveys were collected among C4C local partners, both from technical and administrative staff working in the different C4C countries.

There is a large variation in types of organisations that participate in the networks, yet local/ national NGOs are (unsurprisingly) the largest group:



Most organisations (86%) have been members for more than a year. 66% of respondents do not pay a membership fee for their network.

Main benefits of participating in networks

46% of respondents claim they have reached their goals by participating in the network, 47% partially so, 6% not at all.

When asked what their reason for participating were, many respondents refer to knowledge sharing and expanding their capacities. They also joined the network to stay abreast with recent developments in ICT4D and to network and (possibly) build alliances with partners in the same field.

"It gives us a chance to participate and collaborate with other institutions within and out of our sector. The belonging give us a chance to widen our horizons as an institution. It also affords us a chance to share some of our best practices."

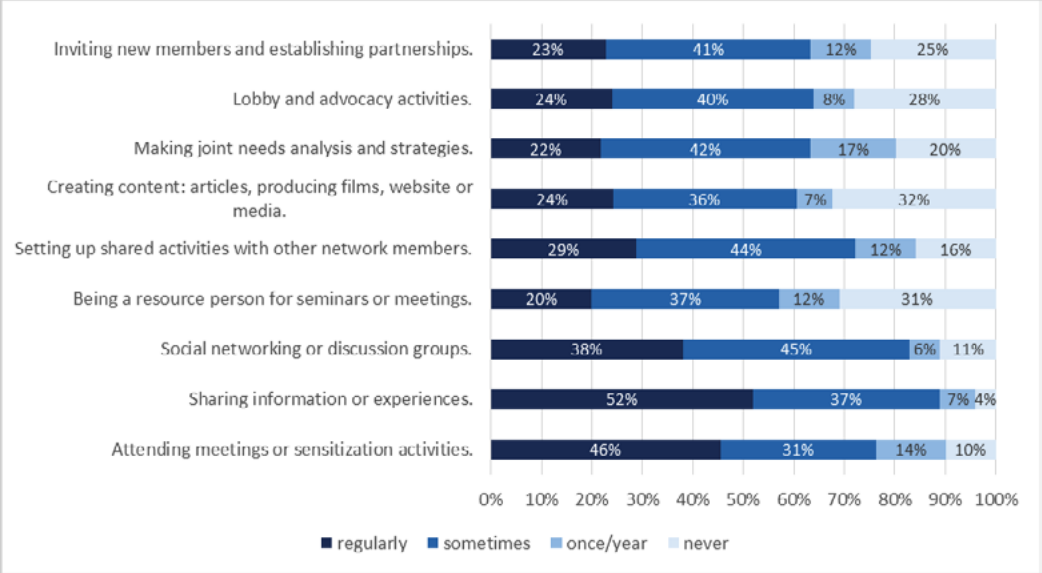
Participant in one of C4Cs ICT4D Networks

"To share ideas, knowledge, experiences and best practices in the use of ICT for social and economical development. Have a platform that provides sustainable civic engagement. Use the network to influence policy formulation and implementation."

Participant in one of C4Cs ICT4D Networks

ICT4D Network activities

In the ICT4D Network Survey, respondents mention the activities that have been most helpful for their network's effectiveness and the frequency with which they carry out such tasks. The table below shows the frequency of activities carried out by the participants in the networks (over the complete C4C implementation period 2011-2015). It shows that generally, people participated a lot in meetings and they shared information or experiences. Online participation, via social networking or discussion groups, is also popular.



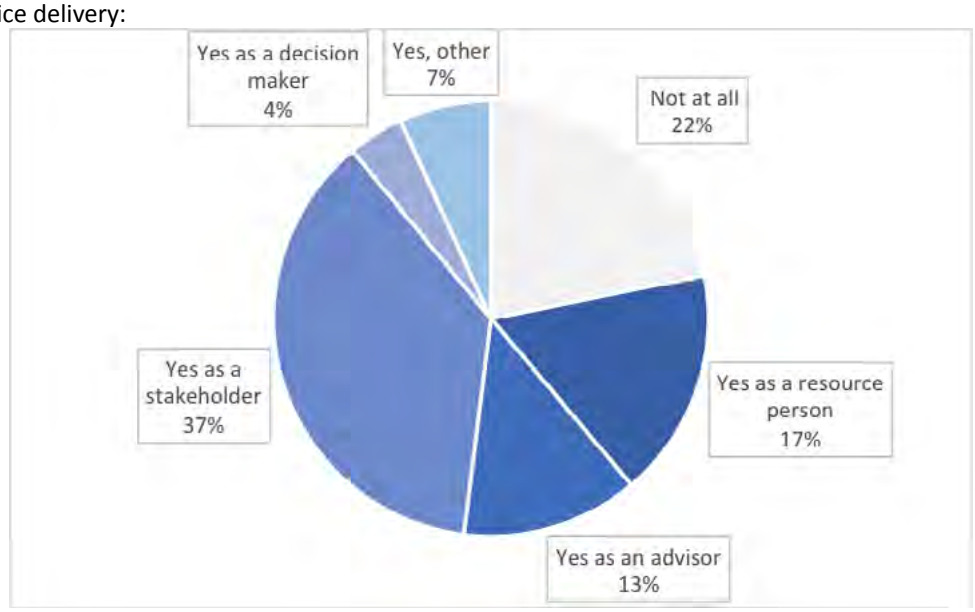
Collaboration with the government and international organisations

Another important aspect of the networks is that they allow partners to jointly show the importance of ICT4D and the experience of the partners in this respect. Thus, partners can lobby and advocate for ICT4D and make sure that best practices from the partners in the network find their way to other interventions, activities or policies – by the government or (inter)national organisations. To this end, the credibility of the network and the participants therein as well as strong ties to the government and international organisations is crucial.

In the survey we see that overall, 78% of network organisations have collaborated with their government or international organisations in some way: in strategizing and policy development for instance, or giving feedback on service delivery of governments or international

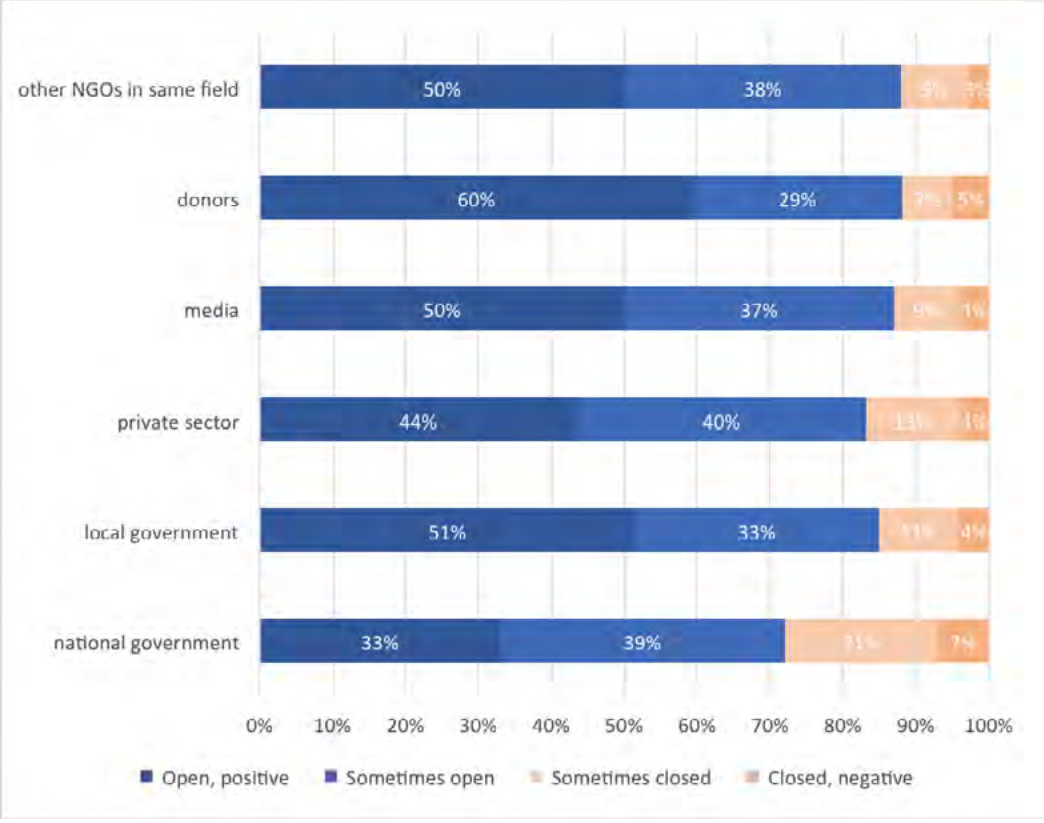
organisations. Some also supported governments or international organisations in problem/ context or stakeholder analysis.

Most organisations were stakeholders in these processes, but several also took roles as advisor (13%), resource person (17%), or even decision maker (4%). Collaboration with government or international stakeholders in analysis, policy development and strategy and/or feedback on service delivery:



Responsiveness of governments to the networks

When asked how they assess the responsiveness of other actors to the objectives of their organization, partners respond mostly positive. Noticeable is the difference between the responsiveness of the local government versus the national government, with the former being more positive (84%) than the latter (72%). Also, partners largely indicate quite a positive response from donors (79%).



Activities of the networks in the countries

Some examples of ICT4D Network activities in the different countries:

- In **Mali**, Groupe TIC-Sante (the national network) organised different activities related to sensitization and lobbying around eHealth in general, and C4C-related projects in particular. Some examples: Directors of health-schools in Mali participated in workshops to sensitize them on the opportunities for integration of ICT in Health education sub-programmes (e.g. using 3-D modelizations etc.), and on the use of ICT in management (EMIS – Education Management Information Systems). A large conference was organised with participation of the Faculty of Medicine and the Ministry of Health, to discuss ways to better align learning from pilots in E- and mHealth to lobbying and policy. From January till July, the website Mali-Ntic published 26 new articles, and put five videos online.
- TICBolivia (in **Bolivia**) has been an established network since the beginning of C4C as it had already started its activities with the collaboration of IICD before 2010. Since the foundation of the network, its institutional strategy has revolved around institutional strengthening of the network, positioning ICTs in government institutions, and lobbying and advocating for ICTs in Agriculture, Education and gender issues. TICBolivia has been able to maintain a close relationship with the Ministry of Education and Agriculture, and the Vice-ministry of Science and Technology. Either through their partners or as a network, TICBolivia has been able to advice government institutions on ICT integration and promoted the expertise of its partners in ICT4D. Government officials have frequently participated in the network's capacity development workshops. Since 2012, TICBolivia published news articles related to ICT4D and more generally about ICT in Bolivia on their website (ticbolivia.net) with special attention to articles related to TIC Bolivia members. Despite the great network that TICBolivia has built for themselves, network partners have not been able to collaborate to fund its operational costs nor have they successfully implemented projects (despite delivering proposals together). TICBolivia is still discussing alternatives to reach a partnership with its local and international partners that will secure funding for its operational costs. Members of the network are also discussing alternatives to maintain its activities, especially in regard to lobbying and advocacy.
- In **Burkina Faso**, the local information and exchange network Burkina-NTIC is very active both online and offline. The network organised various exchange events in 2015, for instance in February for C4C members on the process of social innovation. In that same month, the network provided opportunities for members to exhibit their products at an exhibition stand of the network, and participated in the national event 'Journee du Lait'. The network is also invited to, and participates in most meetings of the Ministry of Development of the Digital Economy and Jobs. The 11th edition of the National Week of the Internet (SNI) was held in June 2015 with the theme "Promotion of electronic payment methods and tools in Burkina Faso: Issues and Perspectives." Online, the network published about 15 articles, amongst which a research article on solar energy – following concerns members face regarding continuous power cuts in the country. A major innovation during the 1st half of 2015 was the introduction of a portal site which federates all relevant local sites on ICT4D in general, and ICT4Agriculture in particular.
- In **Tanzania**, the network AfyaMtandao links health professionals to facilitate sharing of experiences and knowledge. This network has been active throughout the C4C implementation period. Both online and offline, the network raised awareness on the possibilities for and lessons regarding ICT4Health. Especially in the last phase of implementation, AfyaMtandao more and more took the role of a kind of help-desk for individual questions on eHealth. The management of the network has been taken over by the Tanzanian Christian Social Services Commission and this organisation intends to continue its activities beyond C4C.
- In **Uganda**, I-Network has been an active partner of IICD and C4C for over a decade. Over the years, I-Network managed to become the quite renowned in shaping the ICT4D landscape in Uganda. I-Network plays a crucial role in facilitating knowledge sharing amongst C4C and other partners and in supporting lobbying and advocacy efforts of C4C project partners in the country as well as opening doors for possible business opportunities, as they are well vested in local (ICT) markets and internal organisational politics. I-Network runs an active website and mailing list where ICT4D related articles, events, lessons and publications are shared. The network has over 800 registered members from the public, private and civil society sectors.

- In **Ghana** the Ghana Information Network for Knowledge Sharing (GINKS) organised a total of 12 events in 2015 in Accra and Tamale with a total of 574 participants. The Northern ICT4D series in Tamale were very successful with topics as "how can social media impact my business" or "how can ICT support the learning of children with special needs". The 6 events had 253 participants of which 116 female participants.

Five capabilities in C4C

The overviews taken up below of the five capabilities are based on the framework that DGIS/MFA has prescribed. This section explores 5C scores with a quantitative focus. This is no easy feat – providing averages on aspects of the 5Cs and by taking averages of the individual partners, some of the nuance and information gets lost in the process. It has also not always been possible to compare data of the same partners, as partners left the programme or not all data was retrieved.

It has to be realized when reading this section that C4C views the 5C approach first and foremost as a tool for learning and discussion, rather than accountability of individual partners or complete country sub-programmes. C4C used it accordingly: data and background for the 5Cs has been very instrumental during learning workshops in the countries and in individual sessions with partners to discuss progress, challenges and development needs. Partners in workshops also underlined this line of thinking: they too recognized the value of the 5C approach as a tool for learning, but brought forward that the overall idea is not and should not be to improve all 'scores' constantly: different capabilities may be more valuable to organisations at different phases of their existence and at different phases during the implementation of these projects.

Some comparisons are nonetheless made in this chapter – where possible, the nuances are given with each individual table. The different aspects C4C looked at during assessments and discussions in learning workshops were:

The capability to adapt and self-renew

- The organisation uses information from its PME system and changes strategy/activities in line with latest data and findings.
- The organisation adjusts planning to "counterbalance" negative results.
- The organisation stimulates a learning culture, organises learning in a systematic way; offers instruments and facilities.

The capability to act and commit

- The strategy is operationalised into an annual plan of action.
- The organisation has a diversified resource basis and has enough financial means to operate according to plan.
- The organisation has motivated staff and a clear, functional HRM policy.
- The organisation has clear, effective and functional procedures, principles and leadership.

The capability to deliver on development objectives

- The organisation has a PME system that monitors activities and measures output.
- The organisation has a focus on results and delivers on its objectives.

The capability to relate to external stakeholders

- The organisation is engaged in partnerships, alliances and networks.
- The organisation pursues downward accountability and participation of target group/beneficiaries in decision-making.

The capability to achieve coherence

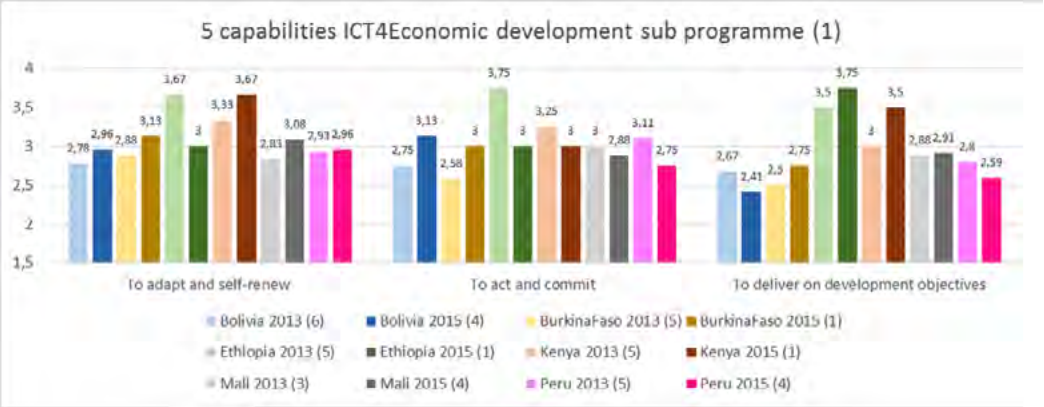
- The organisation has a vision, mission and related strategy that are interrelated and form the backbone to its work / interventions.
- The organisation includes human rights and / or HIV&AIDS as issues relevant to their work and organisation in their management discussions.

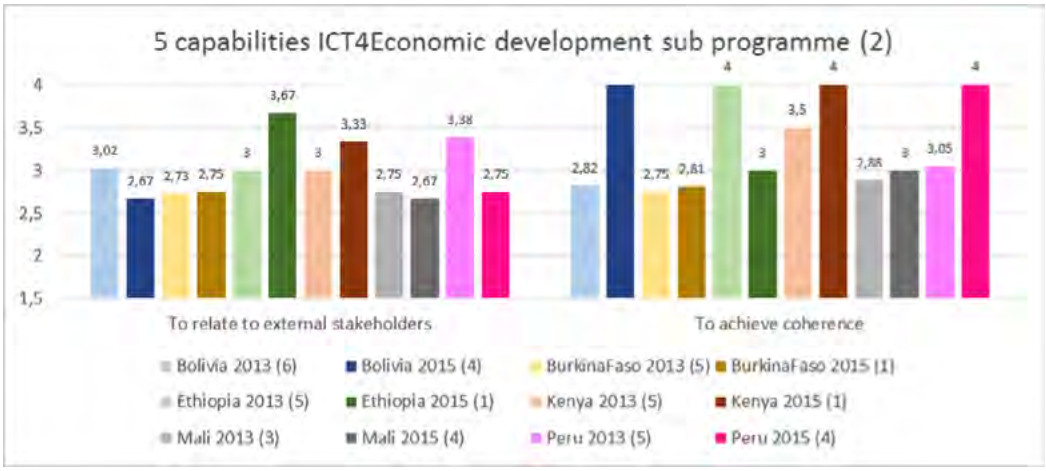
Qualitative examples and anecdotes of C4C local partners' organisational strengthening are provided in previous chapters of the report, in the implementation sections of the sub sectors and the ICT4D Networks. They are omitted in this section to avoid repetition.

Five capabilities in ICT4Economic Development 2015

The economic development partners were assessed on the 5 capabilities by ICCO, scoring them on standardized form. This process to both ICCO and partners was mainly intended as a process for dialogue and reflection. These assessments were done in 2013 and 2015, but the 5C approach was also used by IICD in all years during the learning workshops where partners self-assess which capabilities needed development for the time to come and what they would need to do this.

It is really hard to say something about the scores from the economic development partners. As we can see, though all countries (except for Zambia, which is why it is not taken up in this table) delivered 5C scores for the 2nd 'round' of measuring the 5Cs, in all countries the number of partners went down – in Burkina Faso, Ethiopia and Kenya scores are now based on one partner only, which makes it hard to compare scores with the previous measurement (in the graph below, the number of partners is indicated between brackets for each country-year). In Kenya and Ethiopia, this was caused by partners collaborating in one single consortium at the end of the implementation period. This meant that only the lead partner was assessed, on behalf of the entire consortium. Looking at the individual capabilities, we can see that generally over countries, the capability to adapt and self renew and especially the capability to achieve coherence increased over time. The capability to act and commit on the other hand, decreased somewhat in most countries. Most importantly though, partners over the years became better in using these tools to their advantage: using them to reflect on their own capabilities and on what was needed to improve in certain areas.



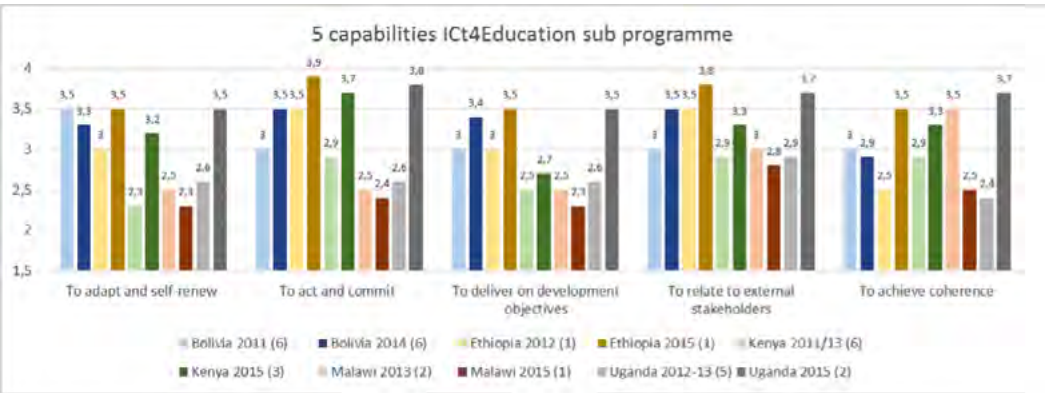


Five capabilities in ICT4Education 2015

For the Education sub-programme partners, the Edukans Assessment Tool (EAT) was used. This assessment has been developed by Edukans to audit partner organisations in such a way that both parties (in this case C4C and the local partner) benefit from continuous organisational development. This means that partners were assessed by an assessor or team of assessors, trained for this specific purpose.

The three countries that only had the initial assessment done (Ghana, Peru and Zambia) are not taken up in the graph below. For all other countries except Bolivia, the number of partners that were part of the second assessment were much lower than those that took part in the first

assessment – sometimes a new assessment was not deemed useful, some partners stopped or could, very practically, not be reached due to heavy rains. Either way, the differences do make comparisons quite difficult (in the graph below, the number of partners is indicated between brackets for each country-year). Ethiopia, Kenya and Uganda all saw their scores raise across the board. Though exact comparisons cannot be made, these countries indeed had quite successful projects. The score for Malawi went down across the board – the latest score however is based on just one partner – though this one partner did improve quite a bit on the capability to relate to external stakeholders. Bolivia, where a lot of partners were also assessed the second time, gives a mixed image with some scores going up and others going down It is good to stress that if there is just one partner with (very) low scores– sometimes more than 1 point below the scores of the other partners, this will affect the overall score negatively.

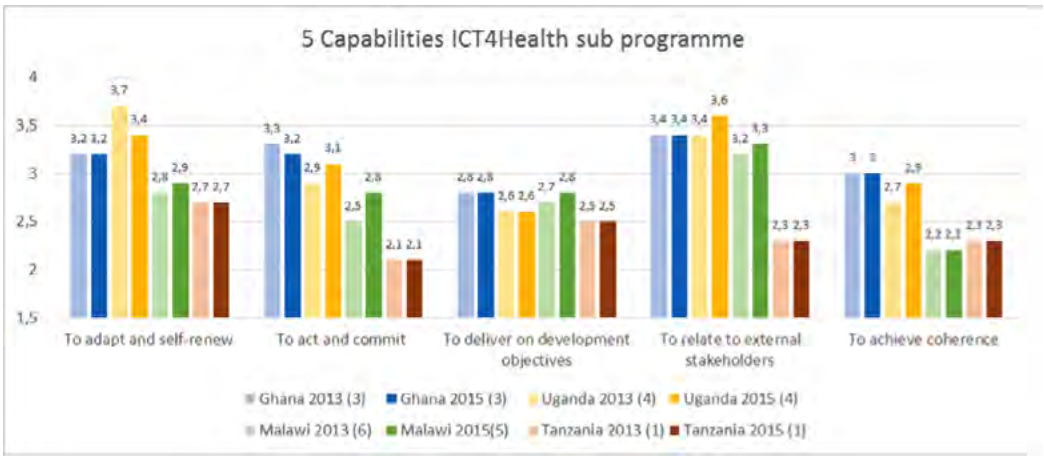


Five capabilities in ICT4Health 2015

Cordaid's organisational scan is a tool that helps assess the capabilities of the partners in the health sub-programme. This tool, as the 5C approach, is not intended as a tool for measuring, but rather for dialogue with the partners. Besides the two assessments that took place, C4C also used the 5C methodology during the annual learning workshops.

Data on partners from the health sector has been collected almost with the same group of partners in 2013 and in 2015 (in the graph below, the number of partners is indicated between brackets for each country-year). What is most surprising about the data on the 5Cs for the Health partners, is that there are so few differences between the initial assessment in 2013 and the results in 2015 – apart from minor differences, partners do not seem to have changed much in their capability assessment. Partners in Ghana and Uganda are strong and have been so from the start.

Looking at the different aspects of the 5Cs, the capability "to relate to external stakeholders" is strong in almost all countries. What is noticeable in the underlying data are the differences between partners: the partners, even those in the same country seem to differ a lot in terms of capabilities – this was the case at the initial data collection on the 5Cs and this is still the case now.



Chapter 1.5

RESULTS ORGANISATIONAL ASPECTS

The C4C consortium is committed to collaborating in all aspects of the programme. The C4C members jointly support project and partner organisations to secure optimal integration and complementarities of the expertise of each of the consortium members. This implies that the members jointly support individual programmes and projects:

- IICD, ICCO and Akvo jointly support ICT4Economic Development partners and projects.
- IICD, Edukans and Akvo jointly support ICT4Education partners and projects.
- IICD, Cordaid and Akvo jointly support ICT4Health partners and projects.

Our preferred partner TTC Mobile works with the different partners across the sectors.

In 2015, this required as mentioned above, full coordination and alignment of support, reporting, procedures and ways of working with each other and with partner organisations by the different decision making levels in C4C.

Governance structure

- The C4C Executive Board steers and guides overall programme strategies and formalizes the annual plan and annual reports. In principle, the C4C Executive Board meets four times a year. Once a year, these meetings are used to share and discuss the results of the reporting in a management review. If necessary, measures to act upon the findings will be undertaken. In 2015, the Board met twice.
- The C4C Programme Committee is responsible for direct monitoring and evaluation of programme progress. They also ensure optimal coordination and have developed guidelines for operational coordination and cooperation in the “Operational guidelines for collaboration”. They also assist to clarify terms of collaboration, responsibilities and disagreement between staff and partner organisations. The Programme Committee meets on a quarterly basis.
- The success of the consortium depends ultimately on the levels of coordination and collaboration between staff members of the C4C consortium member organisations and partner organisations. For this staff meets regularly in the Netherlands and/or conducts joint field missions to secure alignment of support by the C4C consortium.
- The Consortium is further strengthened by joint learning activities in the countries, such as co-facilitation of the Cross Country Learning Events (see learning agenda chapter). In-country ICT4D Learning Workshops (IICD being in the lead, but often in collaboration and presence of C4C-members) took place in close collaboration with other C4C consortium members. A C4C mid-term presentation was produced to learn from the first 6 months and (re)direct focus for the second 6 months.

In terms of formal procedures and financial arrangements this is facilitated by the standardized guidelines on financial reporting. IICD, ICCO, Edukans, Cordaid and Akvo all follow the standardized RJ650 guidelines on annual financial reporting (‘Richtlijn 650 Fondsenwervende instellingen’). These guidelines allow shared reporting on aspects that are related to the DGIS-guidelines for organisational monitoring. Within the Consortium C4C members did not only share the annual audited reports, but they also kept each other informed by sharing narrative reports every 12 months. For 2015, a narrative and financial reports from the implementing and technical support partners covered 6 months (January-June 2015).

The above agreements have been laid down in MoU’s signed by the C4C Consortium Members. In terms of organisational monitoring, C4C will also monitor Partner Policy, Harmonization and complementarity as well as the capability of learning within the organization. Standard information will be derived from the management information systems and the PME-systems from the different C4C Consortium members. Detailed Organisational Aspects of C4C are explained in the table below (as required by the monitoring protocol).

C4C - Organisational Aspects

Aspect	Instrument	Reporting to DGIS	Result
5.1 25% internal contribution	Externally audited annual accounts of all C4C Consortium members. Sharing of Financial reports every six months by each Consortium member.	Reporting includes total income for the MFS-related programmes per Consortium member and the percentage of the internal contribution.	Reporting includes total income for the MFS-related programmes per Consortium member and the percentage of the internal contribution.
5.2 'DG-norm' (CEO salaries)	CEO salaries are published in the audited annual accounts of all C4C Consortium members.	Reporting will mention these salaries.	Compliance
5.3 Efficiency	Annual accounts by all Consortium Members combined with the above mentioned management reviews. Financial reporting will provide the following information concerning calculation of overhead costs of the C4C Consortium members including Remittances, Purchases and acquisitions, Work done externally, Publicity and communication, Staff costs, Housing costs, Office- and general costs, Depreciation and interest. The percentages of overhead costs are included in the audited accounts of all C4C Consortium members.	The annual accounts will address the monitoring on efficiency. Reporting will include the actual realisation for each of the cost percentages of each of the Consortium Members.	Compliance: See paragraph 5.3.
5.4 Quality system	ISO certificates. Inter-organisational learning through the Learning Agenda.	Reporting will include the duration of validity of the certificates of IICD, Edukans, ICCO and Cordaid.	ISO: See details in paragraph 5.4 here below. Inter-organisational learning: see learning agenda chapter.
		Reporting will include reporting on the Learning Agenda.	Learning agenda reports are available in the learning agenda chapter.
5.5 Budget	Annual financial reporting by all Consortium Members.	Reporting will include the total realisations against the planned total budgets of C4C Consortium Members.	See annual accounts report.
5.6 Partner policy	-Partner consultation and selection policy form an integral part of the Memorandum of Understanding (MoU) between the C4C Consortium-members. -Partner policies of individual C4C Consortium Members define collaboration with partners. Partner policies have been provided during the first phase of MFS2. -Contracts with local partners. These include collaboration principles, tasks divisions, conditions and responsibilities. -Based upon annual planning and reporting the collaboration with the partners will be monitored.		
5.6 Partner policy	Monitoring of partners' capacities will be done through the 5C-model; follow-up action will be taken upon regarding the found results.		Please see chapter on building organisational capacities.
5.6 Partner policy	Review of local partners monitored by online questionnaires on the Implementation process.		See chapter on the 2014 Survey Implementation Survey.
5.6 Partner policy	Partner consultations take place during regular field missions.		Field mission reports prepared by programme officers working under C4C.

C4C - Organisational Aspects

Aspect	Instrument	Reporting to DGIS	Result
5.7 Harmonization and Complementarity	C4C supports the sector and national C4C ICT4D Networks in this way C4C partners stay in touch with the different stakeholders and actors in the countries. The networks report to C4C twice a year.		See chapter on building organisational capacities
5.7 Harmonization and Complementarity	Local partners join local coordination mechanisms from the Royal Netherlands' Embassies on national and sectoral level in each country.		
5.7 Harmonization and Complementarity	C4C Consortium members participate actively in international networks such as the ACT Alliance, Caritas Internationalis or the Global Campaign for Education, in which development policies and activities are shared and discussed to build upon each other's strengths and to avoid duplication.		
5.7 Harmonization and Complementarity	On C4C Consortium level: C4C programs are aligned with the Dutch MFS 2-policies on MDGs and the role of Civil Society.	In the Netherlands, regular progress and evaluation meetings, which take place at least once a year, are organised with organisations working with C4C. During these meetings the cooperation on programme level will be evaluated and adjusted if necessary.	The C4C program and annual plans are fully aligned with Dutch MFS-2 policies. Regular exchange meetings took place (IICD with each individual C4Cmember organisation).
5.7 Harmonization and Complementarity	The C4C Learning Agenda brings together C4C Consortium members as well as partners in the South, and sector-wide learning in the Netherlands.		See chapter on learning agenda.
5.7 Harmonization and Complementarity	Direct general agreements to harmonize with other MFS2 -Consortia exist.		Documents submitted in appendix Q of the C4C grant application phase 2.
5.7 Harmonization and Complementarity	Joint MFS-evaluation trust		C4C participates in the joint MFS evaluation of the Joint Evaluation Trust.
5.7 Harmonization and Complementarity	Existing collaboration with Northern donor countries working on ICT will continue C4C is in direct contact with several large institutional donors like the World Bank, various UN organisations, IDRC, CIDA and USAID. IICD acts as an advisor for several of these institutions and C4C works together with several of these institutions in the countries.		See under harmonization.
5.8 Capability for learning of the C4C Consortium	In the learning agenda, several instruments are described to monitor learning on both organisational and inter-organisational level, as well as with local partners and between Consortium members.	Annual reporting on the progress of the learning agenda.	See learning agenda chapter.

Ad 5.1 25% norm: As indicated in the C4C annual accounts 2014, the C4C consortium shows that over the required 25% of its annual income is derived from other sources than the Ministry of Foreign Affairs grants.

Ad 5.2 CEO salaries: As indicated in the C4C annual accounts 2014 the C4C consortium fulfils the norm related to CEO salaries. Salary of any member of the staff within the organisations of the C4C members does not exceed the fixed norm.

Ad 5.3 Efficiency: The actual realization for each of the cost percentages (relation fundraising, management and administration, programme activities) of each of the Consortium Members is presented in the C4C annual accounts 2015.

Ad 5.4 Quality system: Four out of five alliance members have a valid ISO certification: IICD 9001-2008, January 2016; ICCO 9001-2008 (multisite certificate), September 2018; Cordaid 9001-2008, February 2017; and Edukans 9001-2001 May 2015.

Ad 5.5 Budget: The budget of the C4C programme has been spent following expectations. Details are presented in the annual accounts.

Ad 5.6 Partner policy:

Project partners

As was mentioned in previous sections of this report, by 2015:

- In Education, 39 contractual partners, 39 projects (June 30 2015 update).
- In Health, 15 contractual partners, 15 projects (June 30 2015 update).
- In Economic Development, 28 contractual partners and 19 projects (Dec. 2014 update).

Project proposals and Contracting

Project proposals including budgets are prepared by the partner organisations to secure ownership of the programmes. They are supported in this by IICD, Cordaid, Edukans and ICCO. Project proposals and budgets are peer reviewed by country staff of IICD, Cordaid, ICCO and Edukans.

Contracts for implementation are signed between the CORDAID, ICCO or Edukans and the local implementing partner or with the local consortium lead partner. The project proposals stipulate detailed activity plans and budgets for each project and the implementing partner organisations.

Monitoring of progress

Partner organisations report two times a year including mid-term general progress report on activities in September and an annual report including progress on activities, outputs, outcomes and financial reports in March. In 2015, partners reported once, after the close of the programme (June 30, 2015). Direct field monitoring of progress of projects by partner organisations in 2015 took place through field visits by the C4C consortium members. Results of field visits are reported on in mission reports, shared between all consortium members.

Partner consultations

Partner consultations are fully built in the Social Innovation process. The satisfaction and suggestions to improve the process is evaluated by partner organisations through the on- line questionnaires and annual Learning workshops.

Ad 5.7 Harmonization (see also Chapters 2.1, 2.2 and 2.3)

Harmonization with national Government Policies

To secure harmonization with government policies in each of the countries, all Roundtables and other social innovation interventions have taken the national sector policies in education, health and economic development as one of the inputs for the development of ICT programmes. In particular in education and health C4C consortium members and partner seek alignment with government standards related to educational curricula and health data standards.

Harmonization with national stakeholders in each sector

In most C4C countries, C4C partner organisations are organised in networks of consortia to share experiences and develop joint lobbying activities with each other as well as with a larger number of key stakeholders in the sector, including community based organisations, NGOs, faith based organisations, private sector, academics and government agencies. An overview of the

networks per country, including institutional and individual membership numbers is presented in the annex 'ICT4D Networks'.

Harmonization with local coordination mechanisms
In a number of countries, C4C consortium members and local partners are participating in coordination mechanisms among Dutch funded organisations. In the economic development sector this is rapidly promoted by increased collaboration between ICCO, SNV, IICD, AgriProFocus and the Dutch Embassies.

The Dutch Embassy is frequently visited during monitoring visits and policy dialogue is held around specific sectors and integration of ICT. In a number of countries active coordination and harmonization is sought between civil society partner organisations and government policies and programmes. For example, in Tanzania, Uganda and Ghana partners are actively involved in the ICT sector policy for health. In Malawi, Bolivia, Ghana, Kenya and Zambia partners coordinate and share experiences on ICT education programmes in education with the Ministry of Education or the Ministry of Youth.

Harmonization within C4C (see also chapter 1.6)
The C4C learning agenda provides in active learning at 3 levels that are interlinked and feed each other with lesson learned, from local to international level:
Among local implementing partners in the country during the annual social innovation and capability workshops.
Among local implementing partners from different countries through the Cross-Country learning events for each sector programme.
Among C4C consortium members during exchanges in the Netherlands.

Harmonization with other consortia in the Netherlands
C4C has signed harmonization agreements with most MFSII alliances which have potentially overlapping themes, programmes, activities and countries. These agreements are on-going and include in the particular area of ICT-related organisations: TTC Mobile (partner in C4C), Akvo, Free Voice and ButterFly works.
-C4C participated in the joint MFS evaluation trust.

Harmonization with international donor agencies
Existing collaboration with Northern donor countries working on ICT will continue if possible. C4C is therefore in direct contact with several INGOs, bi-lateral and multi-lateral agencies. C4C acted as an adviser to international institutions including FAO, CTA, WORLD BANK, UNCTAD, EU and E-learning Africa. IICD has presented their experience in ICTs at the World Bank. Together the consortium members have been working on a call for proposals for the World Bank, of which one proposal on ICT and health care by Cordaid and IICD has been granted. IICD has been accepted as a member of the mobile education alliance.

International Aid Transparency Initiative (IATI)
The International Aid Transparency Initiative (IATI) aims to make information about aid spending easier to access, use and understand. From 2011 till 2015 Akvo played an important role in helping to shape the transparency agenda of the Ministry of Foreign Affairs, as exemplified by the website www.openaid.nl that is run by Akvo. In 2013 the C4C consortium, led by Akvo, got also involved in the open data process. Project information of C4C is published on Openaid.nl to set a progressive example. The C4C project information was not published in the IATI registry in the end.


TOSHIBA

Chapter 1.6

LEARNING AGENDA

The process of knowledge sharing and learning constitutes an intrinsic element of the C4C programme, whereby continuous cycles of sharing experiences and implementing lessons learned in programmes and projects take place at sector, national and international level. 2015 was really a year of closure, and many activities, also those related to learning: many studies and publications were finalized and during meetings focus was on continuation efforts of partners.
In this section, the following aspects of the learning agenda are highlighted:

- Cross Country Learning events in 2015
- C4C annual learning days
- International knowledge sharing in 2015
- National learning and networking
- ICT4D learning workshops in 2015
- Action research
- Evaluation and impact studies

Please note that the finding from these events and studies are taken up in the next part of this report in the “lessons learned” paragraphs.

Cross-Country Learning

The C4C Learning Agenda includes cross-country learning and sharing between partners implementing similar programmes in different countries.

In May 2015, a Cross Country Learning event on ICT4Education took place in Nairobi. The goal of the 4-day CCLE Education 2015 workshop was to bring the C4C programme to closure and collect knowledge and lessons learned. The workshop was attended by 19 partners from all countries with an Education sub-programme, as well as representatives from IICD and Edukans. On the first day, partners got to know each other during a Project Gallery Walk, where all partners presented their projects. On the same day, in a World Café setting, partners explored the essential factors for success per Star School Dimension (Learning Environment, Learning Process, Teachers, School Management and Community Involvement) and for Lobbying and Advocacy. On the second day, partners looked into the results of the programme, and more specifically into the critical moments during project implementation. Partners also presented digital products developed under C4C as well as manuals and leaflets that others could learn from. On the third day all participants undertook a field visit to Kajiado, about 90km from

Nairobi to visit a Primary School working with one of the partners, Dupoto e Maa as well as visit a TVET Institution working with the partner Nairobits. And finally on the fourth day participants discussed the learning write up they wanted to publish.

In June 2015, a Cross Country Learning event on **ICT4Economic Development** took place in Ouagadougou. The 4-day event brought together 22 partners from all C4C countries with an economic development sub-programme (Burkina Faso, Mali, Kenya, Peru, Bolivia and Ethiopia) as well as C4C representatives from IICD and ICCO. The first day of the workshop was devoted to the presentation of the economic models for the integration of ICT in the programmes, used by partners in their respective countries, the second day was reserved for sharing useful and relevant ICT tools. On the third day the participants made a field visit to Leo in the Nununa federation of Burkina Faso. The fourth and final day partners explored satisfaction of users, their empowerment and the impact ICT tools have had on the end users of the projects.

In March 2015, a Cross Country Learning event on **ICT4Health** took place in Jinja (Uganda). In the course of the 3 day workshop, 19 partners from 5 countries (Uganda, Tanzania, Malawi, Ghana and Mali), as well as representatives from Cordaid, IICD, Akvo and TTC Mobile. On the first day several partners presented the results and experiences from their projects and all partners sat together in a World Café session to discuss changes in the operations and management of hospitals/clinics/facilities, changes in behaviour and work practices among users/beneficiaries and models and means for financial and operational sustainability. On the second day, participants visited the new business premises for Jinja Diocese where presentations were delivered by UNHCO and Jinja Diocese. This was followed by a tour to Benedicts Hospital that is affiliated with Jinja Diocese. The third and final day saw presentations on Monitoring Pro-poor Health Policies (by SEND Ghana) and on e-CPD and related ICT Innovations (by NONM Malawi). Finally, partners worked together on challenges during a peer assist session.

C4C Learning Days

Besides learning activities aimed at partners in the implementing countries, the C4C alliance organised the C4C Learning Days for staff members of the alliance organisations. During these days, staff members exchange practices, lessons and developments in the sub-programmes and use the time to validate and refine the C4C approach. The days would focus on specific themes, such as ICT-led innovation (2012) or Gender and ICT (2014) and sometimes partners knowledgeable on the theme were invited to share their insights. As 2015 was a closing year, no learning days were organised on top of the large amount of meetings taking place in the countries (including three Cross Country Learning Events).

International knowledge sharing

C4C took advantage of a number of international events to share learnings and insights generated from the C4C programme with the Dutch and international development community. Depending on relevance, experiences and results, (a collection of) projects across the various country programmes were provided as input for discussion or policy advice. As 2015 focused on rounding off C4C, participation in events was somewhat less compared to other years. A selection of Dutch and international events at which C4C consortium members or implementing partner organisations provided input are listed below, including the theme of the presentation or discussion:

C4C Economic Development:

- ShareFair Addis, May, Ethiopia: Agile product development
- The Future of Farming and Food Security in Africa, June, The Netherlands: How to provide careers for young men and women in the rural agro-food sector

C4C Education:

- e-Learning Africa 2015, May, Ethiopia: Tomorrow's ICT in the Classroom for Better Quality Education
- Mobiles for Education Alliance 5th Annual International Symposium, October, USA: How tablets have improved primary education in Malawi

C4C Health:

- Med-e-Tel 2015, April, Luxembourg: Teleradiology
- CRS ICT4D Conference, May, United States of America: Africa eHealth Solutions – Sustaining Health Innovations Across Africa

- mHealth Seminar: Mobile technology in health information: what solutions for low income countries, December, UK;

Cross-cutting:

- Development Studies Association Conference in 2015, September, UK; S. Harmsen: Network Structures, Actions and Agents in ICT-enabled Development

National learning and networking

C4C national networking and learning activities include workshops and other events, online resources and networking sites and lobbying and advocacy activities. C4C believes that challenges and successes in ICT integration in development organisations can be applied to projects in wider sector policies and practices and enable larger scale adoption of proven systems or approaches. This is why C4C chose to support a selection of national ICT4D networks and their activities. A more detailed description of activities can be found in chapter 1.4.

ICT4D learning workshops

Within the ICT-led Social Innovation Process, sharing of experiences with peers is key – in order to learn and improved amongst partners, but also to collected successes and challenges that may influence C4C policies. To this end, learning workshops on the country level (sometimes per sector) were organised. Apart from exchange and learning on the projects, these workshops also looked into the organisational capacities of each partner organisations, using the 5 Core Capabilities model as a self-assessment tool (see also chapter 1.4)

In 2015 (or late 2014), the following national C4C Learning Workshops took place:

- In Ethiopia, on ICT4Education
- In Uganda, a shared event on ICT4Edcuaction and ICT4Health
- In Bolivia, a shared event on ICT4Economic Development and ICT4Education
- In Ghana, on ICT4Education
- In Peru, on ICT4Education
- In Kenya, as shared event on ICT4Economic Development and ICT4Education
- In Malawi, on ICT4Health and ICT4Education
- In Tanzania, on ICT4Health
- In Mali, on ICT4Health and ICT4Education
- In Burkina Faso, on ICT4Economic Development

Action Research

In a number of countries, C4C worked with partners and external experts in action learning activities: partners would define research areas and, with help of the local expert set up methodologies to research these areas during implementation of their projects:

- In Peru, Economic Development and Education partners, with additional support from C4C, initiated action research processes in 2015. The 2 parallel processes resulted in a final report and short learning briefs per sector. Highlights from these reports can be found in the annexes 5 and 6, focused on the lessons learned from sub-programme studies.
- In Tanzania, an action research was set up with 5 health facilities in Tanzania's Lake Zone, to reflect on the implementation of AfyaPro. The research will be finished in December 2015.
- In Uganda, all partners were trained and coached in 2014 to adopt Action Research (AR) methodologies in order to improve the effectiveness of their projects. Assumptions and hypotheses were checked while implementation was ongoing to measure if specific actions were generating the anticipated results. If not, activities would be adapted. Not only did the AR trajectory improve the quality of the implementation, it also trained project partners to generate quantitative data for better reporting and for resource mobilization.
- In Kenya, partners in the education en economic development sub-programmes worked with an external expert in 2014 and 2015 to define research questions and plan for data collection. Outcomes of the process were mostly of interest to partners, though partners and a journalist also worked on articles to present their findings to the world.

Evaluation and impact studies

IICD is a member of the Joint Evaluation Trust (JET) on behalf of C4C, a collaboration between alliances receiving MFS2 funding who joined efforts to make sure to meet DGIS requirements for Monitoring & Evaluation in the best possible way. NWO – WOTRO was contracted by JET to manage the evaluations and published calls for proposals for conducting the evaluation studies. In the case of C4C, the assessment covered eight of the C4C-supported projects carried out between 2011-2014 in two selected countries: Ethiopia and Uganda. With baseline information collected in 2012 and endline data in 2014, the central questions in this evaluation were whether the changes observed were positive and how large they were. The analysis covered three areas: contributions to the Millennium Development Goals (MDGs), to capacity development, and to civil society strengthening. All reports were published in 2015 and some of their key lessons are taken up in annexes 5, 6 and 7.

Besides the evaluations of the Joint Evaluation Trust, C4C also performed several impact studies:

Impact Studies of the C4C Education sub-programme

Two impact case studies, including lessons learned and an "Impact Road Map" of the C4C Education sub-programme was prepared by independent consultant Jigsaw Consult. Data was gathered at schools supported by C4C in Zambia and Ghana in 2013 and 2015. The report was published in November 2015 and focused on understanding, demonstrating and capturing the impact that the introduction and use of ICT is having in the programme schools related to school management and administration capacity to make effective use of ICT, student learning outcomes (attainment and participation in school) and the effects these have on student learning outcomes. Outcomes of the case studies are highlighted in annex 6.

ICT4Education in Ethiopia

Education experts from the University of Amsterdam and Edukans implemented an impact study of the C4C BEQUIP project, in which primary school teachers have been trained on a range of issues including teaching strategies, learning activities, planning and delivery of lessons, learning styles, group work and assessment, among other topics. The study was published in 2015 and results are taken up in the Featured Intervention section of the sub-programme Education in chapter 1.2.

ICT4Health: Impact of an electronic hospital management information system on finances at Nkhoma Hospital in Malawi

The University of Edinburgh conducted a research to examine the benefits leading from the implementation of the Health Management Information System (HMIS) AfyaPro, at Nkhoma hospital and nine surrounding rural health centres. The study investigates whether and how the implementation of the Hospital Management Information System called AfyaPro impacted finances at Nkhoma Hospital, to contribute towards exploring the value for money of HMIS solutions in health systems in low- and middle-income countries. A longitudinal case study design was used. The researcher had to deal with certain challenges to conduct his research, as the system implementation appeared to be less far than expected. The paper from this study is currently under submission.

Joint Cordaid/IICD studies to investigate the impact of two mobile health projects in Ghana

These studies started with field research and data gathering in 2014. One of the studies focuses on maternal and reproductive health and is being conducted by a research team at the University of Utrecht – the final report is expected late 2015, some findings from the baseline study are taken up in chapter 2.3. The second study researches participatory monitoring and evaluation of pro-poor health policies and was conducted by Jigsaw Consult researchers. This study was completed in 2015 and key lessons are taken up in annex 7.

C4C Effect Studies Economic Development, Bolivia

C4C wanted to assess the effects of ICT on economic development in Bolivia. This resulted in four C4C studies - two commissioned by ICCO and two by IICD - conducted by Bolivian research organisations INSEAD Foundation and *Emprender*. The studies focused on:

- The impact of ICT use by the Bolivian organization FAUTAPO, looking specifically at the effects of the use of Geographic Information Systems (GIS) and ICT-supported internal control systems for quality certification at the level of FAUTAPO as an association, at the level of member producers organisations, and at the level of individual producers. This study is yet to be completed.

- The impact of the use of financial services solutions in the work of PROFIT RURAL, especially in their support to agricultural producer organisations, producer group leaders and individual producers. Some highlights from this report are shared in chapter 2.1 under Outcomes.
- The effects resulting from the work of PROINPA on using ICTs as a means to reach out to farmers with extension messages, especially in Integrated Pest Management.
- The effects of the work of CIOEC, focussing on the market information network in support of the marketing of Indigenous Economic Entities (producer organisations).

The study's key research questions aim to understand whether and how the use of the ICT-enabled solutions impact the various user organisations and individual user levels, aiming to find evidence for direct and indirect benefits leading from the use of financial software for the Financial Credit Entities (EFCs), producer organisations and for the small-scale producers themselves, including e.g.: behavioural change among staff at the Financial Credit Entities (EFCs), changes in income of producer organisations implementing the financial services software platform and changes in well-being and standard of living of producers.

ICT and Gender case studies

The Gender Resource Facility conducted a study into Gender and ICT based on case studies from Kenya, Uganda and Tanzania. The study was published in October 2015 and is described in more detail in Chapter 1.3. The results from the study are taken up in chapter 2.4.

At the end of this report, a full list of resources is taken up, which includes links to different studies and other publications.

Resources

Below, the C4C alliance and their partners presents a list that highlights outcomes and lessons from C4C throughout its implementation period. The list consists of resources and studies mentioned above (for easy reference), but also some smaller studies or publications or publications prepared in earlier stages of the implementation period that were not mentioned above. Where possible, we have included links to said resources.

Overarching topics

- ICT and Gender Case Studies (Gender Resource Facility, 2015)
- Joint Evaluation Trust impact studies for Uganda (https://www.partos.nl/webfm_send/883790) and Ethiopia (https://www.partos.nl/webfm_send/883785)
- The advantages of digital Monitoring and Evaluation Solutions (publication by IICD, 2014) http://www.iicd.org/documents/the-advantages-of-digital-monitoring-and-evaluation-solutions/
- Akvo RSR in a nutshell (Akvo video, 2015) - https://www.youtube.com/watch?v=YB5CJGGujn8

Economic development

- Youth, ICT and farming (Coordinated by IICD, published in 2013) - http://www.iicd.org/documents/youth-icts-and-agriculture-exploring-how-digital-tools-and-skills-influence-the-motivation-of-young-farmers/
- Assessment of economic development projects under C4C (Coordinated by ICCO, published in 2015)
- Mobile for increased farmer production (Coordinated by TTC Mobile, published in 2015)
- Example of the use of video for production techniques: https://www.youtube.com/watch?v=h83RtIp0Ff0 (TTC Mobile)
- The impact of ICT use by the Bolivian organization FAUTAPO (GIS Systems and certification), conducted by INSEAD Bolivia, to be published in 2015.
- The impact of the use of financial services solutions in the work of PROFIT RURAL, conducted by INSEAD Bolivia (2015)
- The effects resulting from the work of PROINPA on usting ICTs as a means to reach out to farmers with extension messages, conducted by Emprender Bolivia (2015)
- The effects of the work of CIOEC, marketing of Indigenous Producer Organisations, conducted by Emprender Bolivia (2015)

Education

- ICT4Education in Ethiopia study 2011-2015 (Coordinated by Edukans, 2015)
- Impact Studies of the C4C Education sub-programmes in Ghana and Zambia; conducted by Jigsaw Consult (November 2015)
- ICT in the classroom for quality education (Position paper by IICD, 2014) - http://www.iicd.org/documents/ict-in-the-classroom-for-quality-education-strengthening-learning-and-teaching-methods-in-under-resourced-schools-in-developing-countries/
- ICTs in Education (Video by IICD, 2014) - http://www.iicd.org/documents/icts-in-education/
- External evaluation "Effective Teaching-Learning processes through ICT enabled innovative methods" (C4C and Computers for Schools Uganda, 2015). Summary: http://somaschools.blogspot.nl/2014/08/lessons-learned-from-implementation-of.html
- C4C Education Ghana Alliance documentary (May 2015) https://youtu.be/lSdY5N-Wbmw

Health

- Assessment of the impact of mobile awareness messages about Ebola in Mali (Coordinated by TTC Mobile, published in 2015)
- Paper ICT4Health impact study Nkhoma Hospital Malawi (article, 2015) – under submission
- Assessment of the impact of the use of ICT in support of participatory monitoring and evaluation of pro-poor health policies in 55 districts in Ghana; conducted by Jigsaw Consult (case study paper submitted to academic journal, IICD research brief to be published end Nov 2015)
- Assessment of the impact of Connect4Change health interventions in ACDEP's ICT in Community Health Project in Ghana's Upper East and Northern Region, with a specific focus on the impact of the use of mHealth solutions on the capacity of peer educators and health workers; conducted by University of Utrecht (to be published Dec 2015)
- ICT solutions for strengthening SRHR programmes (position paper by IICD, 2015) http://www.iicd.org/documents/ict-solutions-for-strengthening-srhr-programmes/

Online resources and platforms resulting from C4C programmes

The list below highlights some of the platforms and online resources developed by partners supported by C4C:

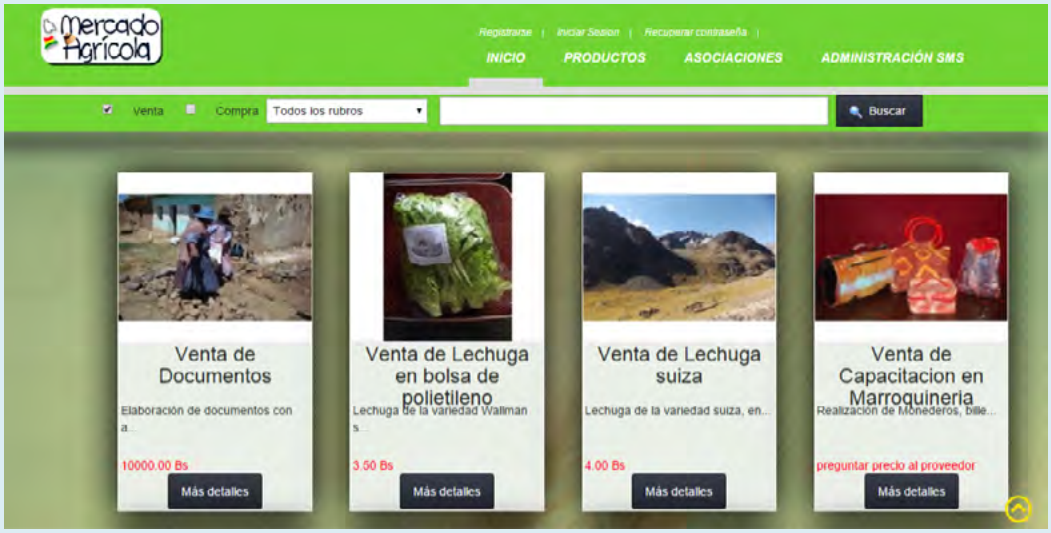
- SIMAgri (Burkina Faso), http://www.simagri.net
- EcoMercado Peru (Peru), http://ecomercadoperu.com
- YachayDigital (Bolivia, Peru), www.yachaydigital.net
- El Movimiento de Integración Gastronómico Boliviano (MIGA) platform, http://www.miga.org.bo
- Educando (Bolivia), http://www.educando.edu.bo
- YachayDigital (Bolivia, Peru), www.yachaydigital.net
- Ruta del Sol (Peru), http://www.rutadelsolperu.org

IMPLEMENTATION OF THE ICT4ECONOMIC DEVELOPMENT SUB-PROGRAMME IN THE COUNTRIES

In **Bolivia**, C4C partners focused on software that supports clear business models, and ICTs that facilitate changes in production and business conduct of small farmers. The tools allow producers and rural entrepreneurs to access markets on fair an equitable conditions and to generate sustainable income for their families. ICTs are also used to reduce the transaction costs and to expand opportunities for fair access to markets. C4C supported new partner Altagro to create an electronic platform for the marketing of camelid fibre (alpacas and vicuñas) in the Andean zone of Bolivia. Together with TTC Mobile, text services were rolled out to provide producers from different partner organisations with information on market prices, reminders for meetings, supply and demand information on specific products, credit payment reminders and updates on credit status and agricultural technology. These messages reached over 8,500 people.

Featured product

The Agridatos platform - http://agridatos.com – is on online market for the marketing of camelid fibre and other agricultural products and services from the area. On a web based system, but using text messages, people can buy or sell products like wool, skins, meat and shawls, thus creating a virtual marketplace. Since June 2015, over 2,000 producers, producer organisations and SMEs became registered at the platform, many using SMS. Users were trained in the use of the platform for marketing of their products by the organisation. Today, over 100 products are on offer.



In **Peru** the aim was to consolidate products and electronic platforms envisaged after the first two years of the programme, and to expand the training to the final beneficiaries of each project. Especially efforts to integrate e-commerce in the strategies for organic farming and sustainable tourism must be mentioned. Partner organization ANPE has been managing the Sianpe system that holds detailed information of more than 2,500 households of producers and more that 200 producer associations. The system keeps records of organic production outcomes and allows to track them by their place of origin and by producer. This way, they are eligible for the Sistema de Garantia Participativo (SGP) certification through its collective trademark *Frutos de la Tierra*. In order to promote agro-ecological products of the associated smallholder families, ANPE launched the web platform www.frutosdelatierra.com, which enables clients to buy qualitative and organic products directly from the producer. “Frutos de la Tierra” links the supply and demand of agro-ecological products in 6 regions of Peru. PROMUC in Peru launched its credit-simulator, helping clients to assess costs and benefits of loans in relation to their business plan. This allows them to opt for the most appropriate loan for their specific situation.

In **Burkina Faso**, the majority of the partners were active in the shea sector (producer organisations Nununa, Fadefso and sector wide national platform TFK) and in cereals (FNZ),

with FasoBiocarburant (Jatropha) as an outsider, and Afrique Verte as a trade facilitating organisation for producers. Two partners (FNZ, FasoBiocarburant) were not able to meet the criteria for partnership during the sub-programme and fell away. Internal communication (all), market access (TFK, Nununa), production tracking (Fadefso), and access to market prices and transactions (Afrique Verte) were the main issues addressed with ICT-solutions. SIM-Agri, a platform for price information and food products marketing match making was launched as a joint activity of Table Filière Karité and Afrique Verte. The project used text messages to connect supply and demand. The messages to do so reached almost 4,800 farmers.

In **Mali**, C4C initially chose to work with partners who already had a relation with either ICCO or IICD - some of these were facilitating organisations for farmers to trade their products (Mobiom, Yiriwa, Afrique Verte) and farmer interest organisations (CRCR), and some were producer organisations (SKB, Coprokazan). The idea was to focus on two value chains, sesame and shea (Mobiom, Yiriwa, Afrique Verte, Coprokazan). Unfortunately, both Mobiom and Yiriwa ran into problems during the inception phase and could not integrate the sub-programme, while Afrique Verte only stepped in at a very late stage. Next to organisational strengthening and improvement of internal communication, C4C and partners addressed issues of market access (SKB, CRCR, Afrique Verte), production tracking (Coprokazan, CRCR), and access to market prices (Afrique Verte). CRCR as a farmer interest organization did not fit in the value chain development methodology, but proved to be very efficient in reaching out to, sensitizing and training large numbers of farmers. The same SIM-Agri platform and web interface that was rolled out in Burkina powers the SIM-Agri implementation in Mali. An agreement to cooperate with the national rice producers/processors platform was reached in support of the system.

In **Ethiopia** the economic development sub-programme focused on expanding the training on ICTs to a larger number of Farmer Marketing Organisations, from 50 to 100. The focus was on using mobile phone for farming and price-information, and connecting FMOs to Unions. The FMOs played a role in buying and storing farmers' produce, especially grains and beans, and the ICTs helped in the logistics of transport and marketing, e.g. for selling directly to the Union, or communicating current prices. The Terra platform for price information was launched, however currently few farmers in the Ethiopian consortium of 5 implementing organisations are using it. The launch was delayed, and the Ethiopian partners met some accounting problems that forced C4C to withhold payment of the last year's funds.

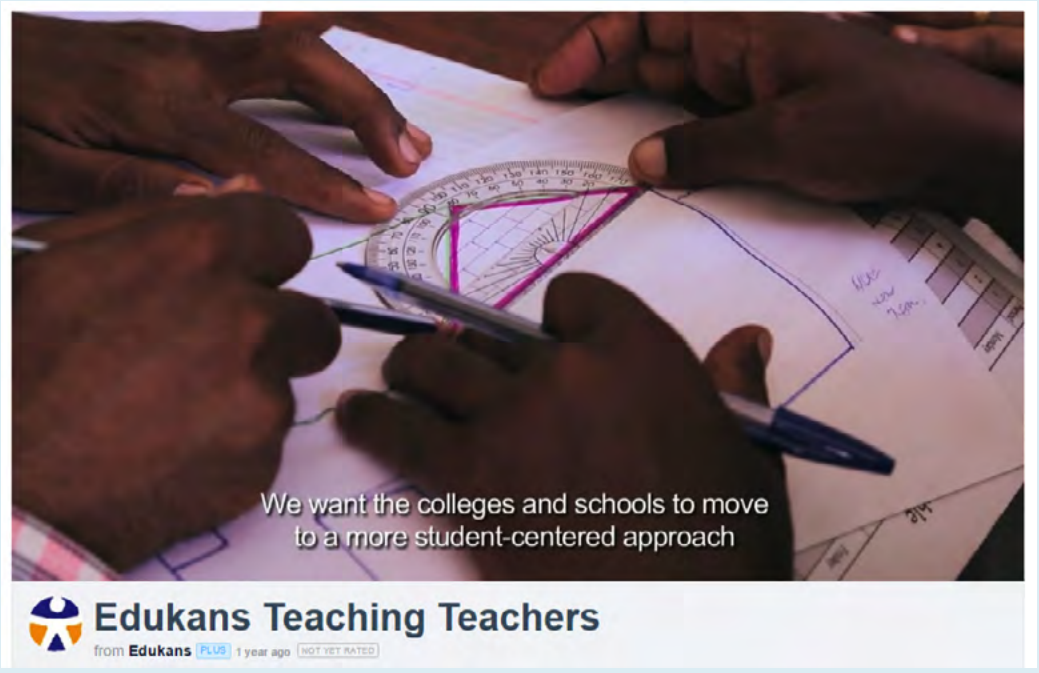
The economic development sub-programme in **Kenya** focussed on the provision of market and price information using text messaging and the dissemination of information for improved production using mobile video clinics, text alerts and through rural information centres. Producer organisations were supported in the use of ICT tools to engage their members and to improve administration of their organisation. Over the years of implementation, the sub-programme started to engage more and more young farmers, who were attracted to the use of innovative ICT tools and new opportunities to make a living. In this last phase of the project the sub-programme in Kenya paid much attention to sustainability of the projects and services: meetings and workshops were held to guide partners in business plan development, focusing on sustainability. Partners actively used text messaging to engage with the farmers they serviced: with TTC Mobile they implemented platforms to send out organisational information, technical production information, training notices, and awareness messages regarding production. In Kenya, the platforms were also used to collect feedback from partners and even to experiment with interactive voice messages – to reach those farmers that cannot read and write. Almost 8,400 farmers were reached with these messages. Quite successful was also the market price information platform rolled out together with local technical service provider Mfarm. Their messages reached 20,000 clients in the C4C programme areas.

IMPLEMENTATION OF THE ICT4EDUCATION SUB-PROGRAMME IN THE COUNTRIES

In **Ethiopia** focus of the education sub-programme during the implementation period was on improving the teaching and learning process in primary schools, on improving the school leadership and on efficient management and administration. Partners from 15 implementing organisations installed ICT equipment at 75 schools and 3 colleges, trained teachers at these same schools, developed a custom made Education Management Information System (EMIS) suitable for the Ethiopian schools and trained key people at schools and CBOs (community based organisations) in the use of EMIS. Building on the 2014 training on Active Learning methodologies using interactive video analysis, the different modules from this sub-programme were put together on an interactive DVD called "Teaching Teachers", which was aptly presented in a conference with over 80 participants, including government officials and other policy makers. As a result of the investments in capacity development and equipment, the computer skills of teachers and students were enhanced and teachers were able to use ICT for lessons preparation and could share them with colleagues. Trained tutors not only integrated new Active Learning methodology in courses for in-service teachers – in this last phase of implementation they reached out to more tutors to spread the results of the sub-programme even further.

Featured product

The DVD "Teachers at Work" can be viewed here: https://vimeo.com/101520767 The video explains the Active Learning methodology following Ethiopian teachers and students in the classroom.



In **Ghana** the C4C Education sub-programme focused on improving the quality of teaching and on improving learning and school management in primary, junior high schools and vocational training institutes by integrating ICT. At the end of the implementation period, the sub-programme worked in 58 schools, 3 teacher training institutes and 4 vocational training centres. Focus in 2015 was on equipping the final schools, train teachers of primary and secondary schools and vocational training institutes in basic ICT skills and ICT pedagogy. Trained teachers went on to produce their own digitalized teaching materials. During the five years of C4C, 535 teachers and 161 administrators and circuit supervisors of the Ghana Education Service were trained in ICT integration. A total of 32,000 students has been reached both directly (9,986 in the monitoring protocol) and indirectly. Under the C4C programme a local ICT group TechSupport in collaboration with Savana Signatures (an implementing partner) customized a school management information system based on the requirements of the Ghana Education Service and all C4C Education partners. At the time of the evaluation, the

SMIS was implemented in 27 of the 58 schools. It enhanced school based data management and decision making. For example the continuous assessment forms which show the results of the students could be created when needed, while it used to take several days before the SMIS was implemented. The five education partners (Savana Signatures, Ibis in Ghana, Presbyterian Education Unit, Wadep and Peps-C) formed with the Ghana Information Network for Knowledge Sharing the C4C Education Ghana Alliance to sustain the ICT in Education programme after the programme funding will end to conduct joined advocacy activities and joint resource mobilisation. The C4C Education Ghana Alliance[3] organised a lobby and advocacy event for different education stakeholders where they presented the results of the research they conducted in collaboration with the University of Development Studies regarding the availability and use of ICT in schools in Northern Ghana.

The **Malawi** Education sub-programme focused on improving teaching, learning, school management and community involvement in basic and vocational schools. Local partner Don Bosco improved ICT facilities at a vocational training institute and at a primary and secondary school by installing a computer lab and training of teachers. At other schools, simply installing ICT equipment was not enough: the majority of the schools had to be outfitted with solar panels for energy supply as well. At vocational training institutes, primary and secondary schools, ICT was used in lessons by trained teachers and school management was improved using School Management Information Systems (SMIS). The improvement of school management using ICT even spread out to 2 additional schools in other regions where Edukans worked. Training went beyond teachers alone: several schools have trained parent-teacher associations in the use of ICT; knowledge of ICT and the SMIS gave them more understanding of budgets and decisions made at the school. Local partner ACEM used mobile telephones to enhance communication among teachers, parents and the wider community to address issues like gender-based violence, child labour and teacher absenteeism. Under C4C, a pilot was also started to test the use of tablets in the classroom (TeachTab and LearnTab). The project was done in collaboration with the Malawi Institute of Education to develop digital content for the tablets within the curriculum. Another aspect of the sub-programme in Malawi was the roll-out of a computer-based sexuality education project ("The World Starts With Me") to 5,000 pre-service students at 10 Teacher Training Colleges (TTC). These TTCs could then improve the quality of teaching in the field of comprehensive sexuality education.

In **Zambia** the Education sub-programme was implemented by 10 partners. However the collaboration with 4 out of 10 partner has been terminated preliminary because of ill-delivery. The programme focused on improvement of the quality of education, the relevance of education and increased participation of parents and representative bodies of children. The instalments of ICT equipment was successful at 52 schools and 17 institutions. That said, the sub-programme in Zambia struggled with teacher training and organisational development. In the end, 2053 teachers were trained and 3778 students use the ICT tools in their classrooms, as well as 904 teachers and 1658 students in vocational training. The Mpelembe project succeeded in increasing participation of parents and representative bodies of children – 6 networks of parents and grassroots organisations used ICT to monitor the education indicators from their schools. TTC Mobile helped set up SMS services to assess the satisfaction of active apprentices and also track former apprentices and to send out announcements to students about upcoming exams, school fee payments, lectures and time-table changes. These services reached over 4000 people. An additional project in Zambia focused on the use of tablets and smart boards at a special needs school in Kitwe, where children with disabilities used the ICT tools for their learning. Learning by doing is very important for the students with Down syndrome and the tablets allowed them to touch and experience the learning process in a more creative and interactive way. In addition to this, the use of smart boards allowed other special needs students to communicate and work together as well as interact with each other through creative and playful activities such as singing and painting.

In **Kenya** the Education sub-programme focused on schools and vocational training institutes in remote, pastoralist areas of Kenya (schools with Masaai, Samburu, Pokot and Turkana students). The aim of the sub-programme was on improved school management through ICT, the use of ICT for better learning in the classroom, ICT for better vocational training and using ICT for improving the awareness in communities. This was done by installing ICT equipment and energy solutions (solar panels) at schools and vocational training institutes and to train all teachers and instructors in their use. As a result, schools in the sub-programme gained access to more consistent power (important as they are often boarding schools where students study late at

3 http://c4cghanaalliance.org/

night), effective learning materials, and better learning and teaching in an ICT lab setting or via a simple interactive white boards in the classroom. 15,118 students, often in remote, rural locations used ICT in their schools. Besides ICT in the classroom, teachers in 25 primary schools and 3 vocational training institutes now use School Management Information Systems to better access and store information on for instance budgets, grades and attendance. The integration of ICT in the vocational training institutes prepared students better for the labour market by using ICT tools to enhance teaching of the subject matter, but also to improve entrepreneurial skills.

In **Uganda** key activities of the Education sub-programme included teacher training on Active Learning techniques using interactive video, use of ICT for community empowerment in education, enhancement of effective teaching-learning processes through ICT in primary and secondary schools and improvement of literacy and numeracy in primary education through ICT. The C4C Education sub-programme was implemented through 10 project partners. 60 teachers, 80 tutors and 100 supervisors were trained in Active Learning Methods using video to record and review their lessons – this was much more than expected originally. A manual for active learning and teaching was also developed. It was not just that teaching improved through training: the provision of computers motivated teachers to do better as well. Students became more involved in the learning process as they gained access to computers in the resource rooms for research. Further the quality of lessons produced by teachers improved since they have gained skills and tools to integrate videos, images and audio in their lessons. Another project in Uganda was a project for secondary school teachers in English[4]. Together with *Computers for Schools Uganda* the schools developed content and an ICT-based method to deliver the lessons in the classroom. A combination of SMS messages and radio talks was used to have parents become more involved in school related affairs concerning their children. TTC Mobile helped set up SMS services on parent-teacher interaction and to remind people of school activities – over 10,000 people were reached through these services.

In **Bolivia** the programme focused on the efforts of 6 local partners to improve teaching, learning and school management through ICT, develop teaching and learning materials with the help of ICT and lobby and advocate government policies to promote the use of ICT for Education. In total, 4928 teachers were trained. Teachers developed classroom plans implemented at 24 educational units as well as computer based education materials. Developed products were demonstrated during educational fairs in Bolivia. 45,400 students used ICT for learning. In Bolivia, partners have a strong tradition of monitoring the work they do using ICT – 14 educational units applied monitoring of learning online twice a year. Six sub-programme partners in Bolivia led by implementing partner CEPAC established the Educando online platform for knowledge exchange, that allows them to share their ICT4Education materials – 217 teaching plans were made available and the platform already reached 1,500 teachers and 20,000 students with the support of local partnerships. It also built a Facebook group with 472 fans at the time of the study. Since not all visitors to the platform were students and teachers of the sub-programme, the access to these materials has expanded significantly. Multimedia products have the potential to rescue culture and customs and can be marketed. More attention should be paid to external stakeholders such as government involvement to achieve sustainability. Together with TTC Mobile, SMS campaigns and text services were set up that gave information on education, facilitated information between teachers, parents and schools and that reminded people of school meetings. More than 10,000 teachers, parents and students were reached through these messages.

Featured product

On the website Educando - http://www.educando.edu.bo/ - , C4C partners from the Bolivia Education sub programme shared ICT resources related to education aimed at better teaching in the classroom, improved learning for students and use of these resources in ICT centres. At the time of conducting the evaluation, 233 resources for different education levels, could be accessed through the platform.

4 More information can be found here: http://somaschools.blogspot.nl/

In **Peru** the Education sub-programme aimed to improve the quality of education through ICT, to build capacities of teachers in Intercultural Bilingual Education (IBE) through ICT and to develop education materials through ICT. The programme built upon a network of basic education organisations (*Ruta del Sol*) earlier established by ICCO and Edukans, forming a group of 6 partners for C4C. The overall objective was to contribute to and consolidate the transformation of education of the marginalized rural population of the Andes, departing from their cosmic vision and reality, in order to overcome poverty and to achieve human development. The sub-programme led to 572 teachers at 60 schools to be trained to use ICT in education and 9,474 students using ICT in their classes – according to one study, 73% of students showed an improved performance in school. Activities in Peru have been carried out successfully and according to schedule. Partners and teachers developed digital IBE learning materials and teachers were trained on how to use these materials and ICT in general. Parents and communities of 22 schools were trained and involved in weekly bilingual school radio programs concerning school issues, local culture and intercultural and bilingual education. These kinds of activities encouraged participation and mobilization of the wider community, like in Bolivia where the programme established a platform[5] to put learning materials online and enlarged the outreach. In Peru, the platform was established shortly before the evaluation and outreach has not yet achieved scale as in Bolivia, but expectations of local partners are high. The sub-programme in Peru contributed clearly to the achievement of MDG 2 (achieving universal primary education) and MDG 3 (promoting gender equality and empowering women) and was innovative in integrating ICT for these purposes.

5 http://www.yachaydigital.net

Annex 3

IMPLEMENTATION OF THE ICT4HEALTH SUB-PROGRAMME IN THE COUNTRIES

The **Ghana** Health sub-programme focused on the implementation of Health Management Information Systems in hospitals for improved decision making and on the introduction of eLearning at nursing colleges. Furthermore, the sub-programme aimed on improving participatory monitoring and evaluation of National Health Insurance Scheme in 50 districts and on the improvement of reproductive health for adolescent youth and building the capacity of traditional healers including traditional birth attendants – all using ICT tools. 4 partners were active in 2015. Implementing partners SEND and ACDEP have been involved in C4C for Health since 2011. Savana Signatures and BoldTech only started their involvement in the health sub-programme in 2015, but as they were already involved with the C4C alliance in other ways, their introduction went smoothly. All partners achieved good results. Savana Signatures successfully trained and equipped 50 midwives, 50 community health nurses and 4 ICT champions to organise knowledge sharing sessions with expectant mothers. The aim was to have those meetings organised at the health facilities monthly, but they were actually organised twice per month, with 60-120 participants per session and contributing to increased antenatal care attendance. ACDEP has improved the HMIS systems of the clinics involved, as well as information sharing between the 10 rural health centres and the health volunteers (TBAs, TMPS) in the rural communities through text messages. Together with TTC Mobile, text messages were also shared on contraceptives and sexual rights and an interactive quiz via text with messages on HIV/AIDS was rolled out. These messages reached almost 3200 people. Furthermore, ICT centres have been used to provide SRHR information to youth through peer educators.

In **Malawi**, the Health sub-programme uses ICT in Community Home Based Care focusing on women's health, on the implementation of electronic medical records and Health Management Information Systems in hospitals in Malawi, on improving access and quality of home based care and antiretroviral therapy (ART) health services through mobile SMS and finally on ICT-based continuous professional development (CPD) of nurses and midwives. Local partner NONM has succeeded in making the use of computers and e-learning of specific value in the continued professional development (CPD) in Malawi. ICT equipment has become available at 31 project sites, content for e-CPD has been developed, ICT skills have been enhanced for many health staff, including female and older nurses. Many nurses have used and are still using the e-CPD to further develop their knowledge on patient care and keeping up to date with the latest developments in health care provision. IICD and NOMN established a device leasing initiative which allowed nurses to purchase a tablet or smart phone to access e-CPD. A monthly pay back scheme was in place which fed into a rotation fund. The project with Nkhoma hospital has increased knowledge on sexual reproductive and maternal health through pre-formulated SMSs to community volunteers, women's group facilitators and key informants. Drug adherence has improved due to mobile SMS reminders and reporting has improved for volunteers and this has been made easy by using *Commcare* on mobile phones provided to them. Together with TTC Mobile, NONM sent out biweekly SMS messages for members to improve access to professional know-how, share information about events, trainings and workshops that reached 2500 people.

In **Tanzania** the main focus of the C4C Health sub-programme has been on improving health care and management with affordable ICT solutions accompanied by training and improved working practices. The step-by-step approach of the social innovation process combined the introduction of ICT applications with change management, learning and improvement in health care processes. AfyaC4C in Tanzania has enabled and supported 18 health facilities in using electronic health management information systems often linked to financial systems in order to support the entire patient flow and key management processes in the health facility. This included patient registration, consultation, lab, pharmacy, billing etc. ICT has improved efficiency in those health facilities as well as increased and made more transparent income from patient payments. Patients were very satisfied with the detailed receipts which show exactly what they had to pay. Partner ELCT has also been involved in providing HMIS systems in software and training on patient registration systems in health facilities. In total 15 health facilities were served, making a total of 33 in Tanzania. ELCT also contributed to the availability of telemedicine services for (patients from) distant health facilities that do not have all capacities required for their patients but for whom referrals might not be a feasible alternative either. It was set up

to operate the Tanzanian Telecentre Network, situated around Haydom. However, quite some challenges occurred as it meant a different way of working. A whole change management and training approach was developed to institutionalize the eHIS systems. By 2015 this has been well developed and health facilities continued using the systems. Problems occurred with power supply. The challenges with software development were solved by better structuring the work of local programmers.

In **Uganda** the Health sub-programme focused on the strengthening of health facilities and care outreach programmes with electronic patient registration management systems and Hospital Management Information Systems, on building health workers' capacities to use ICT for management and administration purposes and on the provision of good quality information to patients and health workers using ICT. Furthermore, the sub-programme supported community based organisations to reach out to young mothers and children through the use of ICT and on strengthening health facilities by integrating ICT in their Performance Based Financing systems. The same four partners have been part of the C4C Health sub-programme in Uganda from the start till the end. Although their projects are very different in nature, it can be said they have all been very actively involved and creative in developing their projects and making them sustainable. The Ugandan National Health Users'/Consumers' Organisation (UNHCO) has reached the intended 3000 beneficiaries and has been able to use their input and opinions for feedback to health facilities to make sure the services provided have been improved, empowering health unit management committees, while also lobbying for an e-health policy at national level. Regular patient satisfaction surveys done with smartphones has given voice to patients and resulted in numerous improvements in the health facilities under responsibility of DHO Jinja. Health Child has strengthened the capacity of Village Health Teams (VHTs) to deliver quality maternal and child health information to communities, both at health facilities and in the communities. Women have been stimulated to save money during pregnancy to be able to pay for the items they need for delivery and men have been involved as well, to increase their involvement in the health of their wives and children. The text and voice messages that Health Child sent out together with TTC Mobile on maternal and child health were shared with over 6000 women.

Focus in **Mali** was on the improvement of community health as a whole, with different projects on particular elements of the base of the health pyramid, such as:

- the establishment of Clinic Management Information Systems to improve the efficiency of Community Health Centres, allowing clinical staff to spend more time on effective health care,
- the integration of video and multimedia in IEC awareness raising sessions at community level, allowing a higher outreach and a higher impact on behaviour change,
- the use of multimedia to enhance the understanding of the regulatory framework around Community Health Centres by city council representatives and members of Community Health associations,
- the use of cell phones by Community Health Workers to enhance household data collection, allowing an ultra rapid response on diseases related to mother-and-child health (e.g. malaria, diarrhoea, respiratory problems)
- telemedicine applications via internet and mobile phone aimed to improve the capacity of Community Health staff to diagnose and treat patients, and e-learning to help Continuous Professional Development (CPD) and lift the isolation of health staff in rural areas.
- an interactive SMS awareness programme on malaria and Ebola that reached over 20,000 people.

C4C project funding stopped by the end of 2014, but with the exception of the campaigns on regulatory issues and on Ebola, all activities continued independently or with other funding in 2015.

Annex 4

PATIENT SATISFACTION DATA COLLECTION FOR THE ICT4HEALTH SUB-PROGRAMME

As partners collect more and more data on the ground, so do they collect data on satisfaction of their own patients and clients. This also means the data for the MDG indicator on patient satisfaction now comes directly from them. Some examples from the countries:

BoldTech in Ghana: The sub-programme did not include an outreach component. In a related but independent study, patients visited the facility mainly because of the perceived quality of services. The presence/use of technology did not feature as a major pulling factor.

Health Child Uganda: Taking an average of the client exit surveys conducted in the project, of a total of 4549 clients, those completely satisfied with the MCH services received through project were 76.2%, those some what satisfied were 18%, those not satisfied were 4% while those who declined to give a response were 1.8%

ACDEP Ghana: The Presbyterian Primary Health Care (PPHC), Bawku undertook a Client Satisfaction Survey (CSS) in December 2014 as part of its planned surveys to assess the quality of services rendered at the four PPHC health facilities. This survey among 400 clients of the different Health facilities showed that 99% of patients waited less than two hours before being able to see a doctor – 85% found their waiting time reasonable. 76% of respondents was very satisfied and another 18% was satisfied with the health facility they visited.

Afya C4C (Tanzania): In 2014, client satisfaction assessments were carried out at different health facilities. Though initially the idea was to perform one assessment each year of the C4C programme, this idea was abandoned as the local team was already dealing with implementation challenges - a client satisfaction assessment was therefore carried out only once. One such assessment aimed to identify if the programmes AfyaPro and the Wazazi Nipendeni campaign improved the quality of health services and improved client satisfaction at the health facilities in Mwanza area and Sengerema district. The participants were asked 18 questions, 318 interviews were collected from clients of health care within the 9 participating health facilities from Mwanza City and Sengerema District. Of those participants 83% were satisfied with the services in the facilities and mentioned that the waiting time through the facility has reduced since there are computers in the clinic. For those who were registered for the Wazazi Nipendeni campaign mentioned that the programme is good since people learn more about pregnancy and child birth, but a major problem is the lack of network in the rural areas of Tanzania.

Section II
ANALYSIS OF SUB-PROGRAMMES AND CAPACITY DEVELOPMENT

At the end of the implementation period of Connect4Change (C4C) – and the end of the MFS2 funding period – the C4C alliance would like to present an additional section to the report to allow room for analysis of the results. This section discusses whether the programme – and its different sub-programmes – showed the results projected at the start of implementation – and if not, why? Further, this section looks into the lessons learned within the result areas and at challenges in the preparation, implementation, closing and evaluation of the programme. Finally, it gives recommendations for future programmes, policies, and for collaboration in alliances.

The C4C alliance is excited to present the outcomes of some highly valuable studies that came out of the C4C Learning Agenda. The results of those reflections and conclusions from the studies are taken up in this analytical section of the report. It is important to note that, to a large extent, this section has the same structure as the previous “Annual Report” section. The two sections are interconnected: where the annual report shows what happened over the last year (and in some cases: over the last 5 years), this section focuses on why it happened, and what can be learned from it.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Chapter 2.1

ECONOMIC DEVELOPMENT MDGS AND SUB-MDGS

As stated in the first section of the report, the goal of the ICT4Economic Development sub-programme was: *'Improved income and employment opportunities for 650,000 small-scale producers and entrepreneurs organised in 200 producer organisations supported by 24 partner organisations in 6 countries through improved productivity, better access to markets, financial services and institutional development by using ICT'*.

The programme was implemented in 6 countries (Peru, Bolivia, Mali, Burkina Faso, Kenya and Ethiopia[1]) and had a broad focus on everything from improving access to market information and information related to production techniques, to improving information and communication in producer organisations to support institutional and financial management and planning.

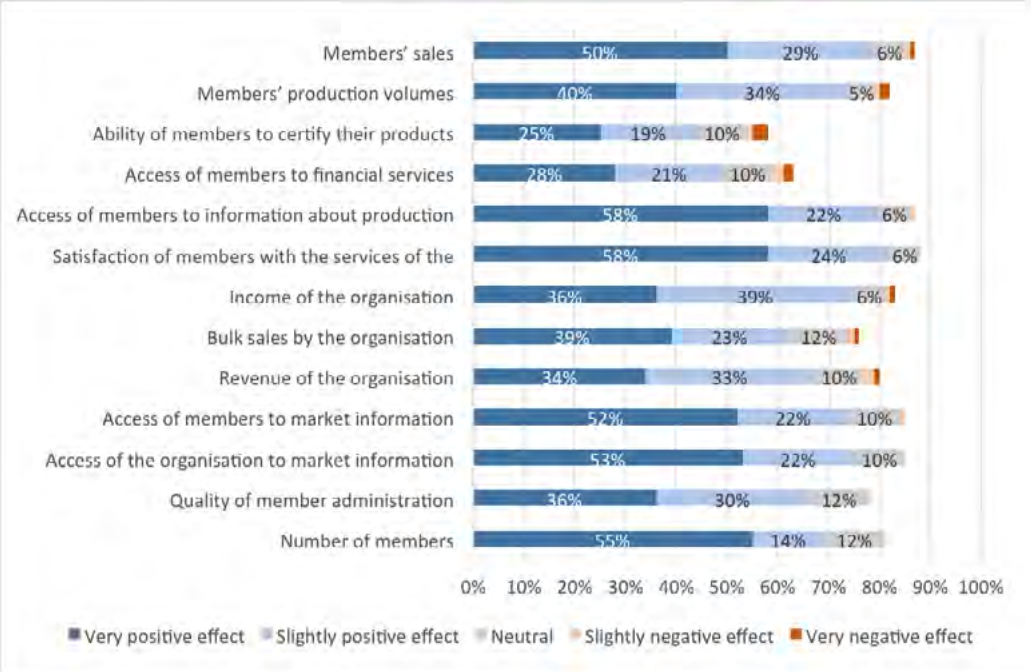
Key outcomes

In chapter 1.2 on the economic development sub-programme, it already became clear that the number of smallholder farmers, organisations and producers trained greatly surpassed targets originally planned for. This chapter looks at the outcomes of the sub-programme.

Analysis farmer organisations' ICT solutions

In the first section this report already highlighted some outcomes of the questionnaires collected among producer organisations implementing farmer ICT solutions. Questionnaires were filled (in late 2014) by 157 respondents from 148 producer organisations with a total member base of 120,000 (an average of 800 members per organization). 30% of their members were female. In the first section, we looked at the data related to the kind of solutions used by the organisations as well as their thoughts on sustainability of the implemented solutions. The same respondents also answered questions regarding the effect they saw the ICTs had on different aspects of their farmer organisation.

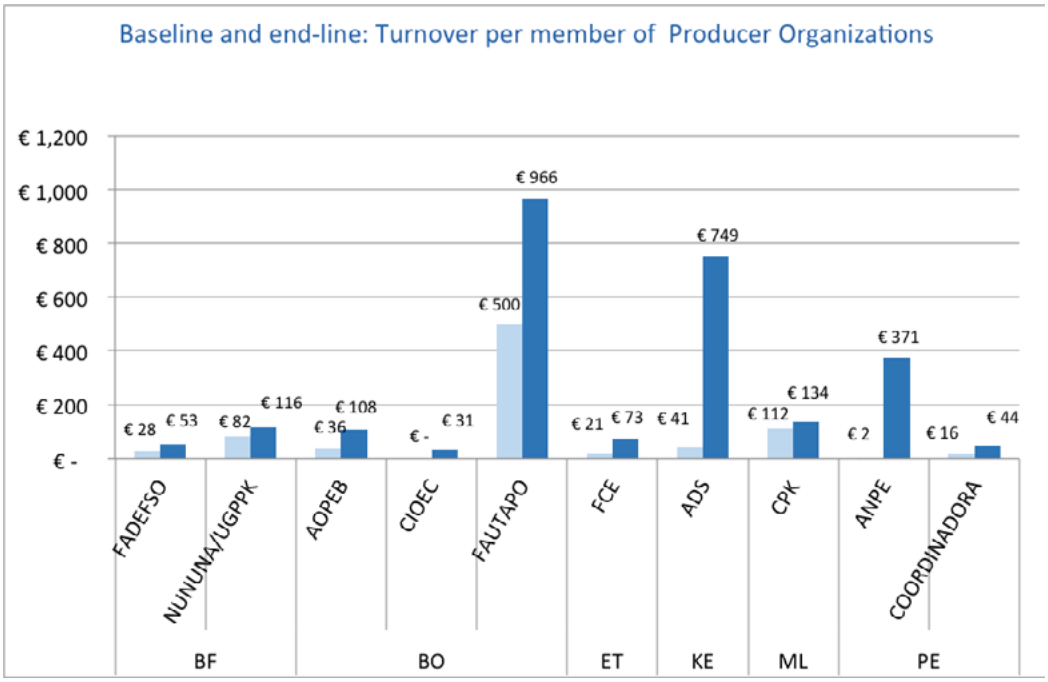
When asked about this effect, most respondents indicated a positive or very positive effect. Interestingly, the effects were not limited to those immediately related to the solution in place. For instance: members indicated (strong) positive effects on the access to market information and on the quality of the member administration. As many organisations have used the solutions that contribute to this, that seems logical. At the same time though, the solutions also contributed to outcome level effects like members' sales (79% (very) positive effect), production volumes (74% (very) positive) and even the number of members (69%) and income of the farmer organisation (65%).



1 The programme started in 7 countries, but after 2013 was phased out in Zambia

Outcomes: turnover of producer organisations

C4C alliance partners have closely monitored the turnover of a number of producer organisations as a result of their collaboration with Connect4Change. The below graph gives an overview of turnover per member as reported by the partners in the latest available reports, compared with baseline data compiled at the start of implementation



For producer organisations with a relatively small or constant membership base, increasing turnover substantially is already quite an achievement. There are however also partner organisations such as FADEFSO (Burkina Faso) and ADS (Kenya), that managed to increase their number of members while at the same time increasing their turnover per member, which is an extraordinary achievement. The relatively high turnover reported by Fautapo (Bolivia) concerns organic export quality quinoa. The high turnover data from Kenya relate to fresh potato, sweet potato, onion and tomato sales, where both prices and productivity have increased more than two-fold during the scope of the C4C implementation, due to availability of price and productivity information.

Reflecting on income increases in the sweet potato chain in Kenya, the implementing partner reported that farmers are now able to bargain for better prices and sell to competitive markets. This, coupled with improved farm productivity, resulted in improved gross margin per acre. Farmers are currently receiving an average of 22 Euros/bag and with a yield of 30bags/year; the annual turnover per farmer has thus increased from 160 Euros to 660 Euros. The 2015 evaluation of the Kenya economic development sub-programme (see below) also found that the income effects of the ICT solutions were substantial: 68% of farmers had an income increment of 20-25% compared to previous production seasons – 11% had even increased their income with more than 25%.

In Burkina Faso, in the 2014-2015 harvesting season, FADEFSO delivered 936 tons of shea nuts, compared to 213 tons in the baseline year (2010-2011), increasing from 4 to 26 municipalities in the South-West of Burkina Faso, and now selling nuts of over 15.000 women, where in 2010 only 2500 women delivered to FADEFSO.

Outcomes: Price information systems

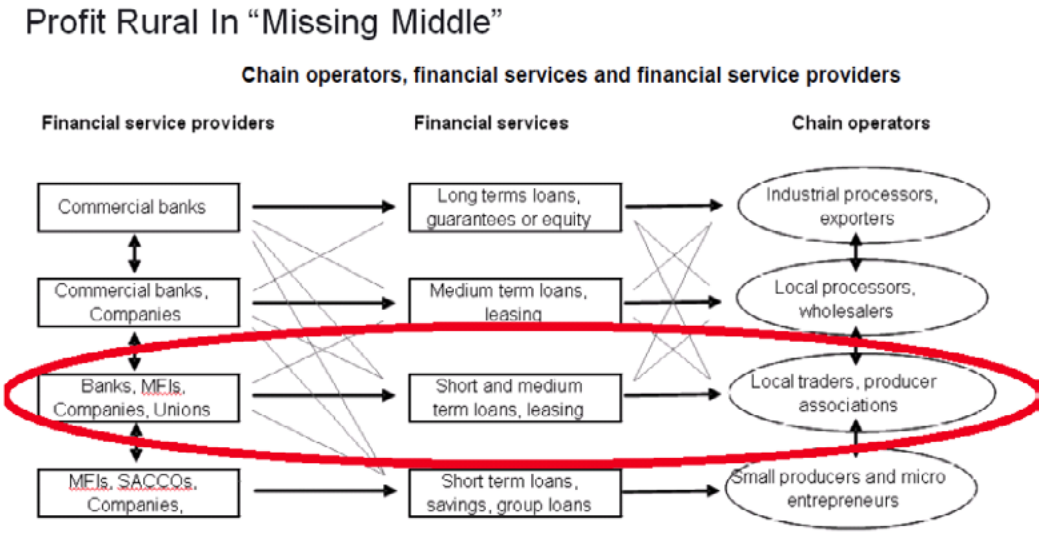
Price information systems in Mali and Burkina Faso, as implemented by *Afrique Verte*, have realized large deals for trade in agricultural products. In Burkina, sales volumes of over 92 Million Euro are reported, in Mali the six largest rice deals supported by *Afrique Verte* and the rice sector umbrella organisations PNPR cover 1750 tons, with a value of at least 465 thousand Euro. The number of individuals subscribing to these services is still limited, but in Burkina Faso a large number of registered users (160) are producer organisations, with an estimated total membership of over 6,500 farmers.

In Kenya, C4C partners worked from the start with a (then) start-up market price information provider called M-Farm. Evaluators conclude that over 96% of the farmers that C4C trained and

linked to M-Farm reliably received market updates through cell phones and other ICT channels. These kind of messages had significant impact on production and on marketing of produce. About 80% of the same farmers had increased production and yield due to the fact that they were more motivated to grow, now that they had an opportunity to sell their produce for a decent price. Most farmers (79%) registered increased profits and 72% realized increased sales volume. Farmers also reported increased demand for their farm produce (69%) and increased supply of farm produce to the market. Slightly over 50% of farmers also registered decreased post-harvest losses as a result of finding a buyer in time for perishable fresh products like tomato, onion, potato and sweet potato.

Outcomes: Financial Services

In Bolivia, C4C supported *Profit Rural* with financial management software and training to improve the management of credit provided to producer organisations (*entidades financieras de productores (EFP)*). Such software not only made business more efficient and transparent for *Profit Rural*, it also became compulsory under new Bolivian legislation. C4C helped organisations implement and use the software. This resulted in 1464 clients (456 women) receiving individual loans. Three sectoral EFPs under the umbrella of FINDEPRO were enabled to properly manage credit for agricultural finance. At start of implementation in 2011 FINDEPRO provided loans valuing over 2.5 million dollars (US) for 650 clients – at the end of 2014 this amount had increased to over 4.7 million dollar provided to 1464 clients. Two EFPs under the umbrella of FINDEPRO also developed mechanisms for savings. The project helped to create an enabling environment for value chains, which need appropriate financial instruments, by addressing the "missing middle" between microfinance and commercial bank loans.



In Peru, C4C supported PROMUC, a consortium of 7 rural microfinance institutions aiming to provide credit to 100.000 clients, mainly women, associated in over 1.100 *bancos communales*. At the start of the project, clients were trained on financial issues and the use of SMS for financial management. This way, SMS served to inform them of their loan balance and repayment due dates. Subsequently, the project used the platform to send out messages related to health and education. Furthermore, the use of ICT tools enabled the microfinance institutions to better monitor performance of their individual branches. In 2015, 14,538 local groups (total membership almost 160,000 clients) received credit of almost 66 million dollar (US). Over 46,000 members received training, and currently more than 24,000 use the SMS options. Messaging costs are covered by a small increase in interest, paid by the clients. The latest innovation is a Credit Simulator developed by the project, which helps clients to project the costs and benefits of their investments quite similar to a business plan. Since its launch, this new software has received over 3000 applications, pre-assessments, thus making sure that its users make the best possible financial decision.

Though the bulk of C4C interventions related to financial services happened in Latin America, partner organisations in Kenya and Burkina Faso also linked individual agricultural producers and (micro) finance institutions. As a result, in Kenya almost 3200 small-scale farmers and entrepreneurs were reached with innovative rural financial services, like Jifaidi SACCO (a savings and credit society that is advancing loans to farmers at interest rates as low as 1% per month) or by other microfinance institutions that are now giving loans and farm inputs to farmers. In

Burkina Faso, partner Nununa supports its local chapters to manage rotating savings and credit schemes, integrating their accounts in the individual account for each member. Especially in Kenya, due to the use of ICT tools both farmer organisations and individual clients are now more organised in their day-to-day business affairs, applying for loans and getting loans approved much easier.

As a result of the C4C Economic Development sub-programme, more people have become actively engaged, in remunerative value chains: especially in Burkina Faso we see steadily increasing membership of shea producer organisations and the spread of the opportunities within the organization. In Kenya, ICTs have helped our partner organisations to scale up from around 4,000 farmers to over 16,000. This provides new employment opportunities – not in the formal sector, but referring to the provision of (more) remunerative work, in terms of increased productivity per household, per hectare and possibly also per hour.

Conclusions:
The ICT4Economic Development sub-programme in the 6 countries has reached more than the 650,000 small scale farmers and entrepreneurs it was aiming for. The monitoring of producer organisations, financial service providers and individual producers has also shown that the sub programme improved incomes and employment opportunities.
Apart from the C4C goal for Economic Development, the sub-sector programme also contributed to the first Millennium Development Goal, which is "to eradicate poverty and hunger", and especially to two specific targets in this goal: "halve the proportion of people whose income is less than $1.25 a day" (1a) and "Achieve full and productive employment and decent work for all, including women and young people" (1b). The outcomes realized in the sub programme Economic Development related to increased incomes for small scale producers, to improved productivity and employment opportunities and the specific attention to women and youth in the programmes, seem to confirm this.

Lessons learned

C4C organised and participated in a number of learning and evaluation activities described in chapter 1.6 on the learning agenda. Besides the Joint Evaluation Trust activities, the ICT4Economic Development sub-programme was reflected upon during Learning Days (for the C4C alliance members), Cross Country Learning Events (CCLEs), annual Learning Workshops in the countries, and in independent evaluations and specific studies such as the Youth, ICT and Agriculture. All of these activities together amounted to a lot of interesting lessons. In this section, some overarching lessons are shared as well as the lessons from the Economic Development CCLE. Highlights and key lessons from specific studies are gathered in Annex 5.

Key lessons:

- It took quite some time to orient and align alliance partners and local partner organisations on the necessity to take a **value chain perspective** on the economic sectors we chose to operate in, rather than a perspective of "capacity building to NGOs". However, the effectiveness of interventions seems to be highly correlated to the "systemic" view on the chains and sub-sectors in focus: best results in terms of increased producer organization turnover are reported in well-defined chain approaches, such as in Kenya, and in the shea sector in Burkina Faso.
- In the agricultural sector characterised by bulk production, spot markets and price competition, a value chain approach may not work, but **price information systems** can lead to quick substantial gains, cutting out information asymmetries between farmers and product buyers.
- In producer organisations that have integrated ICT, it is not necessary for individual producers to be trained in the use of ICT for them to also benefit from the effects that the ICTs bring about. In some cases, local farmer leaders would receive training rather than all members of the organisation. While only a part of members were trained, all members benefited from price information on mobile phones and a more efficient and effective organisation. It means there are still many potential trainees, yet the question is if additional training makes sense: **more training does not necessarily add more value.**
- Video or other image-based media have proven to be highly effective in **transmitting productivity-related information** to farmers. Some projects (like CRCR, Mali and

NUNUNA, Burkina Faso) supported partners in making their own video clips and sharing them with their peers. Other projects worked with farmers to develop quite professional videos that included experts and showed these during well-visited screenings (like PROINPA in Bolivia[2], and the projects in Kenya and Ethiopia). In either format, farmers welcomed the information enthusiastically and applied the new skills in their work, in order to improve yields or quality of produce.

- Monitoring the **gender aspects** of programme outputs and outcomes was quite a challenge for a number of partners. Gender disparities are high in several situations, such as within Farmer Marketing Organisations in Ethiopia and producer organisations in Bolivia and Peru. In other instances the selected partner organisations already operated in a gender sensitive manner (Kenyan partners) or with a bias towards women (PROMUC, the shea organisations in West Africa). Women both in Peru and Burkina Faso stressed the social function of their groups, that served not only as economic entities, but also to provide space to discuss well-being, welfare, family issues (such as health, education), and how to be connected to one another,
- A relatively new way of working emerged from the Latin American partner network: **E-commerce**, direct match making between agricultural producers and (urban based) buyers, including individual processing SMEs, restaurants and canteens, and individual consumers.
- ICTs can play a role in countering youth migration to urban areas by enhancing access to market information, production techniques, new technologies and financing opportunities. The use of ICTs enables choice, the option to stay on farms and take full advantage of new technologies and farming techniques, while incorporating valuable traditional practices and knowledge. ICTs support the younger farmers to feel connected to national and world trends, even in their most isolated geographic locations. Efforts should be aimed at further fostering **youth involvement in agricultural activities** and decision-making processes. These efforts can seize on the youth's affinity for using ICTs, their capacity to innovate and their propensity for taking higher entrepreneurial risks.
- Through **working with producer organisations** C4C managed to reach out to over 4 times more individuals than through working with individual ICT users. As a way forward for significantly improving rural incomes, working through these organisations, instead of via "advertising" (as the telecom retailers tend to do), this may be an efficient proposition, provided that these organisations are able to promote entrepreneurial and market based approaches.
- Discussions on the **financial sustainability or cost recovery of ICTs** were not taken very seriously by most partner organisations until late in 2014. Thinking about ICT costs in terms of "percentage of turnover" or "percentage of revenue" seemed to be underdeveloped in most of the partners supported by C4C. During Cross Country Learning Events, C4C have shared and discussed business plan models. So far, stand-alone ICT4Agriculture services appear difficult to maintain, probably because the scales of operation are mostly too small. The most feasible way to recover ICT costs is to integrate costs in a larger package of products or service in the organisation: generate agricultural or rural tourism turnover and use a small percentage to maintain the ICT service.

Cross Country Learning Event 2015

As described in chapter 1.6 a Cross Country Learning event on ICT4Economic Development took place in Ouagadougou in 2015. Key findings were:

- Several organisations have worked on, or were piloting business models – and some of the models were quite promising - but none have reached break-even yet.
- Partners have used different ICT applications for different purposes, but there were some general similarities: the most used applications were for organisational purposes (e.g. databases for member administration and for production tracking, phone/SMS for internal communication, social media and web sites for marketing), followed by multimedia for production techniques and market price information systems. Poor access to Internet and/or mobile phone is still a handicap in many rural areas.
- Partners have perceived multiple positive effects of the interventions, notably on productivity, on market access, on sales and on organisational strength (visibility, credibility, membership base, internal communication, external communication). Overall, ICT-enhanced data collection, storage and analysis is seen as a big step

2 PROINPA videos are published online, see https://www.youtube.com/user/FundacionPROINPA?blend=5&ob=5#g/p

forward. In some cases, farmer data (collected by farmer organisations themselves) have successfully been used to lobby and influence local and national policies.

These finding generally underline the findings from the survey held among producer organisations.

Harmonization

In all of the countries where the C4C Economic Development sub-programme was implemented, agriculture was an important (sometimes the most important) focus area of the national and local governments – many governments also explicitly underlining the importance of 'modernizing' the sector, of making the sector more efficient and of making production of higher quality. In Bolivia, the work of C4C aligned well with the mandate of municipalities to support commercial activities of farmers. In Mali, as a result of decentralisation policies, local governments also collaborate more and more with producer organisations, and C4C-partner CRCR signed a collaboration agreement with the Regional Assembly of the Sikasso province to share and analyse data on productivity and food security. In Kenya, the buildings that host ICT centres are often funded by district governments. And the Ethiopian government after an external evaluation of C4C Economic Development sub-programme, concluded that they needed to do much more in terms of electrification and connectivity in the rural areas to support similar projects.

Value chain development is a popular topic for many international organisations and donors - agriculture only recently resurfaced as an important focus area for many donor countries (including the Netherlands). Publications like the World Development Report on Agriculture (2010) and the 2012 ICT4Ag conference in Rwanda did much to underline the value of ICT for Agriculture.

Recommendations

Based on the lessons above and reflection sessions with C4C alliance staff members, the following recommendations seemed valuable for future alliance partner programmes and other activities, as well as for future programmes and policies of the Ministry related to ICTs in economic development, for producers, producer organisations or entrepreneurs.

- Though C4C alliance members in their coaching of partners addressed the sustainability issue from the first Round Tables in 2011 and from the very first proposals, it has remained a challenge to come up with feasible models for all projects' long term sustainability. The focus of C4C has always been on the broad definition of sustainability, which includes a mix of financial sustainability, technical, organisational and social sustainability. In short: users need to be able to use the ICT solution, partners need to be able to judge what is useful to them and the ICT infrastructure environment (internet, power, service) that need to be in place. Projects were generally developed as pilot projects, giving room for innovation and business plan development throughout the social innovation process of each individual project. Though there is a lot of value in that process, there is a **need to rethink some aspects of the implementation process and focus on developing strong business models from the onset**. The fact that in several cases farmers are paying for (or are indicating that they are willing to pay for) solutions underlines the opportunities for feasible business models.
- The social innovation process allowed for several interesting **innovations** to surface – developments that were not foreseen at the start of Connect4Change and that hold much promise for the future. The projects in Latin America on e-Commerce and the studies into the effects of the use of ICT tools on the engagement of young farmers in farming organisations and communities, are two examples of interventions that deserve more attention even after C4C ends.
- In terms of the **role of DGIS and the embassies**, C4C alliance partners mainly found that the closing of many embassies in the countries where the C4C programme was implemented made for little direct contact with the ministry during implementation. In countries where there were embassies, such as Kenya and Ethiopia, the focus of the embassy was often profoundly different from the C4C sub-programme, with a strong focus on promoting Dutch interests rather than development of the local agricultural sector. It would be nice to see the embassies take up a stronger role in sharing lessons

and recommendations. If there was attention for agriculture at the embassies, C4C saw little interest in the use of ICT for agriculture – something that was seen as a missed opportunity. The Ministry in the Netherlands did use C4C channels in getting the necessary knowledge and experience together for preparing its G4AW (Geodata for Water and Agriculture) call for proposals. This collaboration worked very well and experience gained over the years was put to good use. This kind of collaboration would be much welcomed in the future.

- **Mobile technology** was used extensively in the Economic Development sub-programme and many farmers were reached via this medium. Though it seems to have the potential to reach 'the last mile' (even the most remote of farmers) it is important to realize that many farmers in remote areas still do not have access to mobile phones, that they cannot read text messages or that they simply do not have the capacity to use it for economic development purposes. **Radio** still does remain the cheapest and most used diffusion channel and it therefore remains important to at least consider it as part of each and every project strategy.
- It is important to realize that **ICT remains a means to an end and not an aim in itself**. This means that other goals, such as improving the value chain, improving production or improving awareness of farmers, are always leading in the formulation of the project. That said: ICT only proves its real value when it is also applied elsewhere in the organisation: projects that got to understand the full potential of ICT when applying it for market prices, for instance. Though it may be tempting to include the full range of possibilities from the start, this is not advised as it dilutes the project's focus.
- Building on the previous recommendation: **Short learning cycles and flexible implementation plans** are needed for ICT4Economic Development projects: at the start of the project, it is hard for project teams to gauge the full possibilities of what they are working on. Building the project in short cycles with regular (for instance annual) evaluation, adjustment and planning sessions, is preferable to, for example, building a full-fledged ICT park at the start and wait a few years to see what happens.

Chapter 2.2

EDUCATION MDGS AND SUB-MDGS

As discussed in the first section of the report, the goal of the ICT4Education sub-programme was: *'Improved quality and equity of the education system supported by at least 25 partner organisations for 6 000 teachers and managers of 250 education institutions and for 150 parents associations/grassroots education organisations in 8 countries through the integration of ICT in primary, secondary and teacher education and vocational training with a special focus on empowerment of women.'*

The programme was implemented in 8 countries (Bolivia, Peru, Ethiopia, Kenya, Uganda, Ghana, Malawi and Zambia) and focused (amongst others) on improved decision making in schools using school management information systems, improved teaching and learning using ICTs and improved involvement of parents and communities using ICTs.

Key outcomes

The monitoring protocol

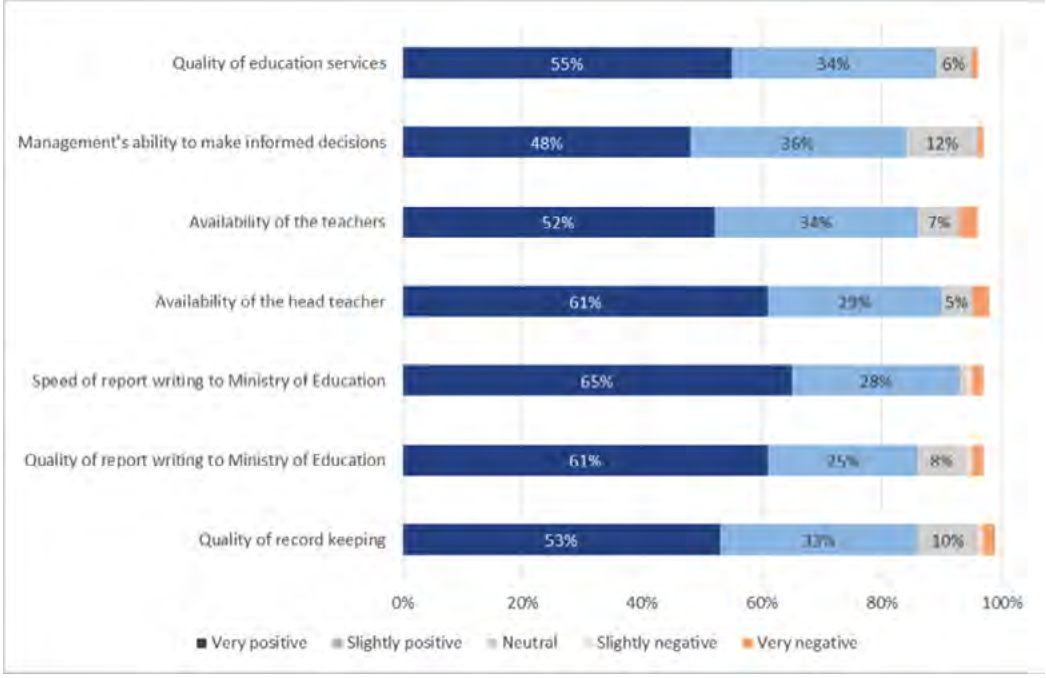
For all the 20 output indicators, the education sub-programme has reached the targets that were set in 2011. For 8 indicators the results in the sub-programme were twice as much as the target set, meaning that in a number of cases the targets that were set in 2011 were too low. Some observations:

- The explanation for these high scores in partner organisations, education institutions and parent associations (as shown in the tables referring to the MDG results of the Education sub-programme in chapter 1.2) can be found in the combination of the C4C MFS-programme and the ICCO-Alliance MFS programme (including a sub-programme on basic education). The ICCO-Alliance Basic Education programme took off in 2007, and continued under MFSII. C4C was designed to build upon the results reached in the ICCO-Alliance Basic Education programme, adding value by bringing in the ICT component. This worked out well, partner organization and grassroots organisations could easily be identified and they embraced the idea of integrating ICT into their educational activities.
- Training of teachers in ICT proved to be quite intensive and a long term process. It was also difficult to maintain the trained teachers in the sub-programme. A lot of teachers were transferred or applied for other jobs (after the ICT training) so there was continuous need for refresher and follow-up trainings. This investment was done during the years 2012-2014. In 2014/2015 the sub-programme in Bolivia was scaled-up by creating a digital platform and offering training to teachers on how to use this platform. In Bolivia the education sub-programme reached almost 5000 teachers in 2015 of which almost 50% were female.
- Throughout the implementation of the sub-programme, it remained difficult to reach the number of female teachers set in the original target. This indicator intended to promote ICT specifically for female teachers; to empower female teachers and also to make sure female teachers were not left behind in ICT innovations – as is often the case. In reality ratio of female-male teachers was much lower than expected - In many African schools the number of female teachers in rural areas is less than 25%. Where at all possible, female teachers working in the programme schools were taken on board. Although the absolute number of female teachers was reached, the ratio female-male continued to be lower. In 2014 and 2015 specific attention was paid to take up and keep the female teachers in the programme and this has been successful. It showed the importance of making sure indicators are linked to the actual reality on the ground in order to make sure targets are set realistically. Another lesson learned is that in 2011/2012, during partner-organization identification and target group identification, gender, and female teacher ratio was not an explicit requirement. We assumed that the female teachers would be there, which was not always the case.

Analysis survey School Management Information Systems (SMIS)

Some of the results of the survey among schools using a SMIS within the C4C Education sub-programme were already discussed in section I of this report. The 157 respondents that filled the evaluation questionnaire in late 2014, also answered questions on the effects of the SMIS. The responses are presented below.

40% of respondents indicate they used the SMIS daily in their school, 44% used it weekly. 60% of respondents claim that they used prints from the SMIS to report attendance figures and assessment scores to the Ministry of Education in their country.



Looking at the effects the respondents saw on their school, the most positive effects were seen in the speed of report writing to the ministry (95% (very) positive effect) and (possibly as a consequence) the availability of the head teacher (90% sees a (very) positive effect). Respondents also saw a (very) positive effect on the overall quality of the education services (89%) and on the availability of teachers (86%) and the quality of the report writing to the Ministry (86%).

Qualitative analysis

After analysis of the narrative reports and other documentation and studies done throughout the programme, the following observations were made by the C4C alliance members:

- **ICT has mainly been used on the level of the teachers and school management**. This is in accordance with the design of the education sub-programme. Teachers have used ICT for innovations in developing and delivering of their lessons: design of digital teaching and learning aids, modules, exercises, worksheets, teacher's notes, films, games, radio broadcasts and so forth. Lots of these materials were shared online and offline. In Uganda, Ghana and Ethiopia interactive video-analysis assisted the professionalization of the teachers in Active Learning. The next step after 'teachers working with ICT' was getting ICT 'in the hands of the learners'. This was realized in a limited number of cases, mostly in Latin America, where partners and schools turned out to be somewhat more advanced in ICT: learners in Peru used video cameras and the one-laptop per child programme in Bolivia could be integrated with the C4C programme.
- Apart from introducing ICT for teaching and learning, the education sub-programme also **supported innovations in the development of digital School Management Information Systems (SMIS)**. Main direct result was the digitization of students' records: simple, user-friendly excel sheets have been developed for this purpose. It turned out that digitalizing students' records and marks was an important time-saving solution for the teachers. The sheets were quickly adopted by the schools. On a more advanced level, complete SMIS have been developed and offered to the schools. For these SMIS, user-friendliness turned out to be more challenging and it took more trouble to root these SMIS into school management. Often 2 or 3 persons per school (school administrator and support staff) were trained to use SMIS, and the next step: making the whole school staff to use the digital SMIS was often challenging. Also digital data supply to district / country / national government offices (a potentially big time-saving innovation) turned out to be challenging because it took time to synchronize systems and not all government offices were set to receive digital data. In 2014 an inventory was made: 67% of the education institutions using ICT for education management adopted the SMIS – and as shown in the graph above: used it frequently

and satisfactorily. The remaining 33% worked with the excel-sheets and did not (yet) adopt the school-wide SMIS.

- The **use of text messages** was another innovation, brought into this sub-programme by TTC Mobile. In the Education sub-programme, text messaging was mainly used to inform parents on school issues and to underset and support participation of bodies of partners in school management. In total, these messages reached almost 22,000 community members in the countries where the C4C education sub-programme was active. Generally the text massaging has been successful in encouraging and facilitating participation and decision making of parents bodies. The sustainability of this innovation however remains a challenge.
- Partners and schools in the education sub-programme have mentioned the **increased learning performance** (such as grades and pass rates) as an important outcome. This observation is supported by research, such as the study done among students from schools in Ethiopia (described in the Featured Intervention in chapter 1.2). Similar studies like the impact study in Ghana (see below) also seem to confirm that ICT can contribute to improved test scores and pass rates.

Conclusions:

The ICT4Education sub-programme in the 8 countries show that almost 12,000 teachers apply ICT in their daily teaching in a sustainable way and more than 64,000 pupils have shown increased learning performance due to the C4C Education sub-programme. Data also shows that ICT integration in the schools has contributed to a greater involvement of parents, and improved efficiency in the management of schools. Over 37,000 female teachers are now actively using ICT in their classroom – improving their position in the schools they work in and serving as role models for female students.

Apart from the C4C goal for education, the sub-sector programme also contributed to the second Millennium Development Goal, which is “achieve universal primary education”. The focus of this goal is on enrolment and completion of education (see also the connected target: “Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling”). The C4C education sub-programme focused on quality of education and improved management of schools. Both aspects also contributed to the retention of students in schools, limiting the number of drop-outs. Some projects saw an increase in enrolment too, something that may have been caused by the improved image of the schools and the improved quality of teaching and learning .

Lessons learned

C4C organised and participated in a number of learning and evaluation activities described in chapter 1.6 on the learning agenda. Besides the Joint Evaluation Trust activities, the ICT4Education sub-programme was reflected upon during the Learning Days (for the C4C alliance members), Cross Country Learning Events (CCLEs), annual Learning Workshops in the countries and in independent evaluations. All of these activities together amounted to a lot of interesting lessons. In this section, some overarching lessons are shared as well as the lessons from the Education CCLE. Highlights and key lessons from specific studies are gathered in annex 6.

Key lessons:

- **Integration of ICT in education includes a change management process that takes 4/5 years:** Integration of ICT is a long-term process of change management. Based on earlier experiences of IICD, this long-term approach was included in the programme design, and it turned out to be the reality. Focus of and ICT4Education programme should not be on the (ICT) equipment, but on the people using it, the potential people using it and other identified stakeholders. This process of change management takes time, the experience of Connect4Change shows that 4/5 years is the minimum time required. In the C4C education sub-programme, only during the last year (after almost 4 years of investment), and only in the most advanced countries (Bolivia, Peru) there was space for scaling-up. The other countries used the final year to sustain their interventions. In this process of change management, it is crucial to involve all relevant stakeholders, and maintain this involvement throughout the process. In Kenya and Ghana, a temporarily pause in the programme was needed to (re)involve government

education services and remove resistance on their site. Such adjustments turned out to be crucial.

- **Limiting transfer of teachers:** Continuous transfer of teachers and head-teachers was a challenge for the education sub-programme. Where at all possible, prior to project implementation C4C would agree with schools and county/district administration that transfer of (head) teachers of the schools in the programme would be minimized. The effects of these agreements were limited due to a number of reasons. Firstly, transfers can be minimized but never brought back to 0%. In some schools, teachers themselves applied for a promotion in another school or a job in a private school or private sector, as a result of their ICT training. It turned out that ICT training made these (head) teachers more qualified for other jobs. The coping strategies that used to address this issue were continuous refresher and follow-up trainings and team building amongst the staff. Interestingly, in some areas the opposite effect was also true: teachers were more motivated by their professionalized workplace, their workload became more acceptable and they were more connected to peers and friends using the Internet. In those places, ICT made teachers more likely to stay at their school.
- **Involvement of a research institution:** Part of the C4C Education sub-programme was the implementation of an impact-study by an independent (research) institution. This study has been carried out in Zambia and Ghana, independent from programme implementation. The findings of this impact study are interesting and very valuable (they are taken up in more detail below). It would however have been better to involve a research institution from the start and let research go hand-in hand with implementation. In this way C4C and its partners could benefit from the outcomes and apply findings from research directly in the projects again. C4C could also picked specific challenges or topics for in-depth research (for example: how to institutionalize SMIS in schools). On top of that, a knowledge or research institution could have played a role in advanced monitoring (measurement and investigations) and learning.
- **Programme design:** The C4C programme was designed following the social innovation process. This implies a unique programme composition per country. For each county, a number of projects were identified from the round table workshops. The advantage was that projects were formulated and rolled out from the bottom-up, they were demand driven and well rooted in the local context. The disadvantage was that there was not always a programmatic unity amongst the projects. In a number of countries it was possible to create more programmatic unity over the years. This is the case for Bolivia, Peru, Ghana, and to a lesser extend Ethiopia, Kenya, Malawi and Uganda, but not for Zambia. Programmatic unity turned out to be essential for lobby, advocacy and also for learning, for example during the Cross Country Learning event.

Cross Country Learning Event Education

During the Cross Country Learning Event (described in chapter 1.6 on the learning agenda), partners described the success factors and lessons in different dimensions of the star schools. Some examples of the lessons shared:

- **Lobby & Advocacy:** Lobby and advocacy should be part of programme design. In planning your L&A activities, make sure to present them to governments before their budget processes start so as to try to gain allocation of government resources.
- **School Management:** Prioritize attitude change among school managers as it is the biggest factor in the success of projects; capacity building of school managers to be good administrators should take place irrespective of the presence of an SMIS.
- **Learning Environment:** Curate interventions to appropriately fit the target group(s) of the project. In order to capture the effect of the ICT integration on the learning environment, good monitoring and evaluation processes are essential. They include a baseline and checks on the effectiveness of the processes as well of the value added.
- **Teaching:** Training and support of teachers needs to be evidence based; it is crucial to recognize teachers' efforts with certifications and other awards.
- **Community Involvement:** It is wrong to assume that communities cannot provide support to or invest in the project: co-design projects with communities for the purpose of creating ownership and having an intimate understanding of the local issues.
- **Learning Process:** Create highly contextualized content that will be relevant to beneficiaries.

Harmonization

In contrast to earlier years, education has not been a priority area for the Dutch Ministry of Foreign Affairs, nor for the Dutch Embassies. Where relevant, connection was sought with the embassies around relating themes, such as SRGR/ SRHR (for example in Malawi, Ghana and Ethiopia). In each country, the C4C programme was designed in line with and connected to the national and local education policies. Representatives of the Ministry of Education (MOES) were invited to all the *Round Table* workshops. Local partners visited national and county/district education offices throughout the project period to update and involve the local authorities in the programme. During these visits contacts were established, results were shared and agreements were made on how project interventions would fit into (local) curriculum and (local) policies. The Active Learning Pedagogy (Ethiopia, Uganda, Ghana) for instance suits well with the student-centred/pupil-centred education policies in these countries. These education policies however are not always implemented on the ground and C4C offered the schools and Teacher Training Colleges a good perspective to do so. Another example are the one-laptop-per-child initiatives in Bolivia and Ghana: local government financed the equipment and C4C supplemented it with training.

Recommendations

- The social innovation process allowed for several interesting **innovations** to surface – developments that were not foreseen at the start of C4C and that hold much promise for the future. The work done in Malawi with Teach and Learn Tabs was very new to all involved parties and has generated some interesting initial results that deserve further exploration – taking up these innovations in future proposals or interventions would be interesting to see in how far initial results can be replicated and scaled up.
- When introducing ICT in a low resource context, working through a **locally based partnership of schools** and other stakeholders in a certain area can be sensible approach – this way one school can act as a role model to others, and schools and teachers can benefit from each other's experiences, developed materials, service providers (such as training or maintenance providers) and sometimes even hardware.
- A **multi stakeholder approach** (Ministries of Education, District Education Offices, PTA's, the local business community, national donors) from the start is needed to achieve sustainability at financial, social and organisational level. Change management skills, building alliances, creating local ICT support structures and attracting additional donors all contributed towards this.
- Main recommendations with regards to **the role of DGIS in the management and process of MFS2**, are for embassies to take a more pro-active broking role in lobby and advocacy; they could play a role in scaling up promising innovations, by paving the way to high level policy makers or important donors. It would have helped to have less emphasis on (administration of) outputs and results and to have less rigid and less static programme design. More dynamic programme design and management and outcome monitoring is especially useful for programmes that involve lots of innovation (like the C4C programme).


NOKIA

Chapter 2.3

HEALTH MDGS AND SUB-MDGS

As discussed in the first section of the report, the goal of the ICT4Health sub-programme was: *'Improved effectiveness and efficiency of the health care system supported by 20 partner organisations for 1,000,000 patients and citizens by 6,000 community health workers, home based care givers and health professionals working in 300 health facilities and care outreach programmes in 300 communities in 5 countries through an integrated introduction of ICT in health care services and community health, with a special focus on empowerment of women'.*

The C4C Health sub-programme involved five countries (Ghana, Uganda, Mali, Tanzania and Malawi) where partners have been involved in design and development of ICT-related projects and applications. They have done this in a way that was fitting and of added value to their existing goals and programmes. Though this resulted in varied projects, using ICT in various ways, the majority of health projects focused on health system strengthening using ICT. ICTs have been used to improve the health management information system of hospitals and health centres, but also to improve the way health workers do their work, through e-Continuous Professional Development. Community Health Workers (CHWs) were provided with mobile phones to enhance their possibilities to provide information to the community and to register pregnant women with the nearest health facility to ease their access to antenatal care. Other projects made computers and internet available at youth centres, to enable access to sexual education materials as well as create spaces where peer-to-peer education on this topic could be provided. Results and lessons from the health programme are broad, and sometimes related to the experiences of different partner organisations. Of course, some lessons on processes can be more generalised, but the results and lessons in this section are often quite specific for the kind of ICT applied and users that have been involved.

Key outcomes

Multiple applications have been developed and used by partners in 5 countries. The applications provided added value to the health services or the way they have been delivered. ICT tools were also supportive in increasing the quality of healthcare or improving the accessibility of care. ICT thus is not about providing health care but serves as a complementary instrument to increase the quantity or quality of care (or both).

In the first part of this report, the output and some outcomes of the sub-programme were already discussed. It became clear that the sub-programme has reached over 5.1 million patients and citizens through 7,500 community health workers and health professionals – which is much more than the numbers originally planned for. In this paragraph we will reflect in more detail on the outcomes. Some key outcomes and conclusions from the projects are:

Smartphones for community health workers have led to more appreciation of Community Health Workers:

In Malawi, Uganda and Ghana, several partners initiated projects where Community Health Workers (CHWs) were provided with a mobile phone. Those phones had two main purposes: 1) to receive and forward the latest information and insights regarding health education to community members, with a focus on maternal and child health and 2) to enable CHWs to easily register pregnant women in their community, to support easy access to and sharing of information with the nearest health facility. In Mali, mobile application also enabled CHWs to more efficiently collect and exchange data for health surveillance purposes and quick and efficient referral to professional health workers when needed. During the CCLE (Cross Country Learning Event) it was stressed by all partners that this has resulted in positive attitudes towards CHWs. CHWs are volunteers from the communities and although they are expected to provide health education and to refer community members to the health facility when there is a need, CHWs are not always appreciated for their work. The effect of the use of the phone for health education (text and voice messages to CHWs) and referral has been that communities see the CHWs as more professional and that they appreciate their services more. When referred and registered patients arrived at a health facility, service was faster because their information was already available to the health staff. From the health centre, appreciation for CHWs has also increased as the health staff has become more aware of the role and relevance of the CHWs as a sort of extension of the health facility in the community that creates added value in the 'health service chain'.

Patient satisfaction surveys give voice to patients and result in improvements in health services

Several projects use mobile devices (such as phones or tablets) to collect feedback and engage patients in the improvement of services in health facilities. This is a solution that many health partners showed interest in as they saw the clear added value for both communities and hospitals. Appreciation of the services is being taken very seriously by the facilities and result in tangible improvements – one of the facilities built new pit latrines after patients complained about the old ones and another facility had to let go of some staff after patients addressed their lack of positive customer service.

HMIS outcomes show that digitalization of patient data supports efficiency

Reports from partners and partners' reflection during the 2015 Health Cross Country Learning Event show that digitalization of administration and registration in hospitals and health facilities in different countries required a change of mind and lots of training with staff and management of health facilities. After initial investments (time, money) using a digital HMIS is not necessarily (much) more expensive compared to paper system, though the need for paper administration as back up (needed in case of power cuts) does limit efficiency. That said, partners and users of the system indicate important outcomes regarding increased efficiency and effectiveness of administration and healthcare in general. They are linked to the fact that patients and their treatments are now more easily found and traced throughout their 'route' through the healthcare system, and the fact that transparency increases and financial management improves, in turn having an effect on the organisational culture: the system makes visible what works and what does not (thus also resulting in much resistance from those benefiting from the status quo). It is often viewed that increasing this transparency also empowers patients and enhances their voice – for instance in demanding specified invoices when making payments at the hospital. This way, the system gives voice to patients and enhances community and patient empowerment.

Empowerment of women – and men

Though one of the goals of the health sub-programme was the empowerment of women, and training of female hospital staff and CHWs, several projects found that when addressing female health issues, it made a lot of sense to empower the entire family – by getting husbands more involved in the care for their wives during and after pregnancy. Interventions developed included involving men in Safe Motherhood Committees and making use of male champions. When looking at the specific ICT interventions, several partner organisations realised during their projects that text messages related to pregnancy do not always reach the women. Often this was because the mobile phone numbers that women provided belong to their husbands, rather than to the women themselves. After realising that, this led to messages being specifically tailored to be read by the husband. Project partners ACDEP (Ghana) and Health Child (Uganda) thus reported that in response to the information and messages shared with beneficiary communities, there has been a significant increase in the number of men who accompany their pregnant wives to the ante-natal clinic in their quest for quality health for their pregnant wives and the unborn babies. Thus, men and women now consider health issues and access to quality healthcare as a shared responsibility and discuss health issues as issues that affect both men and women in the communities.

"Tomorrow Thursday 19th June 2014 is the date your wife is expected to return to Walukuba HC IV for her second antenatal care visit. Come together with her."

"Dear Papa, check the baby for signs of illness. His tummy, hands and feet should be warm. If he's hot, cold, or bluish, get him to the health centre."

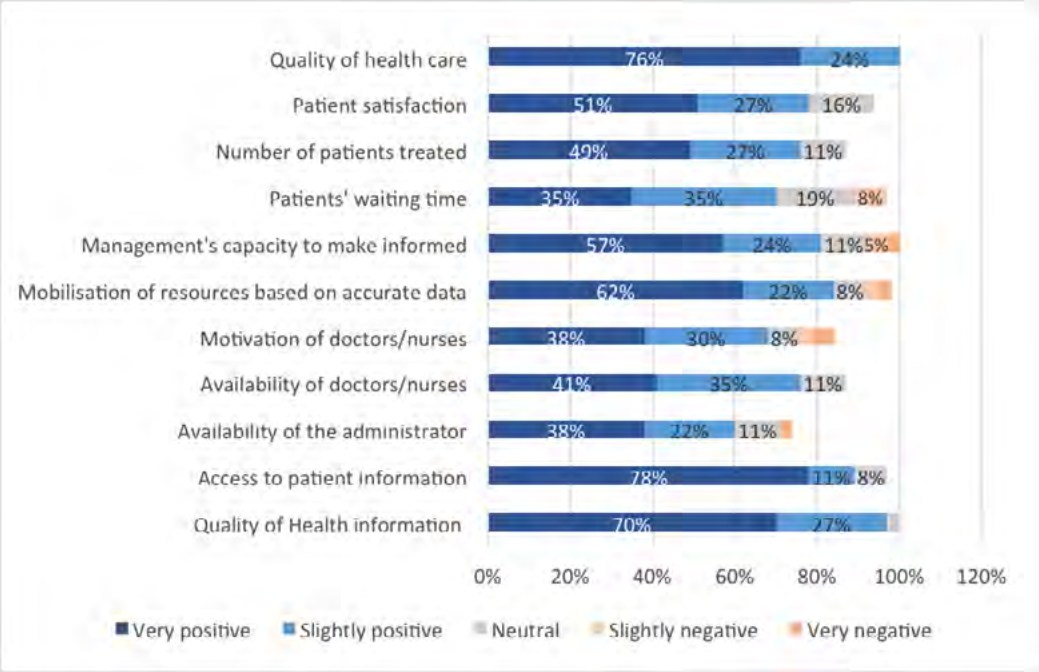
Text messages from project partner Health Child (Uganda)

Analysis of Health Management Information Systems

In chapter 1.2 of this report the analysis of some aspects of the site survey on digital HMIS were already discussed. This questionnaire, answered in late 2014 by 43 respondents from 39 facilities (hospitals, clinics and other facilities) with Health Management Information Systems, also looked into the effects (or outcomes) of the use of these systems. The responses to these questions are shared below.

Most facilities had to report to the Ministry of Health at least monthly (some even weekly). 46% of respondents still sent in these reports hand-written, but the others (54%) indicated to use ICT in one way or another to report this information, for instance sending printed reports (generated by the HMIS) or sending reports via e-mail. How much time this saves was not researched.

The respondents saw a number of effects of the HMIS in their facilities. They were:



Most noticeably, all respondents saw the effect on the quality of healthcare – 76% saw a very positive effect on the quality of health care. This general positive view was explained somewhat looking at individual components like the effect on the quality of health information (97% see a (very) positive effect), access to patient information (89% positive effect) and the mobilisation of resources based on accurate data (84%) – the latter often attributed to facilities increasing their overall transparency and financial management. Other positive effects respondents see on Management's capacity to make informed decisions (81%), patient satisfaction (78%) and the availability of doctors and nurses (76%).

Conclusions:

The ICT4Health sub-programme in the 5 countries has reached more than the 1,000,000 patients and citizens and 6,000 health professionals C4C was aiming for. The monitoring and studies into the sub-programme also showed that it improved effectiveness (for instance through feedback of patients leading to improvements) and efficiency (for instance through HMIS) of the health care system. Beyond effectiveness and efficiency, appreciation for some health workers improved, patient satisfaction increased and there were positive effects on the number of clients per hospital and the hospitals finances. Empowerment of women in the health sub-programme was addressed somewhat unconventionally: by empowering both men and women on health subjects that till recently only involved women.

Apart from the C4C goal for health, the sub-sector programme also contributed to Millennium Development Goals 4 (reduce child mortality), 5 (improve maternal health) and 6 (combat HIV/AIDS, malaria and other diseases). Specific projects within the C4C programme focused on Mother and Child care, on increased awareness of HIV/AIDS and on other diseases such as malaria. Apart for these focused programmes, the overall attention for more efficient and effective healthcare has also contributed to improved care and improved access to care for mothers and children and for those suffering from HIV/AIDS and malaria.

Lessons learned

C4C organised and participated in a number of learning and evaluation activities described in chapter 1.6 on the learning agenda. Besides the Joint Evaluation Trust activities, the ICT4Health sub-programme was reflected upon during Learning Days (for the C4C alliance members), Cross Country Learning Events (CCLEs), annual Learning Workshops in the countries and in independent evaluations. All of these activities together amounted to a lot of interesting lessons. In this chapter, some overarching lessons are shared. Highlights and key lessons from specific studies are gathered in annex 7.

Key lessons:

- **Overcoming resistance to change:** Though the overall goals of the C4C Health sub programme were reached, the process has not been easy. In all countries the start has been slow and many challenges (technical, staff turnover, training needs, getting used to the 'newness' of ICT) needed time to be addressed. From 2013 onwards, results have really started to emerge and partner organisations, health centres and people involved have become more and more enthusiastic about the opportunities that ICTs give them. Using ICT in health care creates a lot of challenges for people: it is new, different, interesting, one needs to change, actions become transparent and problems emerge. Every person reacts differently to these factors: some people will see the good opportunities and will get involved from the start, while other people will only see problems and be resistant. The C4C Health sub-programme has seen first-hand the importance of nourishing and using the frontrunners as champions, but also to not forget those that are resistant, keep them involved and informed, because their support (or their non-resistance) is critical for the changes to become sustainable.
- **New projects, new target groups:** though IICD had ample experience in working with and providing capacity development trajectories on ICT in the health sector, the projects developed in during implementation sometimes touched on very new topics and new target groups for training. New topics addressed were referral, disease surveillance, health finance, health rights and institutional eLearning. Prior to C4C, IICD mainly focused on training formal health workers, while the C4C health sub programme also entailed working with and training volunteers from the community, sometimes with little or no formal education.
- **Investing time:** During the CCLE, some partners mentioned the difficulty of getting health workers to set aside time to be trained in the use of the new digitalized systems. It was not for lack of motivation, but for the already heavy workload of some workers that this continued to be a challenge. Taking busy schedules into consideration (flexibility in planning trainings) and convincing decision makers of the necessity to set aside time for training are therefore very important.
- **Preparing for technical challenges:** All health projects had to deal with struggles related to their ICT infrastructure: power failures, appliances breaking down (especially in the sometimes harsh climates), coverage of mobile networks and internet connectivity. As Internet connectivity improves, governments invest in their electricity grids and mobile providers in mobile connectivity, some of these challenges will diminish over time – yet much of this will remain a challenge for the next decade. It shows that having back-ups will remain important in the time to come, both back-ups for electricity, but also back-ups in the workflow – many facilities still keep a paper administration readily available parallel to their digitalized one.
- **Focus on 'soft' issues:** While it is tempting to see ICT implementation in hospitals as a technical issue, the processes C4C and its partners dealt with were change processes first and foremost. This means that much of the time was spent not just on technical capacity building, but also on other issues that needed continuous attention: from inception of ideas, through planning and implementation up to sustainable embedding: involvement of all relevant stakeholders, added value for all stakeholders, empowerment, ownership, willingness to change, willingness to learn. All these issues needed time and attention on all levels of the sub programme - from C4C alliance partners to implementing partners all the way to hospitals and communities. Change did not happen automatically or accidentally – it took time and (lots of) energy.
- **Sustainability and scale:** Sustainability in many cases was closely connected to the scale of the organization implementing it. Larger umbrella organisations often found it easier to fund the implementation of ICT, as they for instance could hire ICT support personnel centrally. They also had more to gain from digital administration, due to the larger amount of data and more locations they had to work with. That said, smaller

facilities have much to gain too – implementation here is, more than anything, a preparation for the future.

- **The need for new relationships and new roles:** More transparency and a better hold on the finances of a health facility often meant that procedures and processes were more strictly upheld, and that culture and relationships in such a facility changed: between doctors and other staff, between staff and patients. The way health staff functioned was sometimes challenged, which was sometimes quite a shock to a hierarchical system like the health care system in some countries. All of this also had consequences for the relationship between the facilities and C4C – more professionalized and formalized in order to make sure the ownership of all this change remained where it should: at the facilities level.

Harmonization

Sexual reproductive health and rights (SRHR) are a priority in Dutch Development Policy. Several of the projects, such as UNHCO (Uganda) and ACDEP (Ghana) paid attention to SRHR education and awareness raising. Focus on maternal health is an important aspect of the Millennium Development Goals. Important work in this respect was done by for instance HealthChild and UNHCO in Uganda, and ACDEP in Ghana.

Health-related priorities of country governments, especially at the start of the C4C health sub programme, were often on data-collection, but with a focus on benefiting governments and the health care system at large (top-down) without having much eye for the needs of individual health facilities. Only after a while, governments began to see how keeping local interests at heart actually improved the quality of the data as people were much more committed to collect (good) data when it had relevance to their facility too. Currently attention to the importance of data in health care is very big, due to continuously increasing (international) attention for accountability in International Development. Institutions like the World Bank focus much on result based financing and health insurance systems – both developments that require better insights in the results and the finances of health facilities too. In this sense, the attention on HMIS within the C4C health sub-programme was a good attrition to these developments. Where appropriate, C4C staff participated in coordinating and network meetings at local ministries. The Ministry of Health in Malawi for instance organised such meetings, which were useful for sharing knowledge and aligning programmes.

Recommendations

- The social innovation process allowed several interesting **innovations** to surface – developments that were not foreseen at the start of Connect4Change and that hold much promise for the future. The project in Ghana related to the use of ICT to collect health related data for advocacy purposes is a good example of an intervention that deserves more attention even after C4C ends.
- Though **sustainability** has been an important aspect already from the formulation of all projects, this did remain an important point of attention throughout implementation. Partners are often unaware of the consequences of maintaining ICT equipment and ICT support in the long term. It is important to address this from the start and to discuss with partners the expectations regarding responsibilities for procurement and funding of new and replacement equipment.
- One of the recommendations that surfaced in the CCLE was to pay attention to role of media in the attention to and image of the projects. Several of the projects in the health sub-programme were much in the public eye and did not recognize the role of the media when setting up the project. Partners underlined the importance of **involving (local/national) media** from the start, as to show the public where the organisations were coming from and what the project accomplished. This increases public support for the project and helps with lobby for further funding and other types of support later on.
- Significant investments have been made by different projects in mentoring and training of project managers or key hospital staff. This always poses a risk as project managers leave, or hospital staff moves to a different role or another organisation. The quality of C4C technical training often became apparent in the fact that it made trainees now more attractive for other organisations. C4C therefore often tried to use a **group mentorship approach**: involving 3-4 ‘programme advocates’ in all phases of the project

development. This is not always well understood by partners and hospital staff – being part of a training programme is quite often related to the status of the person in the organisation – not all organisations prioritize this time and effort for lower-level staff. Alternatively, C4C used cascaded training and mentoring (training of trainers), though the quality of that training also depends quite a lot on the people involved and the time set aside by managers for lower-level staff to participate.

- **The role of DGIS** in the health sub-programme was seen as minimal – few C4C staff members (or partners) sought advice or connections of the embassies in the countries. In several of the countries where the health projects were implemented, the embassies were either no longer there or their focus was more on economic development and trade. Overall, there seemed to be very little vision on the potential of ICT for Health at the level of the embassies. The few embassies that did take an interest in the health sector would benefit from more knowledge of or attention for the possibilities of ICT in this sector.

Chapter 2.4

GENDER

As described in chapter 1.3, C4C engaged the Gender Resource Facility to support a study into ICT and Gender which was published in 2015. The study was based on case studies with partners in Kenya (ADS Western and North-Rift), Uganda (Health Child) and Tanzania (AfyaC4C). The three case studies, although relatively small in scale, brought forward valuable lessons on how to reduce inequalities between men and women in using ICT-based tools and information services and how to enhance both men's and women's opportunities to benefit equitably:

- **Inclusive approach:** Based on their organisational principles, all implementing organisations used an inclusive approach for involving staff (the case of eHMIS) or community members (the cases of maternal health and agricultural value chain development). Both men and women, often including the younger generation, were explicitly encouraged to participate in training activities to enable them to use specific ICT tools and services. The organisations already showed gender awareness or responsiveness in the way they carried out their sub-programmes which they easily transferred into their approaches to implementing ICT-related activities.
- **Learning-while-doing using a gender lens:** All implementing organisations observed factors that hindered their effectiveness, such as the low attendance of women in ICT training in the agricultural value chain development programmes, poor attendance and low participation of male staff in the training on HMIS, or the low level of interest of men in maternal health. Organisational learning mechanisms, proved to be instrumental in understanding differences in access, participation and control between women and men – and to make adjustments where needed.
- **Strategies for embedding gender:** All implementing organisations (sometimes implicitly) work towards increasing the decision-making power of the individual participants of their programmes. This offers opportunities in combining the implementation of ICT enabled solutions with creating gender awareness among cooperating partners. Organisations often think that 'technology' is gender neutral without recognising that tools and services are used by men and women who each have their opportunities and constraints due to the socio-cultural context in general as well as the organisational culture in particular.

Some recommendations:

- Pay explicit attention to **all types of social divides** (beyond gender) in the design and implementation of inclusive approaches and systematically differentiate according to gender in the different social categories, because among disadvantaged groups the gender gaps are usually even wider.
- Perform a **comprehensive gender analysis** at the start of the ICT programme or in relation to implementing specific ICT-enabled solutions. This helps to better understand contextually specific gender dynamics and anticipate challenges concerning gender differences in access, participation or control over resources and process.
- Implement a well-functioning **gender sensitive monitoring and evaluation** system that goes beyond collecting sex-disaggregated data and includes reflective analysis of information through a gender lens to facilitate learning and adapting.
- **Practice what you preach** – make sure that implementing organisations work towards fully embedding gender equality in their organisations as a pre-requisite for truly gender-responsive programming. This can be done by clearly formulating what change the organisation wants to contribute to in addressing gaps between genders and how it wants to achieve it, ensuring that staff have the right capacities to identify and address gender issues, promoting team work and joint learning, creating a gender balance in terms of numbers at different levels, and investing in a conducive working environment to ensure that the voices and concerns of both men and women staff are heard. Such 'gender-aware' organisations will be credible advisors and role models to the organisations they cooperate with.

"We saw that when you visit the community, it is men who come out first so they have a lot of influence. We discovered that men still dominate ICTs so we had to work through them, they still dominate decision making so it is important that they are involved right from the start. We saw the need to develop approaches that reduce resistance from the men, we needed to win them over first. Even if the women were our target, we needed to involve the men. We needed to develop an ICT package for men that addresses their needs and obligations including finding them where they are- in trading centres, on market days that is; places where there is money".

Staff member of Health Child (Uganda)

Chapter 2.5

CAPACITY DEVELOPMENT

C4C AND CAPACITY DEVELOPMENT

As explained in chapter 1.4, IICD's work has focused on enabling Southern partner organisations to independently design and implement ICT-enabled development initiatives. Where chapter 1.4 highlighted (amongst others) the capacity development activities undertaken in the various countries and a description of the development of the 5 capabilities of partners, this chapter gives a reflection on what was achieved and what was learned. In addition, this chapter looks at how partners perceived capacity development and on C4C's role in strengthening the local ICT sector in the countries.

Approach

Within C4C, capacity development took place on the programme level, the level of individual organisations and the individual people within these programmes and organisations:

- **Programme level:** The departure point for C4Cs approach to capacity development was the social innovation process and *Round Table* workshops which enhanced capacity among a broad range of sector stakeholders, including C4C partner organisations, by building a shared vision, jointly developing a strategy, testing assumptions, and defining leverage areas for the sector as a whole. Facilitation techniques used during these workshops addressed the organisational capability to achieve coherence. Based on the resulting collective understanding of, and vision for, the sector, priority areas were identified which evolved into experimental and demonstrative initiatives. These complementary initiatives in turn addressed the sector development needs as well as informed ICT strategies for the sector based on locally gained experience. In the course of the programme, a local 'multi-stakeholder ICT4D grid' were developed and maintained to serve as the fertile ground in which the C4C pilots grew and were embedded, thus addressed the capability to relate to external stakeholders.
- **Organisation level:** After the *Round Table* workshops, C4C partners returned to their organisations and target group representatives to validate the project concept that was developed during the *Round Table* workshops. They were supported by C4C, for instance through sensitisation workshops on the role of ICT in their respective sectors for local stakeholders, like higher management, community based organisations and clients, members or other users. If consensus was reached at organisational level, partners participated in the next step of the social innovation process: the *Solution Design* Workshop, where partners, with IICD technical advisors and local experts defined the best possible technical solution for their project. Each potential C4C project partner was asked to send representatives with an active role in project implementation, usually one decision maker and someone with basic technical skills. This combination made sure that not just technical skills (the capability to deliver on development objectives) were developed, but partners also focused on their capability to act and commit. After this formulation phase, the implementation process started in earnest. C4C supported partners in building up generic ICT skills of partner organisations through collective skills training and technology update seminars - training content was adapted to each target group by assessing skills and need prior to the training taking place. Besides capacity development of implementing organisations, IICD would also support the development of technical support partners – this is discussed later in this chapter.
- **Individual level:** Central to partner organisations being able to develop and deliver the ICT-based solutions were the individual skills sets of employees and end-users of the projects' services. The IICD approach to enhancing individual's required skills both through individual interventions such as workshops and peer-support activities as well as continuous, need-based coaching trajectories. In many cases, ICT officers were newly hired for the specific purpose of the C4C project, which they operated in a completely new environment or with new responsibilities, requiring a new skill set, like training of end-users without ICT skills. Next to more standardised Train-the-Trainer interventions this required individual coaching, essential for a successful implementation - turning some ICT officers in real ICT4D champions.

Key outcomes

In the paragraphs below, the results from the implementation and technical support partners' survey are taken up. In these surveys, partners provided feedback related to the capacities they developed as a result of their participation in the C4C programme. Other than these, some key outcomes related to capacity development are:

- Many partners were familiar with ICT before being a part of C4C: they used computers in their daily work, phones for social interaction, they accessed the Internet, but through C4Cs systematic approach to capacity development, partners became aware of and were coached to integrate those different ICTs to strengthen their interventions.
- Most C4C projects hired ICT officers, someone to manage the ICT component of the project. ICT officers usually studied information technology and all had, to a certain extent, access to information about the latest and most innovative technologies. Through C4C however, they broadened their skills greatly: they learned how to adapt technologies to the local context and infrastructure available, networks and ISPs available at very specific geographical locations and to the skill level of those who would be using the new C4C application.
- Capacity building activities executed during C4C covered a wide range of skills: from specific and highly technical to generic ICT4D related soft skills targeting the C4C partner organisations at different levels. This combination of skills resulted in a high degree of embedding of ICT within the organisations. For the organisations involved, ICT was not only an obvious tool for enhancing the working processes and sustaining effective communication and information flows, it also created an attitude embracing innovation and a continuous search for ICT applications beneficial to them.
- Capacity building activities within C4C contributed to the development of different capabilities in different ways, with different individuals and at different phases of the implementation process. Some examples:
  - Through extensive collective skills trainings on the development of Information, Education and Communication (IEC) materials, website development and communication strategy development, organisations improved their capability to relate to external stakeholders and increased credibility amongst other donors;
  - The focus within the C4C capacity building programme on sustainability has, in general, increased organisational capacity to attract resources and generate income with the infrastructure acquired through the C4C programme;
  - C4C capacity building activities consciously highlighted milestones in implementation, created moments for reflection and evaluation and exchange with peers. At organisational level this would address the capability to act and commit
- The fact that implementing partners were capable to assess the use of ICT tools in their programmes and organisations, how technology can be made available for all kinds of users; from semi-illiterate farmers to government officials has broad and long-lasting effects: it creates a demand for ICT tools, solutions and services and for the businesses that provide them. Development of the private sector benefited more than just their organisations and the C4C programme partners and users: the future growth in Africa and Latin America is closely linked to the private sector. In Africa alone, more than 15 million new job seekers enter the job market annually. Local businesses create local jobs, training local youth and using local talent. And these same businesses can also deliver services to society's most vulnerable people and come up with solutions that benefit economic development, healthcare and education on the continent.

Conclusion:
The C4C capacity development activities, executed in collaboration with local experts and local private sector partners, contributed to the specific goals of each individual sub-programme, as it gave people on all levels (partners, stakeholders, end users) the capabilities they needed to use ICT to change things in the sector they worked in. This way, C4C also contributed to Millennium Development Goal 8 (Develop a Global Partnership for Development) and more specifically target 8F: *"In cooperation with the private sector, make available benefits of new technologies, especially information and communications".*

Lessons learned

- **Raising awareness on technical solutions:** Addressing a lack of technical awareness among new partners at the start of the programme can be a challenge. The aim of C4C has always been to have partners select their own solution – knowing that partners know local context and needs best. Introducing possible solutions to partners needs to be sensitive and balanced, making sure that partners are aware of the possibilities and limitations of certain solutions, without pushing or enticing them.
- **Different organisations, different capacities:** In C4C, IICD worked with technical support partners in the different countries to develop capacities of partners and users in the Health, Education and Economic Development sub sectors, using the different steps in the social innovation process (see chapter 1) as a guideline. Partners would ranged from large, highly professional national organisations to small Community Based Organisations (CBOs) in the starting phase of their operations. Using the social innovation process therefore required attention for the maturity of organization and flexibility with regards to which phases of the process needed most attention with each specific partner. Capacity development efforts therefore did not aim to enhance each and every capacity required for partner organisations' activities, but rather focused on working with partners to tailor-make programmes aimed at the development of partners' human, organisational and institutional capacity to enable and sustain the effective use of Information and Communication Technologies (ICTs) to support their socio-economic development initiatives.
- **Required capacities:** Related to the previous point was the question of which partners to work with: with interested, established organisations that have strong capacities to begin with, or less mature organisations that may lack these capacities at the start of programme implementation, but who may develop them over time? A certain 'minimum capacity' (assessed at the beginning) may limit the risk of ending up with partners who fail to deliver, while on the other hand inexperience of partners may not determine their capacity to implement a programme.
- **Communities of practice and peer learning:** Because of the consistent combination of capacity building and knowledge sharing activities within the C4C programme, in most countries strong (national, regional) support structures have evolved of ICT4D implementation experts, - clearly differing from ICT experts - that are not only knowledgeable of innovative technologies but also have incorporated the awareness and skills to manage the change that it entails at the human and organisational level.
- **Learning by doing:** At the organisational development level, the development of ICT solutions was based on experiential learning approaches, allowing partner organisations to design systems and services that strengthen their own organisational capacity to serve their constituencies'. The suitability of the ICT solution was monitored and evaluated in a participatory manner, contributing to the partner organisation's enhanced understanding of how to adapt their ICT-enabled products and services to better suit their constituencies' needs, and to continuously self-renew as required. Through Action Research, assumptions made when designing activities to reach a certain objective were assessed during the implementation and when needed the project theoretical framework was adapted accordingly. Those assumptions have always been constructed around cultural systems at end-user level which could not have been anticipated before the inception phase.
- **ICT champions:** Each programme had a few change-makers: people who are especially talented and committed and who have the capacity of making a different in their organisation and beyond. For programmes focused on innovation like the C4C programme, it was imperative to spot these people – many times (young) ICT officers capable of translating ICT implementation into real social change. These champions must be nurtured. Project structures do not always allow for additional responsibilities or compensation so in order to sustain their commitment. IICD always made a point of addressing their intrinsic motivation, and developing their skills – not just to improve the programme, but also to keep them motivated. Over the years, this brought about several ICT champions who remained committed to ICT4D, even if they were no longer at their original organisation.
- **Working with local experts:** During implementation, C4C/IICD worked with local training institutions and technical trainers, and strengthened them to deliver support services to partner organisations. Where local training and technical agents did not have specific skills sets, IICD engaged its strategic private sector partners to build capacity among local training partners. By fostering an ecosystem in which local

training agents gain experience in supporting development organisations to implement ICT services and projects, a local resource base was established which was able to independently provide informed support in future.

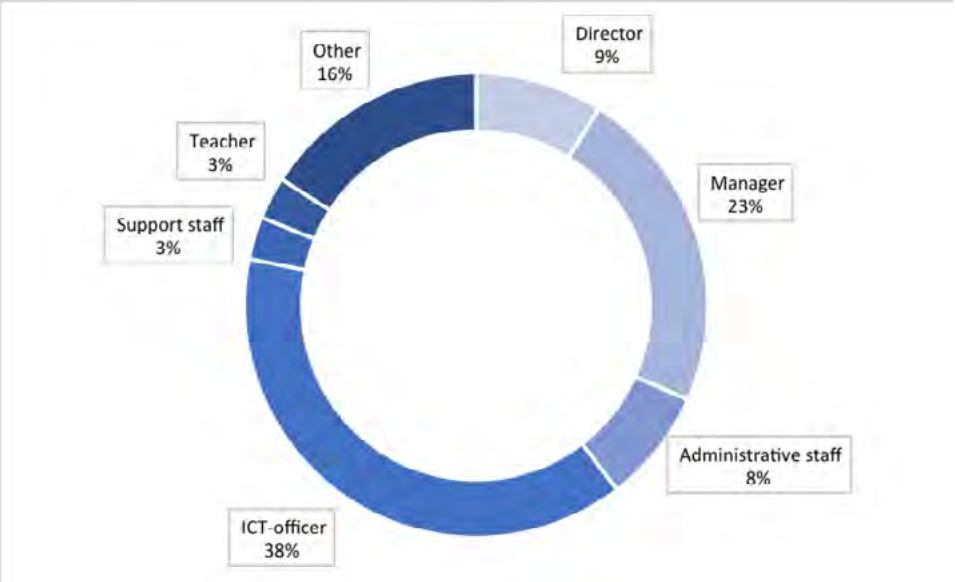
- **The importance of networks:** Development initiatives that make use of ICT have better long-term prospects if the environment they work in enables them to do what they do best. This means strong ties to not just their base of members, communities and other people they work for, but a network of local partners from the non-profit, private and public sectors. The multi-stakeholder dialogue that takes place in such networks is crucial to establishing an enabling environment in which ICT4Development projects can thrive. In the different countries where C4C programmes were implemented, different decisions were made with regards to networks. In some countries, like Uganda, Bolivia and Ghana, strong ICT4D networks, set up by IICD in the past, remained the best jumping off board for networking activities. In other countries, other, non-C4C networks or individual networking activities were a good way to share lessons learned with others or jointly work on lobbying and advocacy. The strong focus of C4C on the implementation of individual projects rather than networks did have an influence on the activities the networks could do, which did have an impact on the effectiveness of some aspects of capacity development. In the end, working in networks, whether formally, home-grown ones, external networks or informal or temporary ones, contributed to our partners' capacities to engage with their institutional context and meaningfully address and meet the broader goals of a country's sector.

Reflection on capacity development by partners

From 2011 to 2015, the C4C consortium provided local partners with technical and organisational support to ensure their project activities were implemented successfully. To create value for the communities supported by C4C, project implementation needed the alignment of several factors, including the availability of qualified staff in technical and administrative themes, adequate financial and human resources, and a clear vision of its objectives, among others.

C4C project implementation survey 2015

As lead agent of the C4C consortium, IICD conducted an annual implementation survey of C4C projects to evaluate their progress. The questionnaire included areas relevant to implementation, including the most useful forms of advice, the development of local partner organisational capacities under C4C, and project sustainability post-2015. In this chapter, an overview of the results of that questionnaire are taken up, focussing on answers related to the capacities partners developed under C4C, as well as the contribution of ICT to the advancement of goals, the partners' satisfaction on support and advise from the C4C alliance, as well as their satisfaction related to the service delivery and sustainability. The analysis below is based on the answers that were provided between 2011-2015 by 333 respondents working as C4C local partner staff. As indicated below, survey participants included, primarily, ICT officers, project managers and directors. Male/female ratio was 71%/29% - this is probably also because the overwhelming majority of respondents were ICT officer, who in many cases were male.



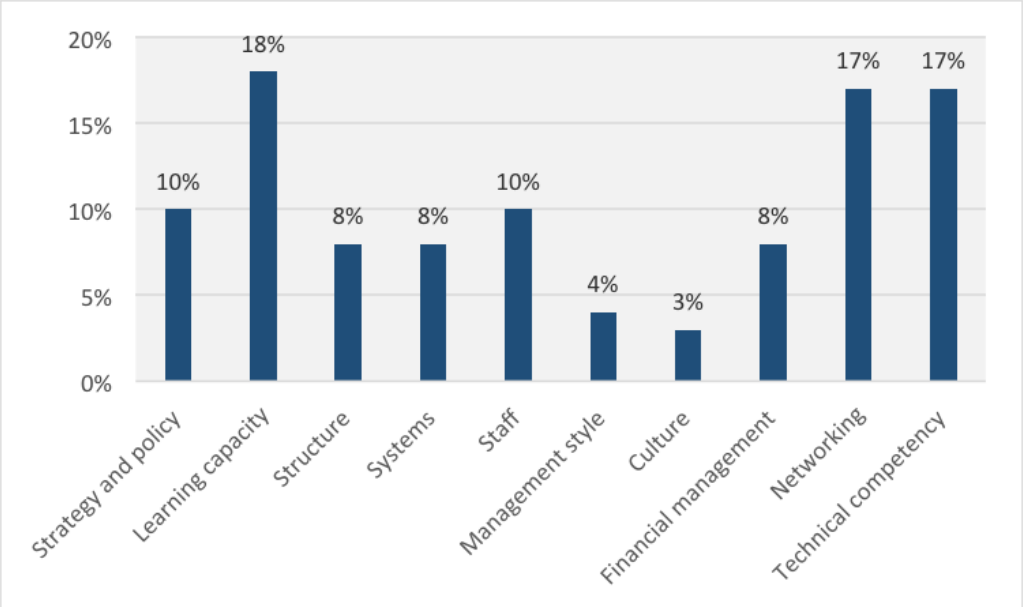
Capacities strengthened

One aspect the survey explored is the development of local partner capacities as a result of the partners' participation in the C4C Programme. For this purpose, respondents selected the capacities that they have developed thanks to C4C from a list of ten. The framework used is part of the Integrated Organization Model (IOM)[3]. In the survey, the model is used for exploratory purposes and aims to obtain more information about capacities that have been developed but may have been overlooked in previous analyses. The IOM's capacities that were considered in the survey are summarized as follows:

- Capacity to **plan and strategize**: planning long-term and translating the organization's mission into concrete goals.
- Capacity to **learn from experience**: learning from experience and using feedback to formulate and carry out policies.
- Capacity to **develop organisational structure**: defining roles, positions, and responsibilities.
- Capacity to **develop departments/systems**: regulating organisational processes including administration, planning, budgeting, accounting, monitoring & evaluation, learning, reporting.
- Capacity to **develop staff**: developing the capacities of staff members and designing activities and regulations in a way they motivate staff.
- Capacity to **develop management style**: developing leaders' roles and regulations including behaviour, quality, consistency, and availability.
- Capacity to **develop organisational culture**: creating a set of principles, styles, and values that guide the organization.
- Capacity to **manage financially**: develop resource mobilization (fundraising/ diversification), expanding income sources, and planning finances and accounting.
- Capacity to **network**: ability to maintain external relationships and coordinate activities with actors relevant to the organization.
- Capacity to **develop technical competencies**: ability to perform technical duties needed by the organization.

When asked which capacities of the organisation were strengthened through the C4C programme, partners gave varying answers. As most prominent, 18% of partners mentioned "learning capacity" (the ability to learn from experience and use the feedback in formulating and carrying out policy). Also mentioned a lot (by 17% of partners) were "networking" (the ability to maintain relationships and to coordinate them with actors in society who are relevant for the organisation) and "technical competency" (the ability and the means to perform certain technical duties, depending on sector and field of work).

Overall, an overwhelming 94% of partners indicated that the advice and coaching from C4C alliance partners has strengthened capacities of their organisation



3 http://www.tacso.org/Capacity_Development/online_courses/cso_management_course/csomt_03.pdf

Respondents were also asked to give a concrete example of what their organisation was doing differently as a result of the C4C programme and these new capacities. This resulted in a large variety of answers. Among those that came up a lot were for instance:

- The organisation integrated ICT in other projects too (some even mentioned: in all projects)
- Several organisations reported working more efficiently now that they are using ICTs, others focus on the improved communication of their organisation now that they are using ICTs, the fact that they now use social media, text messages or their website to communicate with their users or the public at large.
- Many organisations reported positive changes in their organisation, for instance in developing new strategies or in formalizing certain ways of working. Several explicitly mention the use of new business models for specific services of their organisation. Others also focus on the increased attention for the longer term and for sustainability of the projects' services.
- Many organisations stressed the increased collaboration with others, in aligning activities, pooling resources or sharing developed materials and experiences.
- Some organisations reported the influence on their training programmes: they are trained and are now training others to do the same, sometimes they may approach that training differently.
- Finally, several reported the increased use of feedback from communities and users, informally via smartphones, but also via online or text surveys.

"In the beginning NairoBits worked less with like-minded partners in the ICT field, as a result of the C4C programme the organization has been able to network with partners in ICT related fields like economic development, Health and Education sector. It is also for the first time that the organization will test its projects through Action Research to check on the level of delivery and performance. C4C programme has ensured that NairoBits is constantly thinking of programme exit strategy and sustainability for the community based projects."

Respondent from Nairobits (Kenya)

Based on the survey results, we can conclude that C4C capacity building has enabled local partners to learn from previous experience, to network with others and make use of their new contacts by means of collaboration and sharing, that they have increased their technical competencies and were using those to train others and to embed ICT broadly into the different programmes of their organisation and that attention to management, finances, strategy and policies have increased their organisations capacities greatly.

The contribution of ICT to the achievement of C4C goals

In the survey, partners were asked how ICT helped to reach the objectives of their organisations. As this was an open question, the responses were very broad and show a plethora of benefits and achievements. The most common answers given by the respondents revolved around increased knowledge and skills among the target groups of the projects (teachers, students, farmers, nurses, parents, health workers, etc.). Respondents gave more specific examples too, like increased ICT skills, mother tongue education, interactive teaching or knowledge of certain farming practices. A second area that many respondents spoke of were improvements in communication – either communication with their target group, allowing sometimes for an increased reach or broader feedback; communication with external parties, through an improved online presence (website, email, social media); or improved internal communication, for instance with staff members at other locations. The third theme mentioned often by respondents was the contribution of ICTs to the organisations involved: improved decision making, financial management and administration, increased transparency of information and, first and foremost: improved efficiency, time savings and savings in costs. Also mentioned, though to a lesser extent, was the contribution of ICT to the innovation in partners' organisations or sector, and the contribution to increased voice of the target groups with decision makers or in lobbying and advocacy processes.

"ICT has helped transform the classroom environment through easing access to course information and boosting the passion in both teachers and students to

search for information and remain up to date. Administratively, data has been digitized and retrieval and statistics have been made easy. Currently we are using different office applications using both computers and tablets."

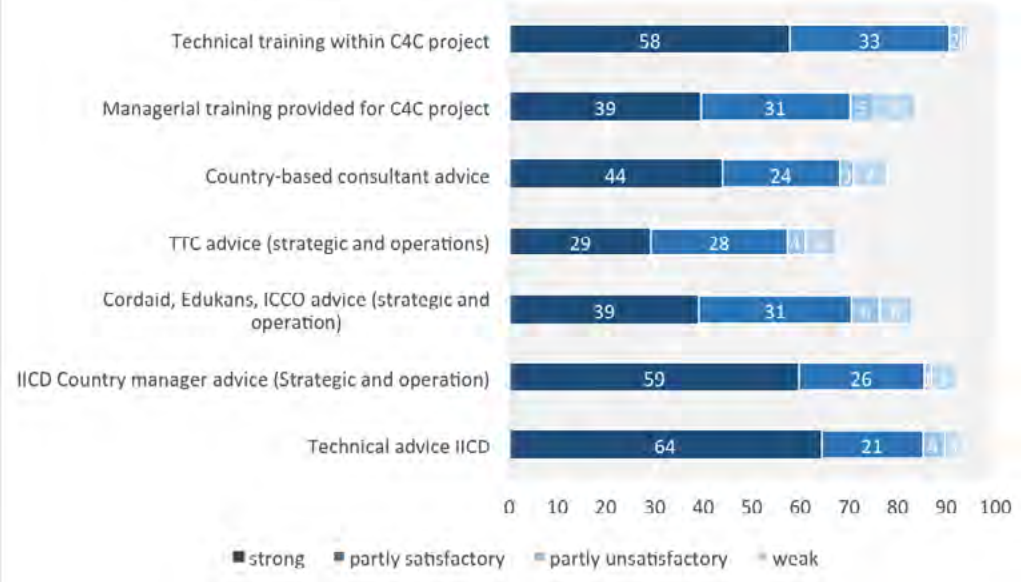
Respondent from Don Bosco Youth Technical Institute (Malawi)

"ICT has played a major role in disseminating information to our target beneficiaries including health consumers, health workers and policy makers. Specifically it has provided an easier means for mobilizing mothers to attend the integrated outreaches especially through the Short Messaging Service (SMS) platform and radios. It has contributed to collection of information on client satisfaction for advocacy. Internally, information systems have facilitated easy archival and retrieval of project data."

Respondent from UNHCO (Uganda)

Local partner satisfaction with the advice provided by the C4C consortium

ICT4D projects require qualified strategic, operational, and technical support to develop adequately. To measure these objectives, the survey gauged the respondents' satisfaction or dissatisfaction with the advice given by the Dutch C4C consortium partners. The results (expressed by the respondents selecting the satisfaction or dissatisfaction options) are shown below. On average, 75% of partners were (very) positive regarding the different kinds of support provided by C4C. Especially high levels of satisfaction were found for technical training (85%), strategic and operational advice by the IICD country manager (85%) and technical training (90%).



Most useful advice from the C4C consortium

Partners were also asked (via an open question) what they felt was the most useful advice from the C4C consortium. Many respondents here spoke of technical advice they received during the implementation, such as how to set up a platform or website, what technical solution was most useful and relevant for them and how to use multimedia to bring across a message to the target group. Also mentioned a lot was advice on capacity building, both internally (what capacities would be needed for the project) as in the best way to approach training of the target group. Others mentioned advice on sustainability, fundraising and business models for the future of the project. More in general, many partners also mentioned other strategic advise such as the need for collaboration with others, the possibilities for scaling up the project and the need to keep track of impact of the project (for instance by means of action research). Less mentioned, but also important was advice regarding content development and development of materials for schools, hospitals and farmers. Several partners also underlined the importance of the advice related to the social innovation process as such: how does innovation work? Finally, it is interesting to see that several partners did not mention advice from the C4C consortium as such, but rather the advice they received from peers in the networks, activities and trainings that C4C facilitated.

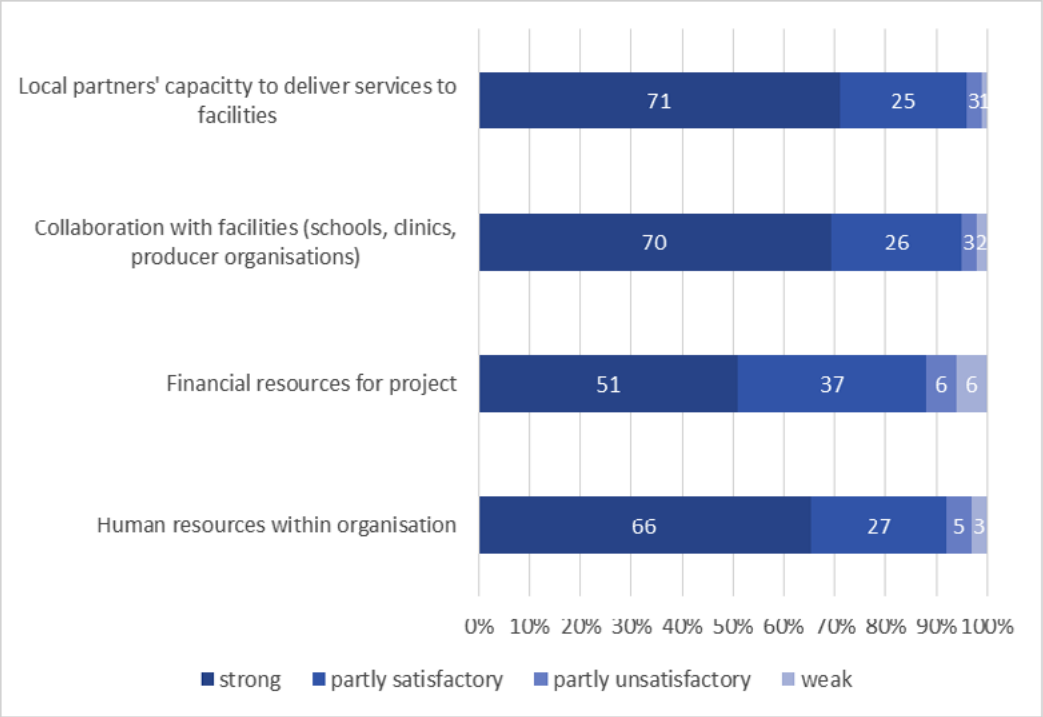
"We received constant and ongoing support from C4C to rethink our way of working. In this final phase they recommended us to combine all experience and lessons we learned throughout the project to define a series of integrated solutions – they can help us to scale up quickly and dynamically."

Respondent from CESIP (Peru)

"…the aspect of building internal capacity to do project activities has been so emphasized through the C4C workshops where we have always received trainings on areas relating to our project work Secondly, as a result of the C4C workshops and technical support, we have managed to embrace action research in our project and a such we have been able to know which interventions work and which ones do not…."

Respondent from HealthChild (Uganda)

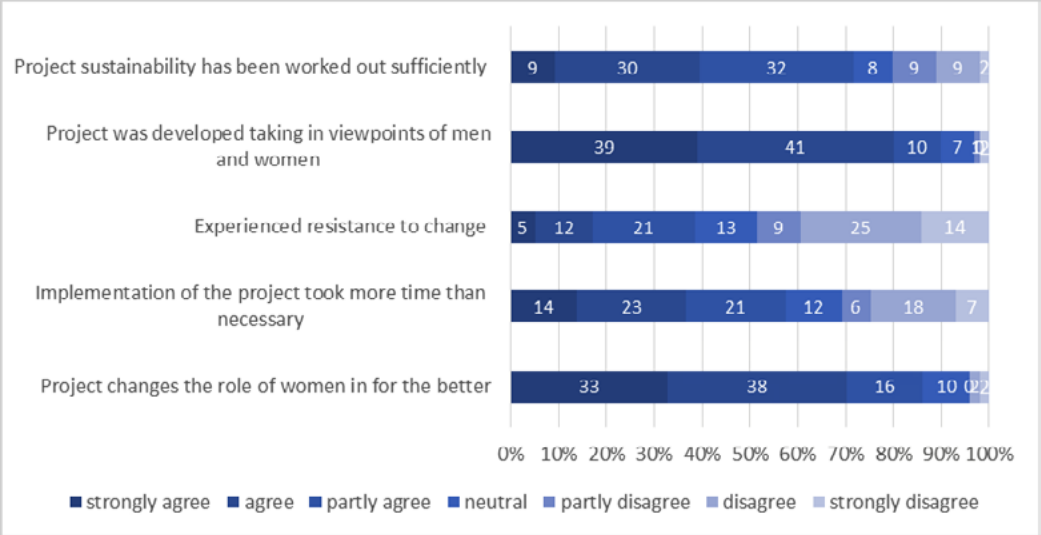
Service delivery and resources for the project



When asked how satisfied they were with the resources that their organisation made available for the project, partners were generally quite satisfied. 93% was (partly) satisfied with available human resources, and 88% was (partly) satisfied with available financial resources – even though financial resources were, for many organisations, always a struggle. Partners also highly valued (96% (partly) satisfied) their organisation's collaboration with the facilities they served (like schools and clinics) and their capacity to deliver services to these facilities (96% (partly) satisfied). All these aspects have been of great importance to a sustainable continuation of the projects.

52% of local project team member indicated that over the years, as a result of their project, other similar projects were initiated, and/or proposals were developed. This high percentage may be a result of the fact that C4C focused primarily on (small) pilot projects which allowed for simple replication. Also the often short term clear (envisioned) impact created demand for such replication. Especially the stronger project managers were able to source funding and replicate. Interestingly, the percentage is also in line with the capability "to adapt and self-renew" assessed quite highly with many partners (see chapter 1.4).

Set up and implementation of the project



Partners were also asked about their experiences with project implementation. Some of these questions highlighted familiar challenges the project teams had: 38% of respondents claimed they met with resistance to change during implementation, 5% of those even "strongly" agreed with the statement regarding resistance to change – at the same time 14% disagreed strongly with the same statement, which could suggest that they met no resistance whatsoever. Especially in the health sector the resistance to change was sometimes quite apparent, as the integration of ICTs in health facilities made for more transparency, different roles and stricter policies – see chapter 2.3 for more details.

The same mixed opinions we see when looking at implementation time or delays: 58% of respondents indicated that "Implementation of the project took more time than necessary" (14% "strongly agrees" with the statement, 7% "strongly disagrees"). In the end, these experiences are fairly common for people working on innovative projects.

Partners tend to agree with statements underlining the equity of their project setup: 87% claim that their project changes the role of women in their community for the better and 90% claim that their project was set up taking in the viewpoints of men and women. This has been a continuous point of attention to C4C and local partners (see also chapter 1.3)

Sustainability analysis

In this last period, it is of course important to see how project teams look at the sustainability of their projects. 75% of partners indicated that "project sustainability has been worked out sufficiently". This percentage has been more or less consistent over time. Compared to the views of the surveys held at the sites (health facilities, schools and producer organisations) that were laid out in chapter 1.2, we saw that partners were generally more positive about sustainability. The understanding of the concept of sustainability itself changed over time. At the start of C4C, the mandatory paragraph on sustainability in the C4C proposal template was either not well explained or not well understood by partners. Sustainability has been a returning topic in many capacity building events, slowly developing a common sense of what it entailed. Only when it really sank in that C4C would not continue and hence the funding would stop, sustainability became a concrete concept that was considered important to partners and not merely a prerequisite to meet the donor's criteria. In this last phase, more concrete sustainability related activities were requested by and organised for the partners, such as business plan development workshops. Partners were supported in the evaluation of their technical solution on durability and means were sought to guarantee that the ICT officer would remain part of the organisational set up.

The survey also asked partners (in an open question) what were they doing to make sure their activities could continue after the end of C4C. At first instance, partners seemed to focus much on the financial sustainability of the project. Many partners mention commercialization of their services as a contribution to financial sustainability. Examples given are the use of information centres for a fee, cost sharing with the community, or the use of electricity from installed solar panels for a fee. Another example was: paying for the information received (either directly, per

message, or as part of a raise in an existing membership fee). Some organisations indicated that they set aside part of the revenue collected through ICT use. Other solutions mentioned were collaboration with the local authorities (receiving funds, making sure the project/services become part of government plans) or fundraising with other donors. Many partners also mentioned aspects that contributed to the organisational or technical sustainability of the projects, such as the development of needed capacities in the organisation or with end users, technical maintenance or the monitoring systems in place to keep improving on what they do. A very small part of the responses (6 out of 112) indicated to have no plan at all.

"…partial commercialization of the ICT4D centres (telecentres) where profit and social good objectives will be combined to sustain the operations of the centres. Facilitate the clinics to set aside a percentage of their internally generated revenue to maintain the operations of HMIS…"

Respondent from ACDEP (Ghana)

Other activities undertaken by C4C and partners to address sustainability in the programme can be found in chapter 1.4 (building capacities).

Role of C4C in strengthening organisations in the local ICT sector

As part of its responsibility for capacity development within C4C, IICD has invested heavily in capacity development of ICT businesses in the countries where C4C was operational. This was primarily done with the aim of providing support to C4C programmes and implementing partners, but it has also become a specific focus of our work. Capacity development support involved boosting capacities of existing businesses to provide training and advise, it involved setting them up together for networking and knowledge exchange and it involved on-the-job training and joint seminars for young ICT staff.

IICD's approach to capacity development is both structured – with a clear path of courses leading to specific knowledge and skills deemed important for ICT4D projects – and tailored in on-the-job coaching and collaborative work. Taking time to jointly discuss the ICT4D landscape in a certain context, the business or product possibilities, brainstorming on new ideas or experimenting with new solutions on the ground is the hand-on approach that was often mentioned and valued by private partners.

Though work in remote, rural communities may not be as glamorous as working in an urban office setting, many, especially younger ICT staff admitted that it was these experiences that added to their skill set: the challenge of bringing about change using ICT in difficult contexts and the fact that they were often the sole expert of this kind in these areas, made that they were challenged way above the work they would get under normal circumstances. Another aspect of the involvement with the private sector was the joint development of services, products and markets. The demand for ICT services, products and equipment was boosted as a result of C4C programmes, in areas where there previously was little or no demand for this. Partner organisations needed advice, training and equipment for their projects, but this demand also increased when ICT got further embedded in the partner organisations and the community at large.

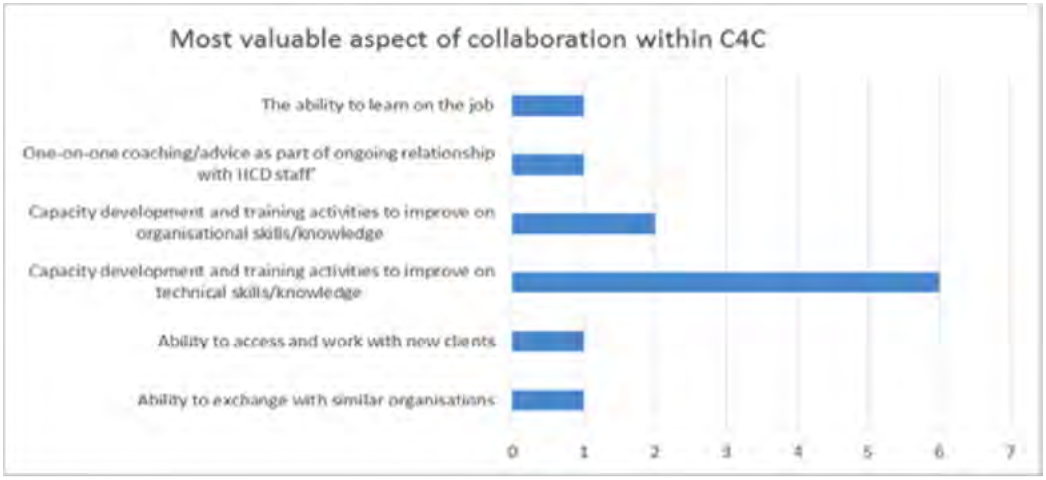
In order to look into the effect of the collaboration between C4C and local ICT businesses on their development, IICD asked technical support partners to fill in a survey. The results of this survey are taken up below.

Analysis technical support partners' questionnaire

The survey was filled in by 12 respondents from 9 countries in August and September 2015. Their organisations all offered technical support, but they were organised in various ways: some were NGOs, some were education or research organisations, others were social enterprises – all combining this with either ICT advisory services, business advisory services, hardware supply or a combination of those. Generally, their organisations were small: 6 organisations had 1-5 employees, 5 had 6-15 employees and only one organisation had more than 25 staff members. The respondents that filled the questionnaires were generally managers or directors (8/12).

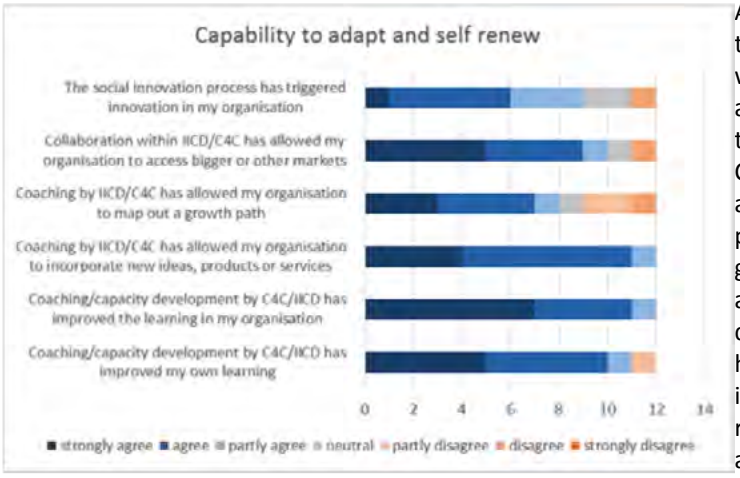
When asked what aspect of their collaboration within C4C was most valuable to them 50% (6 respondents) indicated the capacity development and training activities to improve on technical

skills/knowledge – other answers varied greatly, yet the focus on capacity development – by organisations that themselves were hired to develop capacities in others – was noteworthy. It showed that C4C tapped into the need for more innovative and latest technologies offered by the IICD/C4C Technical Advisors who had experience and knowledge of technologies that technical support partners did not easily have access to. Additionally: technical support partners may have had lots of technical skills and knowledge or had a lot of experience in formal training, the capacities they developed by working with C4C (focusing on soft skills too) made them more well-rounded ICT4D expertise organisations.



Akin to the analyses of the development of the capabilities of implementing partners, this survey looked into the capabilities of technical support partners. Specifically for these partners we looked into their capability to adapt and self-renew, the capability to carry out technical, service delivery and logistical tasks and the capability to relate and to attract resources and support as these were deemed most crucial in their specific case.

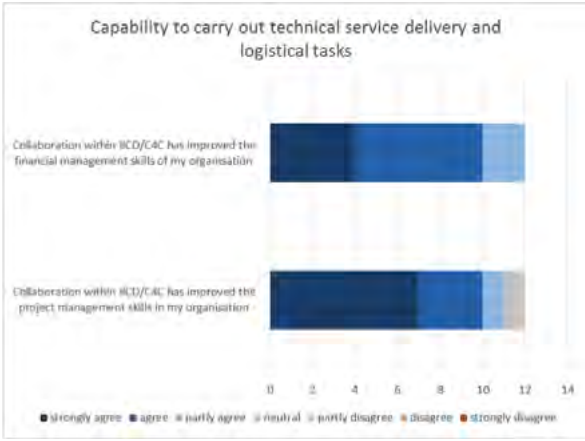
Starting with the **capability to adapt and self-renew** – this capability is a key requisite for organisational survival and central to its ability to continue to be relevant, effective and efficient within a changing environment and towards changing needs.



As visible in this graph, technical support partners were generally very positive about the contribution of their collaboration with C4C to their capability to adapt and self-renew. Very positive responses were given to the statement and "coaching/ capacity development by IICD/C4C has improved the learning in my organisation". The relationship between C4C and technical support partners was very different from an ordinary client-service provider relationship, meaning that the focus was not merely on the services the partner provided to other, but also, indeed, on their learning and development. Practically, this meant that technical support partners and their staff could and did participate in trainings, knowledge sharing events and other learning activities. People also responded positively to the statement "Coaching by IICD/C4C has allowed my organisation to incorporate new ideas, products or services". There was a number of ways in which technical support partners were triggered in this respect. The *Round Table* and *Solution Design* workshops that are part of the Social Innovation Process tend to stimulate the development of new ideas – the co-creation of ideas with actors that they previously were not in contact with is another. This was also shown in the positive response to statements on the access to new and bigger markets, as well as the triggering of innovation in the organisation. IICD's Country Managers and Technical Advisors spent time and energy to coach technical advisors one-on-one – this coaching is primarily catered to their involvement in the programmes, but discussions regarding

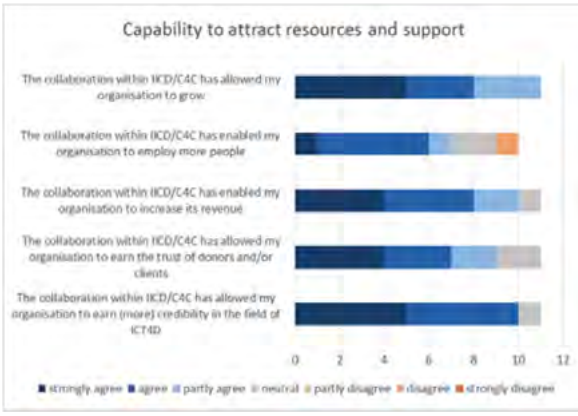
the positioning of their organisations (vis-à-vis the existing market, the government or new, upcoming markets) are often part of this process too. This seemed also to have an effect on the partners, for instance on their ability to map out a growth path for their organisation.

The next capability of relevance to the technical support partners is the **capability to carry out technical service delivery and logistical tasks**. This capability describes the knowledge, expertise and experience required to carry out actions and achieve the results aimed for. This includes technical and logistical skills, but also managerial capacity such as programme analysis, financial management, project management and advocacy.



In the graph presented, we see more positive answers regarding the effect of the collaboration on technical service delivery tasks, like the financial management and project management skills in the organisation. This may again refer to coaching sessions by IICD staff, but also to the experience gained through 'learning by doing' in the C4C programmes. Finally, some partners have benefited from IICD's collaboration with the Dutch/international private sector partners – some of these partners have given (in kind) advice to their Southern counterparts as part of their Corporate Social Responsibility activities.

The last capability used here is the **capability to attract resources and support** – looking into the ability to initiate and maintain relationships with other organisations and individuals and to attract support and resources for continued existence.



The last graph shows mostly positive responses, especially regarding the growth of the organisation and the credibility earned by collaborating with C4C/IICD. Technical partners often mentioned that acquisition of larger assignments for external partners (donors, government, private sector) in their countries was not always easy, especially for the smaller organisations. This was only partly due to lack of skills or experience, and to a large extend because these parties tend to favour larger, more well-known ICT service providers. The collaboration within the C4C programme helped these small businesses to build a track record, collaborate in changing alliances with others and make a name for themselves – something that allowed them to land more assignments in the future.

The case of TrioConsult (Zambia)

TrioConsult is a 10-man IT firm from Lusaka, Zambia, headed by director Lee Muzala. Though TrioConsult was founded in 2005, Muzala's relationship with IICD started 3 years prior, when he worked for a Zambian Internet Service Provider and was asked by a friend to provide some training for IICD partners. Over the years, Muzala has worked closely with IICD, and later with Connect4Change, in different capacities: as a trainer, advisor, service provider, developer and supplier.

While he was hired by IICD to provide expert advice to Zambian project partners, this work, and his relationship with Connect4Change, increased his portfolio and business income. It also allowed for him and his staff to develop professionally and gain extensive experience in training and facilitation. Many of Muzala's best business ideas were formed during formal and informal discussions on the state of ICT in Zambia with IICD staff. A hands-on approach that is not taught by books or courses, but that he now advocates in his own firm too: 'learning by doing'.

"The aspect of creativity and innovation solving social problems is one area that has helped Trio Consult be where it is now. Over the years we have strived to come up with solutions aimed at solving the inadequate learning resources in Zambian schools by embarking on a project which has now produced about 4,700 3D animations in Sciences and Mathematics covering the curriculum from Grade 1 to Grade 12."

Lee Muzala (Director TrioConsult)

When asked (in an open question) how the technical partners look back at their work with IICD/C4C, at the most significant change in their organisation, and their development, partners mentioned:

- More understanding of ICT4D and how to serve the needs of clients in this area
- The opportunity to work with NGOs and grassroots organisations
- The opportunity to take part in training and knowledge sharing events
- Meeting of others, development of a network in ICT4D
- Development of the organisation in terms of management skills, financial skills, visibility, human resources
- Gaining understanding of organisational weaknesses
- Gaining trust from donors
- The opportunity to grow as a start-up
- Personal development

"The most significant change in my organisation's ability to serve the ICT4D needs of my clients was include the integral development focus, design of training based on needs, and continuous evaluation."

Technical support partner working in Bolivia


BenQ

Chapter 2.6

WORKING IN PARTNERSHIP

The implementation of C4C was a collaborative effort and brought a lot of insight. In previous chapters, this report looked at activities, results and lessons from the implemented programmes. It is good to realize however, that these programmes were implemented by an alliance of different partners. In this final chapter therefore, this report looks at the collaboration within the partnership at Dutch level and within the countries.

The C4C partnership

The C4C partnership was designed to create synergy. The combined strengths, areas of expertise and partner network of each Dutch alliance partner made for a multi-disciplinary partnership with strong implementing capacity. This has proven to be true. The C4C programme has been implemented as planned and, in some areas, has surpassed the targeted output results and outcome expectations. However, the differences between the coalition partners have, at times, also been a challenge to the partnership as a whole. Different institutional setups, systems and procedures needed to be geared toward one way of working, learning and reporting. Different areas of expertise led to various perspectives and required each partner to stretch its understanding of the other. Given that each coalition partner was representing its specific organisational interests, this was a challenge for all involved.

In 2013, the C4C partnership was reviewed by an external Partnership Broker. The partners were interested to assess current arrangements in order to determine areas of value or strength, as well as areas for development or revision; to engage in a broad consultation to determine future vision and strategy for creating a more effective and efficient partnership and achieving the aims of the alliance; and to inform a roadmap for the post 2015 period. The C4C partnership was assessed on the following criteria:

- **Mind-set & competencies** - explored the level of equity amongst the partners, flexibility and their genuine interest towards each other.
- **Set-up and design** - examined how the partnership was developed in the design period.
- **Operations: effectiveness and efficiency** - explored how partners perceived the daily operations of the partnership.
- **Results and Value** - considered the progress and added value of the partnership for all individual partners as well as for their shared objectives.

The assessment pointed towards a strong programmatic partnership with an efficient implementing capacity. It recommended more clarity on role and responsibilities amongst each of the coalition partners and the preferred partner TTC Mobile. This could clarify operations to the local partners and decrease the misunderstandings between the coalition partners of 'who is responsible for what'. The coalition partners subsequently organised country meetings in which coordination per country was explored more deeply, roles and responsibilities were clarified and 'natural' leads per country were identified. At meetings, 'collaboration' was put on the agenda to see if there were any underlying challenges. It was established that each partner had entered the partnership with a different level of ambition and intent. Clarifying these increased the transparency in the partnership. The C4C partnership consciously started capturing and celebrating the successes of C4C in learning events and publicised them as a 'license' to continue the work after 2015. The local partners in the countries emphasized the importance of continuous support for the projects that were initiated. The Dutch coalition partners did their utmost to bring the successes and power of the programmes to the attention of the Dutch government. The coalition partners discussed 'moving on' after 2015 and the opportunities for continued collaboration. In the end, it was decided that the 5 coalition partners would not move on together to continue their programme, although they teamed up in pairs for new projects.

Overall lessons learned: challenges and added value of working in partnership

We asked what challenges emerged while working in partnership with different organisations with different approaches and organisational cultures? What value additions were created? Below are some conclusions from the C4C Dutch coalition partners:

- The process of jointly designing C4C projects in the countries has taken a lot of time and effort in the early MFS2 period. Besides regular programming, formulation and working with the partners, C4C staff members had to spend time getting to know each other, each other's way of working and on discussing views and approaches. Given that this kind of preparation was not planned for it was often done quickly and only when a challenge arose. Partners stressed the importance of taking enough time to get to know your partner – this means underlying organisational interests, the person representing the partner organisation and their level of ambition.
- Though each coalition partner had an added value that was recognised by the others, staff members working together, partners in the countries were not always aware what this added value was. In some sub-programmes or countries this was enhanced by the many reorganisations that led to staff changes. Some staff members mentioned more time was spent on aligning 'bureaucratic requirements', rather than looking at the knowledge and experience each organisation brought to the table. That said: several alliance country teams underlined working very well together and learning a lot from each other – in West Africa for instance, staff members were quite content with the exchange in experiences that took place regarding the value chain approach on the one hand and ICT integration on the other. In the end, working in partnership has not led to a joint approach or methodology – though in some cases new innovations (like the eMarkets in Latin America) have stemmed from this collaboration.
- Agreements made at the start of C4C sometimes helped and sometimes hindered collaboration – the division of administrative tasks meant that IICD had to adjust to the administrative procedures of ICCO, Cordaid and Edukans – which were different from those of IICD, something that in turn lead to some delays in disbursements of funds. The annual C4C learning days on the other hand were a great addition to joint learning and understanding more of each organisations' approach.
- Focus in the programme was on the working relationships between partners in one sub-programme (ICT4Education, ICT4Health, ICT4Economic Development). The programme hardly had any cross connections between these sub-programmes.
- External influences on the partnership are also important to note: a 'shrinking market' for international development can stimulate collaboration, but can also enhance competition. This became more apparent after 2-3 years of collaboration, when the Dutch Ministry also made it clear that the collaboration that defined MFS2 was not foreseen for the post-MFS period.

C4C partnership and the Dutch government

The C4C coalition partners shared progress and learning in an in-depth exchange with DGIS every year. The C4C partnership has experienced DGIS as a collaborative and supportive resource, especially in the area of ICT and Gender. Specific networks and support were given to conduct studies in these areas which greatly enhanced the gender dimension in the C4C programme. In the future, when DGIS aims to become a true partner in the Strategic Partnerships (2016-2020), it has to realise that its double role (that of funder and partner) could create ambiguity. It is therefore recommended that institutional interests are clarified beforehand, double agendas are made transparent and the people representing the institutions get to know each other and their professional backgrounds. All too often partnership challenges are created by personal incompatibilities and by institutional pressures which play out on an individual. Fortunately, these can be solved by people if they relate to each other in more than one way. A healthy personal partnership can keep an institutional partnership afloat!

Annex 5

KEY LESSONS FROM ECONOMIC DEVELOPMENT SUB-PROGRAMME STUDIES AND RESEARCH

This annex includes some of the key lessons and highlights from different studies done within the Economic Development sub-programme.

Joint Evaluation Trust in Ethiopia

As part of the work with the Joint Evaluation Trust (JET), an evaluation took place with partners in Ethiopia, where C4C worked with a consortium of six NGOs, and with Facilitator for Change (FC) Ethiopia as the contractual partner. The five other partners were ADAA, CDI, ERSHA, HUNDEE, and OSRA. Together, these partners aimed to enhance organisational performance of 118 Farmer Marketing Organisations and 6 unions through effective utilization of ICT; enhance production, productivity, quality of products and farmers awareness using ICT of 50,000 smallholder farmers and to provide access to relevant market information through mobile devices and Internet for at least 16,000 farmers. In the evaluation, C4C partners were covered on all three evaluation topics: FC was analysed for Millennium Development Goals, both HUNDEE and OSRA for Organisational Capacities and ERSHA for civil society impact.

Contribution to Millennium Development Goals: Facilitator for Change was responsible for the ICT4Economic Development project in Ethiopia, which according to the JET evaluators was well designed and implemented. The project reached some of its objectives but also failed to realize others. In particular the members' practice to sell most of the surplus to private traders concerned a major challenge. Moreover, C4C failed to identify several expected treatment effects (except for food security), which made it difficult to attribute these results to project interventions. The observed results are relevant for the project beneficiaries but further improvement is needed: the evaluators suggested improving the turnover of the unions by motivating members to sell their surplus through the FMO. At the time of the evaluation, farmers had little incentive to do this and they prefer to sell to private traders. It was too early to assess the efficiency of the project as the effect on most outcome indicators was still lacking or weak. Moreover, effective use and the realization of effects at farm level required a certain learning period. The project was too ambitious in expecting that they would be able to set up a working ICT infrastructure and realize outcomes in only a three year period.

Capacities of civil society organisations: The support by C4C has greatly influenced the improved ICT capacity of partner organization HUNDEE. According to the evaluation, the organisation developed in all 5 capabilities, especially regarding the capability to act and commit and the capability to adapt and self-renew. This could almost entirely be attributed to C4C capacity development, coaching and opportunities offered by the sub-programme's implementation. During the endline workshop the key organisational capacity changes brought up by HUNDEE's staff were "improved capacity to facilitate behavioural change in rural communities"; "improved capacity in adaptive management"; "improved capacity in communication and information sharing"; "improved capacity to apply an integrated (multidisciplinary) M&E system"; "improved capacity in resource mobilization" and "improved capacity to design drought resilient livelihood programmes in pastoral and semi-pastoral areas".

Civil Society Impact: Farmer Market Organisations in Ethiopia became more independent since the start of the project. Those having access to electricity were equipped with ICT tools to conduct digital transactions, which helped them to improve their bargaining position when negotiating with traders. Meanwhile, they became a member of the local cooperatives association – meaning they became a government-recognised, legal commercial entity, allowed to facilitate farmer trading. This also allowed them to diversify their financial resource base. More women were reported to take leadership positions in the FMOs, and female membership increased slightly from 27 % since the baseline to 31 %.

Kenya External Evaluation

In 2014, an independent Kenyan evaluator conducted an assessment of the economic development projects in Kenya ("ICT for Value Chain Development"). For the study, 329 farmers were interviewed using questionnaires. In addition, 10 focus group discussions and 18 key informant interviews were conducted. The study was presented in 2015 and the key findings regarding outcomes are presented below.

Background to the projects: The implementation of ICT for value chain development (VCD) projects by FED consortium members started in 2011, and was reviewed in 2013. It was aimed at improving the income levels of smallholder farmers in Kenya through integration of ICT solutions for enhancement of technical production and market information in value chains. Specifically, the projects wanted to enhance capacities of 4,450 smallholder farmers to use ICT solutions (e.g. mobile phones, radio, ICT centres) to access information about markets and production. The project was also to enhance efficiency and effectiveness of the staff and management of the 5 consortium partners to be able to better facilitate value chain development using ICT. Successful implementation after the first 2 years, saw the extension of the ICT for VCD project and the increased outreach aim of 20,000 farmers.

"The ICT project has given us a new lease of life again. The project has really helped us because before we used to survive on vegetables but now things have changed. I can now earn more income and I don't depend so much on my husband. I can now put money in my account and use it to start other projects like poultry."

Interviewee from Nyanza, Kenya

Key findings:

- Farmers expressed during discussions that all **ICT channels** were very important and useful to them with some farmers singling out videos as the most important and effective approach especially in demonstration of production processes. Short message services (SMS) were also recognised to play a major role in terms of marketing and price updates. From further discussions with farmers, it became evident that most of the farmers equally used mobile phones and radios on daily basis to access relevant information to improve their production outputs and quality. The farmers also appreciated the efficiency of SMS platform in mobilizing farmers for various critical trainings and meetings.
- The evaluation saw that the **income effects** of the ICT solutions were substantial: 68% of farmers had an income increment of 20-25% compared to previous production seasons – 11% had even increased their income with more than 25%.
- Based on variable analysis of five indicators of **livelihood**, the evaluation established that 89% of farmers noted that their capability to purchase food had significantly increased, 85% noted that their ability pay for school fees improved, whereas 77% of farmers reported an improvement in their ability to initiate other income generating projects. About 70% equally reported that their ability to pay for medical bills had improved. The project identified and addressed the information gap that for a long time hindered farmers from enjoying maximum benefits from agriculture. The projects were highly relevant as farmers' lacked of adequate information in terms of what crops to grow as cash or even food crops was adequately addressed and thus the project could not have come at a better time.
- Efficiency of the project was assessed based on the project's desirability in terms of **gross return on investment**. The project total investment amounted to 681,950 Euros (first phase investment was 434,000 Euros while the second phase investment was 247,950 Euros). This investment resulted in cumulative value of 6,950,000 Euros (KES 843 million), giving a fairly high return on investment (ratio of 1:9), implying that every Euro invested yielded up to 9 Euros worth of returns and benefits.

Case: FIT Resources in Kenya

In Kenya, FIT Resources developed an agricultural Radio program in 2012 in partnership with rural radio station Rware FM and HSHC. In the model, FIT Resources trained the radio staff on BDS (Business Development Services) programming and together created the "Kuonjorithia Urimi" programme with HSHC providing the content and extension services to the targeted 5000 farmers. They also used Interactive Voice Radio (IVR): This is a voice based technology used for information dissemination. FIT Resources piloted the technology for the agribusiness radio program where farmers would call in, access information, and leave voice feedback. The platform then generated a lot of call traffic but the capacity that was used was very limited (1 call at a time). FIT received over 450 calls per program session, with an average of 70 voice messages, most being questions.

Action Research Economic Development partners Peru

As discussed in chapter 1.6, Economic Development partners in Peru worked with agricultural producers, handicraft producers and families working in tourism, in Action Research (AR) processes to gain more understanding related to the effects and lessons from their projects. The report with lessons was prepared in 2015. Some examples listed in the report were:

- **Commercialization of products:** Smallholder producers used mobile phones, social networks and information from notice boards to communicate with buyers of agro-ecological products, saving time in making a sale. Communication and interlinking was

quick, easy and low-cost for both buyers and consumers. Producers received orders by having their children or grandchildren market their products on Facebook and local sites.

- **Improved production processes:** Smallholder producers used video with themes related to agricultural production in order to improve on quality – this has resulted in semi-industrial standards for some products. Producers indicated that through the videos they learned new farming production techniques that add value to their products.
- **ICT and Rural Community Tourism:** One of the AR processes focused on the perception of families working in rural community tourism towards the usefulness of ICTs for their services. They found the tools useful for the promotion of their products and services, allowing for direct contacts between small entrepreneurs and tourism promoters and selling of rural community tourism packages through different channels (like Facebook, website, email). Respondents in the AR survey indicated that their income has increased with about 10% since they started using these new tools.
- **Saving time:** Another AR process looked into time savings in terms of supplying handicraft products and selling them. Before the project, most craftswomen depended on craft fairs and intermediaries to sell their alpaca fibre and hand-knitted products – it would then take weeks or even months to sell products, usually also involving travelling to a nearby city in order to communicate with the intermediary. They had to spend a lot of money on travel and communication costs, before a sale was even made. Using ICT tools allowed those craftswomen and alpaca fibre producers to directly communicate with potential clients, eliminating costs and much of the time spent before. Most products were then sold within 1-3 days.
- **Product innovation:** A third AR process found that according to alpaca fibre producers and hand-knit crafters, the use of ICT tools also contributed to innovation and improved quality of products. Besides communication with clients and promoting products online, producers used ICTs to find out about new models and trends related to their products and to learn new techniques online, using for instance YouTube videos to do so.

Annex 6

KEY LESSONS FROM EDUCATION SUB-PROGRAMME STUDIES AND RESEARCH

This annex includes some of the key lessons and highlights from different studies done within the Education sub-programme.

Joint Evaluation Trust in Ethiopia

As part of the work with the Joint Evaluation Trust (JET, described in more detail in chapter 1.6), an evaluation took place with partners in Ethiopia. Some key lessons from this extensive report:

- **Contribution to Millennium Development Goals:** JET evaluated the "Improving the Teaching-Learning Processes and Educational Management through ICT" project that was implemented by the Teacher Training College Ayssaita (Ethiopia). The evaluation focused on the primary beneficiaries of the project, namely primary school children. The evaluation compared children who were enrolled in pilot schools and who were taught by a trained teacher with children in the same schools who were taught by not yet trained teachers and with children in governmental schools (taught by not yet trained teachers). The programme faced several challenges that strongly influenced the implementation and especially the rigorousness of the evaluation, such as high teacher-turn overrate, high migration of students, security issues, and a relevant change in teaching which were outside the control of the teacher training college. Keeping methodological and reality challenges in mind, the current evaluation found evidence for an increased motivation to attend school but no further impacts among students yet.
- **Capacities of civil society organisations:** JET looked at capabilities of three organisations in Ethiopia: the Teacher Training College Ayssaita (TTCA), Oromia Self-Reliance Association (OSRA) and New Vision in Education (NVEA). In all cases, evaluators reported that since the baseline, two years ago, improvements took place in all of the capabilities. In the case of TTCA, key organisational capacity changes that stood out in the report were the improved knowledge in the application of active learning approaches and teaching skills, improvement in ICT utilization and improved skills in compiling and recording student grades. This was through MFS II funded trainings, supervision and the provision of ICT infrastructure and material. In the case of OSRA, the main improvements were seen in the capability to adapt and self-renew. OSRA was especially content with its development in application of M&E – the organisation received technical support from C4C in its M&E activities and skills in collecting and analysing information as a result of the ICT based interventions through the support of C4C have improved. Main improvements for NVEA were in the capability to act and commit.
- **Civil Society Impact:** JET evaluated the civil society end line findings for the Education for Development Foundation (EfDA) in Ethiopia. Most important changes that took place over the two years of the evaluation were the fact that communities became more committed to and aware of the importance of education, as a consequence of which they have started to build new classrooms with their own effort. Communities were also said to request the government to improve the school education system in other schools than those supported by EfDA, as well as to provide internet services for improved teaching learning. Finally, there was an improved awareness of the district administration that "educating girls is educating households", became the motto of many schools and communities. The evaluation also concluded that most changes reported in relation to the C4C project did not in the first place relate to changes in Civil Society. Where ICT was introduced it has helped to introduce further active learning methods, improve school management, and provide student access to computers.

Impact Studies of the C4C Education sub-programme: Zambia and Ghana

The first impact study on the C4C Education sub-programme (as described in chapter 1.6 on the learning agenda) describes the **Mpelembe basic schools partnership in Zambia**. The 'Mpelembe basic schools partnership' is an initiative supported by IICD and Edukans that uses the expertise and resources of Mpelembe school to build the capacity of 6 partner schools in Zambia's Copperbelt region to effectively use ICT. Participating schools received training, support,

computer labs and educational software. The impact study assessed the overall effect of the initiative in three main areas: (1) capacity of teachers to make use of ICT for effective teaching; (2) capacity of school managers and administrators to use ICT to improve their work; and (3) the use of ICT to improve students learning outcomes. The partnership has made significant progress and contributed to educational change in the participating schools. According to the evaluators, the inputs provided have begun to increase teacher capacity to make effective use of ICT and head teacher capacity to undertake effective school management. It was clear that the introduction of the technology has had a positive effect on student enthusiasm for participating in education. There were some anecdotal accounts of the partnership contributing to improved learning outcomes, something that is very likely to be seen in the year ahead in relation to the newly-examined subject of ICT. The evaluators concluded that, for the programme to have a significant impact on learning outcomes across all subjects, it would require a more concentrated input of resources both human and technical, and even so, it may still be limited because of the wider educational challenges in the region.

The second study focused on a partnership in Ghana, where IICD and Edukans supported 5 schools using the expertise and experience of local partner **Savana Signatures** to build the capacity of participating schools in the effective use of ICT. All schools in the programme received training, support, computer labs and educational software. The analysis of interviews with teachers and head teachers in the five schools supported by IICD and Edukans demonstrated that the ICT inputs and training provided by the programme have contributed to a positive impact on ICT use in school management, teacher confidence and capacity. There has also been an improvement in learning outcomes over the course of the programme but it was not yet possible to attribute this change to the inputs of the programme. IICD and Edukans have played a central role in supporting Savana Signatures. This was done by providing financial support, training, mentorship and technical expertise. Additionally, their support in the initial phase of the programme has led Savana Signatures to extend the programme up to 23 schools in the province with support from other donors. This model has built the capacity of Savana Signatures, and broadened their impact in the region. The increased confidence that teachers reported, not only in using ICT for their work as teachers, but also in their general self-confidence and motivation as teachers was cited as a key factor in improved teaching. In addition to this, teachers cited an increase in student engagement, partly represented by better attendance, but also by their perception of students paying more attention in class. Explicit links by teachers and head teachers between these two and the improved test scores in BECE exams confirmed their perception that ICT was contributing to improved learning outcomes.

Action learning report Peru

As explained in chapter 1.6, project partners in Peru initiated action research processes. A report with lessons from the action research on education was prepared in 2015. The report highlighted lessons per target group involved in the implementation of the different education projects in Peru. Some examples of these lessons were:

Lessons related to teachers:

- **Using digital repositories –** Teachers from different schools worked on contextualized educational materials and shared these online. This was seen as highly valuable, as this permitted teachers to save and share their developed materials and that, over time, these materials could be constantly improved and updated after feedback from others.
- **Developing educational video games –** Teachers in Peru developed their own educational video games for their students. This process helped them develop different pedagogical skills, as they needed to create the games in dialogue with pedagogical experts and had to put themselves in the shoes of the child in order to develop something of interest. Teachers involved in this development in turn shared their knowledge with other teachers in their team.

Lessons related to students:

- **Mother tongue –** Projects found that incorporating materials in the students' mother tongue and materials focused on local culture and knowledge helped in their learning. It made that students were more susceptible to the knowledge shared, and the quality of learning improved.
- **Personal development –** Projects found that ICTs contributed to the development of communication skills and personal development in students. Using educational games for instance, students developed their skills rapidly. That said, it did take time for teachers to discover the potential of these games.

Lessons related to parents and the wider community:

- **Linking parents to the school –** ICTs proved to have the capacity to make the work of students and teachers visible and thus increase appreciation of the work of teachers, school management and activities in the school. This resulted in parents and the wider community getting closer to the school.

Lessons related to educational institutes:

- **Formalization of processes –** Projects found the formalization of processes (such as the signing of contracts with each individual educational institute) and of internal processes quite important, especially because of the importance of these procedures to the education management. Formalising these processes also committed directors of educational institutes, defining goals and agreements, such as an agreement to limit the transfer of teachers from one school to another.
- **Different ICT tools –** Projects saw the importance of a variety of ICT tools and technical solutions, as not all tools easily adopted to connectivity conditions in the areas where the projects took place.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REA POP: 15'310
Quarterly target
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1'836
879
192
192
30
3'575
156
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Annex 7

KEY LESSONS FROM HEALTH SUB-PROGRAMME STUDIES AND RESEARCH

This annex includes some of the key lessons and highlights from different studies done within the Health sub-programme.

Joint Evaluation Trust in Uganda

As part of the work with the Joint Evaluation Trust (JET, described in chapter 1.6), an evaluation took place with partners in Uganda. Some key lessons from this extensive report were:

- **Contribution to Millennium Development Goals:** The evaluators looked at the projects implemented by C4C partners: Health Child (community project reproductive health care) and Jinja Diocese (performance based financing system). In the case of Health Child, evaluators found positive impact on 8 of the 12 measured health outcome indicators. 2 of the remaining 4 (maternal care awareness and child immunization) had already high levels to begin with. The evaluators stressed the importance of Health Child's approach related to the MDGs on maternal and child health: "while it is crucial to address health systems, it is also important to involve communities in efforts to improve maternal health through complementary strategies such as community mobilization and behaviour change interventions. One goal of these activities should be to ensure that appropriate health seeking behaviours become part of local social and cultural norms." For Jinja, the evaluators found positive and statistically very significant effect of Performance Based Financing (PBF) on greater cost-effectiveness of service provision (+30% at the most conservative estimate). This seemed to come at the cost of a 4% lower service quality, at least as perceived by the patients, but these quality differences disappeared in the follow-up study.
- **Capacities of civil society organisations:** The JET evaluation looked at capacities developed by C4C partner Health Child. Evaluators saw most improvements related to the effects of the capacity development efforts by Cordaid and IICD in the capability to act and commit. IICD and Cordaid contributed both to strengthening Health Child's organisational structure, development of strategic planning, and a strategic master budget; additionally a financial manual was developed with an accounting system. Training of programme staff in the use of financial information in planning implementation, monitoring & evaluation, and reserve fund policy was provided as well. Cordaid was mostly focused on Mother and Child Health programme design and execution; IICD's role in the development of the capability to act and commit, cannot be underestimated. The support was given pragmatically, i.e. in line with the issues coming up in the area of programme implementation.
- **Civil Society Impact:** The evaluators looked at the civil society impact of the project implemented by UCMB. According to them, UCMB has made major steps forward. It has been able to increase and intensify their national and international networks and has played a lead role on many occasions. The organisation has improved its communication towards the outside world by upgrading its website and by making use of social media. When it comes to the Perception of Impact evaluators say that UCMB has been able to respond to the needs, priorities and requirements of their network of Catholic health facilities, it has contributed to the service and data management improvements of the individual health facilities and it has played an important role in the lobbying and advocacy towards the Ministry of Health. Important factors in UMBCs success were their dedicated ICT project officers responding to the needs and requirements of individual health centres as well as the piloting of new ICT tools. Evaluators conclude that the UCMB project was very well designed (scored 9/10) and that it reached almost all of its objectives (9/10).

Effectiveness study examining the introduction of e-research for the health sector

In this study, Jigsaw consult looked into a project by SEND-Ghana. SEND-Ghana is a research and advocacy organisation that collects and distributes information through district, regional and national-level committees in Ghana. In 2011, SEND-Ghana introduced mobile tools to facilitate better data collection and distribution. The major component of the project was the 'PARTME' tool aimed to enhance district-level data collection; SMS and Voice technology tools were designed to facilitate dissemination of information back to research participants.

- SEND-Ghana demonstrated strong **relevance** in its research and advocacy priorities. It focussed on contributing to the achievement of MDG 4 and 5 - reducing maternal and child mortality rates. The project planned to achieve this through understanding health priorities at the district level and collecting data on local access to services and the barriers to good quality healthcare. The PARTME project has been an early example of the potential of informatics to bring together disparate data quickly, integrate it in a meaningful way, and use it as the basis for social action.
- The chosen technology was found to be an **effective** solution for improved data collection. The platform used an appropriate level of complexity and its features were a good match for project objectives: scalable, flexible, simple, open source and cost-effective. Moreover, District Citizens Monitoring Committee (DCMC) members reported high levels of confidence with 24% saying they felt confident using PARTME for data collection and 76% saying they felt very confident.
- The move to a technology based data collection system achieved **efficiency** by reducing ongoing costs for data entry, printing and distribution of surveys. Moreover, the model demonstrated the future opportunity for scaling up the number of submissions to each survey at almost no extra costs. The project efficiency would be improved by developing a strategy for the use of dissemination tools.
- The project was designed on the assumption that ICT makes data collection and analysis more effective, and leads to a greater **policy impact**. The impact of technology to improve advocacy is difficult to measure. The research team identified examples of the ways in which technology has increased credibility and improved the quality of research. More research into the impact has been recommended.
- The **sustainability** of the project has been achieved through a good training programme. DCMC members have been trained in use of the technology and SEND-Ghana staff have been mentored throughout the design and implementation phases of the project. SEND also have integrated the use of PART ME in all their funding proposals.

Impact assessment of C4C health interventions in ACDEP's ICT in Community Health Project (Ghana)

This research from the University of Utrecht focused on maternal and reproductive health in Ghana. The field report commenting on the baseline study was prepared in 2014. Though during this baseline it was too soon to speak of an actual impact assessment – especially considering the fact that the innovations have not everywhere been (fully) implemented as yet, researchers nonetheless recognize the undeniable potential of ICTs in health care. A few conclusions from their report:

- **Integrated approach –** An integrated approach is crucial if one aspires to maximize the impact of ICT interventions. Technology should thus be connected to other innovations in communication, information and mobility. A good example concerned the adolescent health clubs. For text messages to make a difference they needed to connect to existing activities, be part of thematic programmes (such as birth control, Sexually Transmitted Diseases, marriage etc.) and come with complementary educational materials (such as posters and flyers). A didactical strategy was needed to enhance learning.
- **Grassroots advocates –** One of the most interesting observations involved the potential of enthusiastic individuals. Whether among Traditional Medicine Practitioners, teachers involved in the organization of health clubs or system administrators, individuals, who were eager to contribute and could effectively address challenges, surfaced. These people detected obstacles, were able to connect and mobilize (much better than outsiders would be able to) and design custom made context appropriate solutions. Success of ICT4D will definitely depend on the ability to locate these individuals, to facilitate them and to let them and their ideas serve as examples.
- **Reactive –** Related to the previous point was the observation that, perhaps more than other interventions, ICT4D projects would benefit from a high level of flexibility or reactivity; the build-in capacity to adequately react to the unexpected opportunities and obstacles in the field. As we wrote elsewhere: for ICT4D to work, it should be insightful and interactional; designed as a progressive transformative process rather than a predetermined project, grounded in comprehensive understanding of places and people, alert to obscured challenges and opportunities, and willing to be shaped by as much as shaping local conditions.


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