



## Solar Cooking

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Photo:<http://solardevicesfortheworld.webs.com/Gorom-Gorom1spanel%2520cooker.jpg>

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# Editorial

## Front Burner

The sun is a balloon of gases burning steadily to supply energy to the solar system, that assemblage of celestial bodies around the sun. Viewed from this perspective, it is understandable that the sun should become known as the earth's most sustainable and cleanest source of energy and power. There is a thin, pristine envelop of faith wrapping this preceding sentence as it creates the impression that all scientific technologies and efforts to generate power from fossil fuels and similar sources have been a waste of human effort. But, at the least, humankind has learnt how not to exploit the environment.

In Africa, as dreams of domestic cooking gas become more elusive and the cost of fossil fuels escalate, a shift toward solar cooking systems is emerging. Families are being trained in many cities and towns in West Africa on construction and maintenance of solar cookers. Whole businesses are germinating on assembly of cookers and training users. Its impact is going to be huge. The browning environment is likely to have an opportunity to re-grow its greenness again, since hopefully fewer incidences of logging will be witnessed. Women who often walk long distances in search of firewood or kerosene can conserve the effort, and experience one less avenue for wear and tear that reduce their life spans. Their children may now eat on time, look healthier and stay in school. 'Solar' is on the front burner for governments. Or should be.

The World Bank is intervening in some areas, more directly though, giving funds to NGOs and firms propagating the use of solar cookers. But the cabinet-level MDAs of governments that should bother about the environment and women need to get involved. Large scale awareness programmes targeted at behavior change will be required. (More often than not, traditional gender roles have been carved with hewing of firewood as chores for one or the other member of households in rural and semi urban communities. These must become contents of legends.)

Tax breaks for businesses involved in this technology will be a boon to adoption and support. Investment and commercial banks might also consider providing finance at low cost to manufacturers of the solar cookers, perhaps as part of a complex corporate social responsibility regime, for which they can also get tax breaks. Governments of West African countries should be encouraged to consciously adopt such policies.

All these could lead more widespread adoption of solar energy for cooking, which will be a most illuminating tribute to the life-sustaining power of the sun!

--Odoh Diego Okenyodo

# Solar Cooker Technology Rekindles Hope

Events in communities of West Africa have shown that solar energy, other than providing alternative for electric power, is serving as basis for solar cookers, stoves and ovens. Ghana drew attention during the solar cooking year in 2002 when a project headed by Dr. Mercy Bannerman emerged as one of the top winners at the World Bank's Development Marketplace, an occasion that takes place yearly to display excellent innovations in less developed nations. Dr. Bannerman, won the award for her project entitled "Simple Solar for Health + Wealth". The \$100,000-award was meant for preparing additional people to multiply the technology in Ghana. The project has now gone away from home use to the formation of small scale ventures for making solar cookers and marketing them. Dr. Bannerman has been given monies for related reasons via Rotary International's programmes. Her award was a landmark for solar cooking supporters all over, with its appreciation of the prospects of the technology as a vital factor in development.

Frank Otchere, has successfully built and used a solar Cookit in Ghana. Expanding on what he has



done, over 60 solar cookers have been constructed by villagers, and are being marketed for about \$5 for one. Otchere and Bannerman had arranged to assist in supporting solar cooking in Ghana: Bannerman to focus in the Upper East, Upper West and Northern regions; whereas Otchere in the Eastern, Ashanti and Brong-Ahafo regions.

Efforts to improve on this invention by governments, individuals and nongovernmental organizations have been recorded enormously. Eleven women from the West Africa Network for Peace Building and the Women in Peace Building Network had a one-month training workshop in Ghana on making of solar stoves. The women were selected from

Margibi, Montserrado, Bong, Nimba and Lofa. In a similar development, many participants from several parts of Togo and Ghana were present at a conference organized by Jeunes Volontaires pour l'Environnement (JVE), displaying solar cooking and solar water pasteurization. Construction workshops were also available to conference participants. Beneficiaries of a JVE solar project gave evidence of how solar cooking has touched lives in the Vo region. Present at the conference were Togo's Deputy Director of the Ministry of Environment and the Minister of Youth, and representatives of the media.

In the northern region of Ghana, Grace Akawe supervises 90 solar cookers and the users in Tamale and the immediate societies; she goes there twice every week. Whereas in the upper west region, Jacinta Ziem supervises a entirety of 25 solar cookers and their users in the municipality of Wa and the surrounding areas, where she visits two Saturdays in a month. Both of them are famous in their vicinity and have grown a strong relationship among the users. As they do the supervision, they also teach the users of the solar cooker on the ways to maintain it and keep it fit to use at all times.

In Liberia, for instance, NGO Sustainability's project is introducing Small Scale Solar and this move intends to sustain community participation in training on the use and making of solar cookers, enhanced cook stoves, solar pumps, WAPIs and solar lanterns. It is expected that upon triumphant achievement of this, the project would be initiated in other areas of Liberia as a scheme that assists in the alleviation of an adjustment to climate change. In a related development, True Faith Missions (Pastor Hal Nichols) has introduced solar oven to communities in Liberia and it is making a mammoth accomplishment and so far nine families have built and are using them, and the people were very glad to learn that they can cook rice using the sun.

In Nigeria, Prof. Rose Achunine had met with students of the Department of Physics and Industrial Physics at Evan Enwerem University in Owerri, a south eastern city. The students have designed their own edition of parabolic solar cookers and solar box cookers. They desire to enhance effectiveness and homogenize their designs to make the solar cookers more proficient and trustworthy for use by local inhabitants, as well as metropolitan inhabitants. They will carry on their endeavor to offer training workshops for the rural inhabitants. In a similar vein, Margaret Koshoni presented a solar cooking seminar in Lagos. The seminar was organized by the Cosmopolitan Women's Club with over 400 participants from government agencies, non governmental organizations, women's groups, schools, and even a few banks, in attendance. As a result of the usefulness of the seminar, Lagos State Government's Commissioner for Women Affairs urged Koshoni to organize future workshops for the whole Lagos State Local Government Areas. On the same accomplishment, Renewable Energy Technology Company Ltd had a training program on solar cooking at New Bussa, Niger state. The company further collaborated with Girls Guide/Scout of America for the Girls Guide of Nigeria to replicate the workshop on solar cooking at the Women Centre in Abuja, the capital of Nigeria.

The Gambia is not left out of the solar cooker initiative. Lamin Sawo of the Health Education and Agricultural Development (AHEAD) discussed exploits in

AHEAD's large-scale solar cooking scheme in The Gambia, disclosing that 900 households now use solar cookers. AHEAD had carried out solar cooking trainings in five villages in Gambia and had workshops where it trained 12-15 women per village in the art of making and using solar cookers. These women that were trained in turn trained others. They have put up a trainers' cooperative called Tilo Tabiro. In a similar effort, Boka Loho Organization, has built and demonstrated solar cookers at agricultural shows and other events. They manufacture cookers, tutor users, and also work with schools in the encouragement and support of solar energy usage. In supporting this move, the Gambia Ministry of Trade and Industry has trained women's groups as users and carpenters in the making of box cookers for solar cooker making.

Mali has also bought into the initiative of solar cooker, as The Association of Handicapped Women of Mali (AMAFH) continues to put together solar cooker training for its members in Bamako, with assistance from the Association of Women Engineers (AFIMA) and monetary assistance from Dutch KoZon Foundation. At the moment AMAFH has taught 60 deaf and hard-of-hearing women, fifty women with leprosy and 20 mentally disabled women on means of utilizing Cookit solar cooker at two day training it orga-

nized for them.

The Togolese are also in the race to catch up with solar cooker revolution as Jeunes Volontaires pour l'Environnement (JVE) has taken its hot message to over 150 youths in the country. Over 100 participants from several cities in Togo, Cote d'Ivoire and Benin assembled for a workshop in Notse. On this three-day workshop, participants learnt fundamental solar cooking concepts and skills; they crafted their own solar CookKits. JVE had organized Operation Amis du Soleil, a five-day gathering in the Casablanca quarter of Lome and this brought jointly numerous numbers of persons, the majority of which were youth, to be trained on solar cooker use and to make solar cookers for JVE's solar water pasteurization project in Vo prefecture.

The prospects of solar cooker in West African urban poor communities are enormous; about 87% households use either kerosene or firewood in making their food in the region. In Nigeria, for instance, kerosene is no longer affordable generality of the populace as the price has skyrocketed in the face of subsidy removal and sharp practices by marketers who convert the commodity to aviation fuel. And those who use electric stoves are likely to opt for the solar cooker option too as power supply is epileptic and increasing in cost. Desperate search for firewood has been caused

serious deforestation, exposing the communities to the vagaries of climate change. Those trainees who eventually venture into the business of making solar cooker are likely to be in for a boom, as the liquefied natural gas alternative to kerosene, electric and wood stoves is yet to kindle.

Of course, immediate areas of intervention should include support for businesses and not-for-profits engaged in training, production and support for users of solar cookers in West Africa. Government agencies, especially MDAs responsible for health, environment, energy, technology, women and the like, must be made to understand the organic place of these devices through behavior change workshops and exercises. In its discussion on sustainable energy for all, the regional body ECOWAS must take local technological inventions in the region serious and must commit more money for research and development where initiatives like this can be improved upon and standardized. This will be most imperative for ECOWAS as it pushes for West African regional

integration as technology is a driving force for development.

### **Audu Liberty Oseni**

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# Smart-Hand Pumps: Possible Future of Potable Water

Access to clean potable water is still a challenge in today's West Africa. A foray into the rural areas of West Africa and even in urban centres exposes the fact that most of the populace lack access to healthy water. This situation has over the years made people prone to water borne diseases. The main water borne diseases that are a major public-health problem in West Africa are malaria, schistosomiasis (bilharzia), trypanosomiasis (sleeping sickness), onchocerciasis (river blindness), and dracontiasis (guinea worm)<sup>1</sup>.

The number of rural Africans lacking access to a safe water supply has increased by 38 million people between 1990 and 2010, according to the United Nations Joint Monitoring Programme. Of the 783 million people without safe water access, four out of five people live in rural areas. Governments across the region have tried to put in place measures that would address the problem, most though have not been effective. In West Africa several international organizations and local ones have all tried different ways to ensure sure that the people have water.



For instance in Nigeria since the implementation of the Millennium Development Goals (MDGs) projects started, the supply of water to both the rural and urban areas have formed a core of most of the projects. While this is the case, potable water availability is still a huge challenge. Most of the projects centre on the provision of water through hand pumps and boreholes which are yet to prove very effective in solving the problem. The monitoring and evaluation of MDGs projects in Nigeria by the Centre for Democracy and Development brings this to the fore. Poor construction, lack of feasibility studies, use of inferior materials all contribute to this.

There is a chance though that not only in Nigeria but right across West Africa, the situation may

change if governments decide to adopt new technologies in this area. Through the use of text messaging via mobile phones the Department for International Development (DFID) is implementing what it terms Smart-hand pumps. If the pilot is successful, there is potential for the technology to be rolled-out across rural areas of developing countries<sup>2</sup>.

The Smart Hand pumps project seeks to design, test and evaluate innovative applications of mobile communications technology to achieve water security and reduce poverty for those most in need and most difficult to reach<sup>3</sup>. The 'Smart Handpumps' project

sees the hand pumps automatically 'text' local water engineers when water pumps break down or run dry<sup>4</sup>. The hand pumps are installed with automated data transmitters that send instant messages to the local engineers whenever there is a breakdown of the pumps to disrupt water supply.

Already being implemented in Kenya there is huge potential for the nations of West Africa, the international and local organizations working in the area of water provision to tow the line in the adoption of this technology. In a region where the lack of reliable access to clean water is an enduring problem while mobile technology in Africa is booming:

the number of people within range of a mobile signal has already overtaken the number with an improved water supply,<sup>5</sup> there is a huge opportunity for a change if this technology is adopted in West Africa by both governments and other organizations working to provide water to the region's ever surging population.

Technologies of this nature are providing opportunities that may shape the future. As mobile telephone technology continues to expand beyond West Africa's urban centres into the rural areas there is need for governments within the region to tap into the potentials that exist due to its availability in trying to alleviate the existing situation of poverty and disease. The smart hand pump technology is one of those potential areas that may solve the ever prevalent situation of lack of

water in the rural and even urban centres of the region. Governments, international and local organizations should look at this technological innovation as a means of impacting the people, now and in the future.

**--Terfa Hemen**

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## Audio Conferencing Lures Youths into Farming

Most youths, particularly the educated ones, do not see farming as a reasonable thing to do and those who are farmers are being adjudged as poor persons with limited chances of being successful in the society. The recent happenings in Ghana is proving otherwise. Audio conferencing is aiding agric extension in northern Ghana, and is making youths in this village to embrace farming. Savannah Young Farmers Network, an NGO in Ghana, employs ICTs to convey

agricultural and village counseling action, and encourage active involvement of youth in farming. This is done through their Audio Conferencing for Extension project, which is taking place now in chosen villages at Builsa District of northern Ghana.

The Audio Conferencing Extension gives farmers easy access to agric extension information any time they are in need of it, and this helps in solving the farmers' challenges and boosts productivity and makes the living standards of these young farmers

better. The Audio Conference for Extension project employs the mechanism of audio conferencing technology to engage farmers in regular gatherings alongside with agricultural officers from Savannah Young Farmers Network, together with a broad diversity of agricultural extension specialists, agronomists, ICT specialists and researchers from various foundations. Savannah Young Farmers Network at the moment implements its program with 25 farmer based organizations, with

over 200 farmers in its scope. Every farmer group will have an audio conference for like two times in a week, with the preference decision to put call for an urgent situation meeting, when there is requirement to hold such a meeting.

This initiative seeks to find solution to constraints farmers encounter with agricultural extension, in places where services are uneven. Numerous youthful farmers believe that agric extension given out, that the approaches are not modified to their exact expectation where they will see the importance of accepting agriculture as career and serious endeavor.

Skilled Community agricultural information take pictures with their digital Cameras and video coverage of documentaries describing the constraints these farmers are encountering, and whichever way out available. In other alternatives, Community Agricultural Information employs rural agricultural information and research (AIR) centres with internet access to upload

films to YouTube, for Savannah Young Farmers Network staff and other project researchers to view. In the case of non availability of internet, the videos are saved in CD-ROMs and Savannah Young Farmers Network officers collect them on their subsequent appointments.

The Community Agricultural Information officers are working with the farmers to smooth the progress and to guarantee that farmers can articulate their worries and claims, and vigorously partake in putting together extension counseling. They employ the use of a cell phone with an audio conferencing purpose, attached to a loud-speaker making everybody in the group listen to the feedback from the counselors. All the farmers involved will make their inputs by talking bringing their mouth close to the cell phone.

The Community Agricultural Information writes down the minutes of every audio conference for reflection subsequently, and to be certain that the farmers comprehends the reactions from Savannah Young Farmers Network and the additional partakers. Every Community agricultural information person owns a laptop computer, thus they will be able to write their reports

and connect to the internet, and be in touch directly with Savannah Young Farmers Network central office through the help of Facebook call and Skype call.

Going by the recorded success of this Audio Conferencing for Extension, and additional initiatives by means of cell phones, dedicated software and additional means of Information Communication Technology, it is certain to all of us that technology is indispensable to the boosting of agriculture especially among the young people found in rural communities in west Africa.

Agriculture no doubt is likely to be means of living and survival for many youth in few years to come as governments in West African states do not appear to have the capacity to provide formal jobs for the highly populated youth. Youth can only embrace farming if the necessary incentives are there to entice them into farming. Interesting technological initiative of this nature will no doubt make youth in the region to engage in farming, thus West African states must fund and invest in this kind of initiative particularly as it gives job to the unemployed youth that constitutes a social problem to the region as at today.

**---Audu Liberty Oseni**

**Source:**

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# Confronting the Challenges of Small Arms and Light Weapons



The spate and intensity of violent conflicts in West Africa have been linked to the proliferation and weak control mechanisms on small arms and light weapons. While \$18 billion is being spent on conflicts in Africa, 60 to 90 percent of deaths associated with conflicts in West Africa are linked to the illegal sale and proliferation of small arms and light weapons. West Africa accounts for about 8 million out of the 100 million small arms currently in circulation in Africa (Ahmad, 2012).

Decades of violence and instability in Sierra Leone, Liberia as well as the activities of insurgent groups in

Mali, Guinea Bissau and Cote d'Ivoire were major drivers of proliferation, illicit circulation of SALWs and other forms of organized crimes. The latter ranges from oil bunkering, armed robbery, money laundering, arms manufacturing, forgery, cigarette smuggling, diamond smuggling, human trafficking, as well as advanced fee and internet fraud in the region<sup>1</sup>. Over the years this has reinforced the sceptre of insecurity, which in turn compromises the prospects for growth and development. A consequence of this is the fact that people are often the worst victims due to conflicts that continue to exacerbate organized crime, poverty and underdevelopment, which in turn has led to a high sense of insecurity among the rural and

urban poor in the region.

Large caches of combat weapons transferred from Libya after the fall of Muammar Gaddafi are suspected to have fallen into the hands of terrorist groups. This prompted the adoption of Resolution 2017, which drew attention to the risk of destabilization posed by the dissemination of illicit SALWs. After the over-throw of the Gaddafi regime, a Sahel assessment report revealed influx of about 420,000 returnees to Niger, Mali, Chad and Mauritania as well as the inflow of unquantified and unspecified number of ammunitions from Libya<sup>2</sup>. Countries that make up the Sahel within the West

Africa region include Burkina Faso, Mali, Mauritania, Niger, Nigeria and Senegal.

The insecurity associated with the activities of Boko Haram is evident in the spate of bomb attacks and killing of thousands of Nigerians, with serial attacks on police stations and armouries where stockpiles of weapons are acquired by the dreaded Islamic sect in Borno and Kano States. This is a major consequence of the privatization of violence to the extent that non-state actors are challenging the authority of the state in the acquisition and control of the instruments of coercion. In the long run, the region is poised to confront the challenges posed by the increased privatization of violence by informal groups such that the state will be forced to bargain with competing forces and authorities in order to maintain its hold.

The spate of attacks and hijack by pirates is largely due to their ability to access SALWs. In fact, according to a Security Council report of the United Nations, piracy in the economies of the region has resulted in an annual loss of revenue of \$2 billion, while the numbers of ships docking at Cotonou, Benin Republic, have declined by 70% as a result of serial attacks (United Nations, 2012). On the whole, transnational organized crimes associated with oil bunkering, trafficking in cocaine and counterfeit

medicines holds sway<sup>3</sup>. The activities of armed pirates in the Gulf of Guinea have placed the region on the front burner, which sees the region overtaking Somalia as the world's piracy hotspot<sup>4</sup>.

Within the last 14 years, attempts have been made to manage the menace posed by the proliferation of SALWs in terms of putting in place control mechanisms. This include The Moratorium on the Importation, Exportation and Manufacture of Light Weapons in ECOWAS Member States, signed in October 1998; the ECOWAS Convention on Small Arms and Light Weapons, Their Ammunition and Other Related Materials, signed in 2006; as well as the West African Action Network on Small Arms (WAANSA), which was adopted at the WAANSA General Assembly in January, 2007<sup>5</sup>. The ECOWAS Conference of Heads of State and Government also provided a basis for the establishment of National Commissions on Small Arms by Member States.

Across the region too, there have been several initiatives by civil society and think tanks, which seek to leverage on what member states of ECOWAS have put in place in containing arms proliferation. Some of these include the International Action on Small Arms (IANSAs), West African Network on Small Arms (WAANSA), African Security Sector Network (ASSN), African Strategic and Peace Research Group (AFSTRAG) and Réseau Journaliste Afrique de l'Ouest. While such institutions and initiatives are not out of place in the light of the reality posed by the illicit circulation and use of

SALWs by unauthorized persons and groups in the region, the issue of coordination, functionality and capacity of these mechanisms have been raised, as it relates to the extent to which Member States match words with actions (Agnékethom, 2008).

While the role of gunsmiths has been recognized as a major outlet in the manufacture and distribution of SALWs across the region, there has been little attempts at engaging them in dialogue with the aim of monitoring and regulating their activities. In fact, the mechanisms that have been put in place at the regional and national levels have done little or nothing in this light. In the case of Ghana, for instance, such attempts have been made by the police in terms of engaging gunsmiths, which is seen as an important strategy in addressing arms proliferation. Replicating such in other countries within the region should be seen as a critical stepping-stone in the implementation of action plans.

Addressing the challenges posed by SALWs in the region in the long run, would also require the harmonization and standardisation of legislations, policies and mechanisms across the region. In doing this, there is a sense in which the contradictions and tensions that exist between national, regional, continental and the global strategies would be straightened. Hence, defini-

tions about the kind and categories of SALWs, as well as the procedure for their acquisition and sale would be the same across the region.

In concert with other multilateral institutions, Member States of ECOWAS should demonstrate strong commitment towards strengthening import and export control policies, mechanisms and practices with their borders and beyond. In this sense, such collaboration should be hinged on ensuring adherence to all the relevant initiatives on SALWs in the region.

In conclusion confronting the region's security vulnerabilities associated with SALWs in the future should also recognize the prevailing threats posed by piracy, terrorism, drug trafficking and other forms of organized crimes in view of the inter-link that exists between them. Placing more emphasis on addressing the human security challenges at the national and regional level is a major pointer towards containing the inherent contradictions posed by the prevailing socio-economic and political discontents in society that was described as being weaponised.

As we look forward to the future, addressing the challenges posed by the proliferation of SALWs in the region requires a comprehensive national and regional policy

that is proactive, as well as capable of balancing the long term interest of reducing the impact of SALWs proliferation on the urban and rural poor.

**--Chris Kwaja**

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## “How ICT's Changing the Lot of Kumo Rural Farmers”

*Dr Cyril Terseer Nyulaku is an ICT for development expert who is the Executive Director and Senior Fellow of the Professional Learning Institute (PLI-CEPDEL), Kaduna, Nigeria. He is in the forefront of Project Zamantakewa and speaks about the project with Odoh Diego Okenyodo. Excerpts:*



### **What is Project Zamantakewa all about?**

Project Zamantakewa is designed as a platform for the integration and continuous sustenance of the National Communication Commission's USPF projects and by extension government information access infrastructures. These projects include the Accelerated Mobile Phone Expansion (AMPE), Rural Broadband Initiative (RUBI), Community Communication Centres (CCC), Backbone Transmission Infrastructure (BTS), School Access Program (SAP), and the Tertiary Institution Access Program (TIAP).

### **How have the people in the communities you work adopted the Community Communication Centres (CCC) for their development?**

Working in cooperation with local traditional authorities, local governments, and a private firm Cybernauts.com, Project

Zamantakewa has used the CCC in Kumo community of Gombe state as a single pilot. We've enabled e-veterinary health information, e-agric extension information, and telemedicine, and worked with the youth self help group 'Alamartambaya' who are the human resource drivers of CCCs operations. The project operates within the paradigm that community development can be triggered by integrating CCCs infrastructure into the daily lives of members of the beneficiary communities. If I must pass a verdict at this early stage, the results show great potentials of success. Among Zamantakewa's guiding principles, we have tried to increase the voices of women, youth, and the poor, give first priority to community-driven approaches around ICT and instil a culture of accountability. These have been our keys to the appreciable success so far attained.

### **What are the potentials for expansion of this idea?**

The NCC-USPF selects unserved and underserved communities around Nigeria into knowledge hubs for community adoption and integration of ICT in their daily activities for development. Since CCCs are spread through all the 109 senatorial zones, and 36 states and Abuja, this intervention promises to reach the nook and crannies of Nigeria over time.

### **From your experience so far, how have farmers utilised the opportunities that**

### **Zamantakewa presents?**

Almost by default, young persons have used this an opportunity to access the internet for communication, and online examination registration, among others. Some rural farmers in Kumo are doing well with guidance on how to mitigate the effects of desertification, and/or effective health care of their livestock.

### **You said in interview that the project needs strategic partnerships with universities and training institutions, how is this coming?**

Wonderfully well! The Veterinary eHealth Information Service is in collaboration with Ahmadu Bello University Veterinary Teaching Hospital and the National Animal Production Research Institute, both in Zaria. We are delivering Telemedicine services in collaboration with the Nigeria Telemedicine Society and the eAgricXtention Information Services in collaboration with NEARLS Zaria. Discussions are being completed with several other national and international organisations and universities for collaboration on the sustainability of the CCCs.