



## **Creative Capacity Building in Uganda**

Qualitative research into the impact of CCB on individuals and communities across Uganda  
By: Toby Childs

## Summary:

For the month of June 2017 I worked as a Monitoring & Evaluation Fellow for MIT D-Lab. My assignment was to travel and explore the qualitative impacts of D-Lab's Creative Capacity Building (CCB) training in Uganda. I began by undergoing a CCB Training of Trainers myself, helping me gain a first hand perspective of what each community member had experienced and providing the foundation from which I could formulate my questions and understand potential points of impact. It followed with a journey to 11 villages across Uganda.

My community visits and conversations aimed to provide qualitative support of the impacts shown in a Randomized Control Trial started in 2013. This case study is a collection of stories uncovered during my deep dive into selected communities that underwent CCB in Uganda. The cases in this study were chosen because they demonstrate variety of impacts CCB has on communities. In particular these cases illustrate a progression of impacts, from personal income generation, to adaptation to external shocks, to advancement of community development goals.

## Background

### CCB

Creative Capacity Building (CCB) is a curriculum that was developed at MIT D-Lab and has been implemented in over ten countries. The CCB methodology promotes design *by* the intended beneficiaries and users, seeking to empower them to be active creators of technology rather than passive recipients. In addition to building design and prototyping skills, the training aims to instill in the participants a sense of agency and belief their ability to improve their situation.

The curriculum consists of practical hands-on skills-building activities, teaching woodworking and metal working through the creation of a maize sheller and a charcoal press. These two technologies not only provide the opportunity to teach these skills, but they also are valuable tools that can be used by each of the participants in their daily lives after the training. CCB then goes on to teach about the design cycle approach to creating new technology. The program calls for the participants to identify a challenge or need that exists in their community and prototype a potential solution. Through collaboration and group work, the participants ideally leave CCB with a working prototype, the tools to continue to develop the

### The Randomized Control Trial

In 2013 D-Lab partnered with Kulika Uganda to run a nation-wide randomized control trial (RCT) to discover the impacts of the CCB curriculum on smallholder subsistence farmers in Uganda. In each of the nine districts, covering all regions of Uganda, six villages were chosen to participate in the RCT.

- Two of the villages received a full dose of CCB – both a skills builder and design cycle training
- Two of the villages received a half dose of CCB – solely a technology demonstration
- Two of the villages were the control group – receiving no CCB training

The RCT measured CCB's economic effects at the household level. The study concluded that the CCB training reduced overall labor by over 50%, and had some effects on household division of labor, through tools designed to alleviate labor performed by women. CCB also led to an increase in crop income.

### Kulika

Kulika is a nonprofit organization based in Kampala Uganda, working with communities most in need across the country. Specifically working with smallholder subsistence farmers and students, Kulika is working to enhance livelihoods through educational and financial investment into the agricultural sector of Uganda.

**Purpose:**

The RCT focused on quantifying the economic impacts of the CCB training on the participants and their families. However, continued engagement from the Kulika and D-Lab staff revealed that several qualitative impacts of CCB were not accounted for by the RCT. Observation and interaction suggests that new outcomes continue to emerge within the communities due to the knowledge and skills gained from the CCB curriculum. My research was dedicated to exploring these emerging impacts of CCB on the communities and individuals. Through this research I aimed to uncover information that was not captured in the RCT as well as gather stories behind the economic impacts that were discovered by the RCT.

**Methodology**

For the month of June 2017 I traveled through Uganda making site visits to ten of the communities studies that received a full dose of CCB training during the RCT. The case studies that follow are based on qualitative interviews with individuals and groups throughout ten villages across the four regions of Uganda. The information gathered was collected through written notes during the interviews, transcriptions of interviews, and observations. Photographs and video were used to further document the impact and personal stories related to the CCB training.

As an independent evaluator for D-Lab, I came into this work with an objective and almost skeptical view of the impact. As a foreigner “Muzungu” gathering qualitative data from a community that was provided services and funding from the organization I was representing, there was a high potential of receiving biased responses. Working with my translators, I was careful to cross check facts and answers between community members and be wary of the potential over emphasis of impact.

**Driving Question:**

The research focused on answering the following question:

**“What types of outcomes arise from CCB? How do these outcomes evolve overtime?”**

My research focused on the positive outcomes of CCB in communities across Uganda. This was decided to illustrate the CCB’s potential to advance individual and community development, rather than the average outcome. The cases below illustrate the range of outcomes that future CCBs can aim to have.

Through my research I uncovered outcomes in three main categories.

1. **Designing for Income:** Building new businesses
2. **Designing for Resilience:** Adapting to shocks
3. **Designing for Development:** Advancing community goals

## DESIGNING FOR INCOME

After the CCB training Kulika provided a revolving fund of between \$350 and \$400 to each group. Kulika encouraged the groups to use this startup capital to build a business out of one of the technologies developed at the CCB. After about three months Kulika realized that there was a need for business skills training to accompany this funding and encouragement. The RCT showed the economic impacts of these second businesses, and it was my goal to illustrate the individual and group stories that exist behind some of these changes.

The businesses that have been developed from the CCB technologies can be organized into three different categories:

Selling a consumable product | Selling a technology | Selling a service

**Selling a consumable product:** Kulika encouraged this, so it was the most common of the three forms of second business that were created. Following are two examples of women who have used the skills gained from the CCB training to make and sell consumable products, helping to enhance their and their families' income. While there are many examples of second business being built through selling a consumable product, these two examples were chosen to show not only the impact of the business on an individual's income, but also to show the intersection of the impact across gendered lines.



**Nankoma Brenda** is a 20 year old tailoring student at Katende Vocational School and a member of the Katende Youth Development Group in Katende, Uganda. Prior to the CCB training she had no source of income and was fully dependent on her parents. After learning how to make charcoal briquettes from the charcoal press, Brenda taught her parents and together they are earning 10,000 UGSH each a week from briquette sales. Her family has become known in their town for their charcoal business. Brenda now dreams of building her own workshop to continue to expand her charcoal briquette business as well as explore other ventures such as carpentry and tailoring.



**Gabeya Erusa** is a 27 years old tailoring teacher at Katende Vocational School. Producing and selling charcoal has enabled Gabeya to be financially independent from her husband. Sharing her new skills in charcoal making to help empower other women in her community, Gabeya has taught five women how to make charcoal. They now work together to make charcoal outside of Gabeya's home. Not only does this provide work and new skills to these women, but also community and a socially engaging space. Gaining this financial independence has provided Gabeya Erusa the confidence needed to approach future challenges and turn them into business opportunities.

**“I want my community to be more like me, confident in the ability to create businesses”  
Gabeya Erusa, Treasurer of Katende Youth Development Group**

**TAKEAWAY:** CCB offers economic value by both transferring existing technologies based in the curriculum, providing each member with a maize sheller and a charcoal press, and encouraging the design of new technologies.

**Selling a technology** is a noteworthy outcome of the CCB curriculum, which originally aimed to help individuals save time and money in their own work. This type of business is a step beyond selling a specific consumable product such as charcoal briquettes because groups are seeing the pieces of technology (not the output from the technology) as a potential profitable business. Kulika encouraged creating a second business through the revolving fund and the push to start a business. Groups have begun to build small businesses around selling the technology developed during the CCB training.

### **Katende – Mpigi** Selling a CCB technology

The Katende Youth Development Group is a collection of six members who are all either employed by or enrolled in the Katende Vocational School in Mpigi district. The Katende Youth Development Group chose to invest their time and resources into one technology, the potato slicer. Among the other potential products this technology was chosen because it can be made quickly, making it a more feasible avenue for income. The group continues to use customer feedback to improve their product. They have now gone through four different iterations of their potato slicer. Continually innovating and tweaking their design, the group is determined to create a product to be available for a larger market.



Joseph Kafeero is the sales manager for the potato slicer. He has taught himself marketing strategies such as going door to door and demonstrating the technology to potential customers. He is now contemplating how to use the Internet as a way to increase the group's sales.

**TAKEAWAY:** Teaching participants to collect and implement customer feedback enables them to change and adapt their products to the needs of their consumers. This leads to more innovation and in turn more income.

**Selling a service:** In some cases, as when the technology is too expensive to be purchased outright, there was greater potential for income generation by renting a product rather than selling it.

## Nyanga - Isingiro

Located in Isingiro district in Western Uganda, Nyanga is a small village with a population of roughly 500 people. Nyanga Tukwatanise (Nyanga Work Together) started as a women's group to help support each other in times of need. Three years ago the group began admitting men, and now has 24 active members.

After completing the CCB training, Nyanga Tukwatanise continued to develop their prototype of the groundnut sheller prototype. With the support of Kulika's revolving fund, the group built four different iterations of the sheller. Three months after the CCB training, Kulika noticed there was a need to provide business skills to the groups, helping them continue to develop the revenue pulled from their technologies. Kulika connected Nyanga Tukwatanise to a government social worker to help them brainstorm business strategies to further make their income from this technology.

The Nyanga community was hit hard a drought in 2016-2017. Although there was still a need for groundnut shelling, few could afford to purchase the machine. Discussions between the group and the government social worker brought about the idea to build a large groundnut sheller to be rented to the community. To date this approach has earned the group 30,000 UGSH.

This business model not only provided income to the group, but it also worked as a marketing device. Having witnessed the effectiveness of this technology in lowering labor and time spent shelling groundnut, community members began reaching out to Nyanga Tukwatanise with orders for individual groundnut shellers to have in their own homes.

When the famine hit the market for the groundnut sheller dried up, yet there was still a market for the groundnut shelling service. This is what brought about the idea to make a large groundnut sheller to be rented. Rather than giving up at the loss of the product market, the group explored other potential opportunities to continue to build revenue from their technologies. The famine caused by the drought plays a huge role in the potential technologies the group will make, and they have adapted to these market limitations.

### TAKEAWAY:

Renting a technology does not only generate income from fewer resources, but it also acts as a marketing tool to showcase the quality of the product. This could lead to potential sales of individual products in the future.

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“CCB helped build a vision of seeing far.”

Ninsiima Eduia  
Group Chairperson



## DESIGNING FOR RESILIENCE

In addition to producing new technologies, CCB provides a framework for community members approach problems that arise within their lives. During the CCB training, participants go through the process of problem identification, practicing how to recognize needs and frame them as opportunities for innovation. Moving beyond the technology they produced at the training, CCB technology they produced at the training, participants use their skills to approach new community issues in innovative, and in some cases lucrative, ways. As social, political, or climate changes occur, CCB provides the tools for them to be resilient and adapt to these changes.

### Acetgwen – Soroti

#### Adapting production to a changing climate

In late 2015 Uganda experienced a severe drought that lasted until April 2016. The entire country was affected, with widespread water scarcity and food shortages. During this time food was extremely expensive, and many agricultural markets dried up due to lack of resources, and low crop yields. A specific crop affected by this drought was the potato, with yields dropping to extreme lows. As the potato market began to dry up so did the market demand for potato slicers, as the Asianut Women's Group would soon learn.

Located in Acetgwen, a village in Soroti District, the Asianut Women's Group (Generosity Women's Group) was founded in 2010 to help women work together to better develop their lives. The 14 women that make up the Asianut Women's Group all completed the CCB training. During the CCB, the women designed and developed a potato slicer, and since had invested time and money from the revolving fund into the development of this product. They had worked through multiple iterations based on consumer feedback leading to the creation of a product they believed ready for market.

With the onset of the drought the potato crops took a huge hit, dissolving the market for a potato slicer. Prior to the training, this group held the mentality that failure was failure, and further investment into a failed project was a waste of time and money. The CCB training provided the problem-solving framework needed to adapt to this change in market.

Faced with this setback, the group began to discuss the future of their technology production. They began brainstorming alternative products they could to prototype that would be marketable during poor harvest seasons. Out of the brainstorming session came the group decision to design a solution for a different challenge: poultry farming. Using their metal working skills from the CCB training the group has built a prototype of a poultry cage that is now being taken to the market for customer feedback.

#### TAKEAWAY:

CCB can strengthen adaptability and resilience. Faced with changes in market, this community used the design process to adjust their product to the changing context.



## DESIGN FOR DEVELOPMENT

While the previous cases explain how communities are using their skills to build or expand businesses, CCB trained groups are also using their skills in ways that go beyond economic motivations. This research found that multiple groups are using these skills to solve different community problems: a variable that was not captured in the RCT. The following cases are examples of how communities are using their skills address economic justice, vulnerable groups, and long-term visions of development, addressing challenges on the societal level.

### Design for Justice Apetete – Pallisa

Apetete is a village of 1,800 people in Pallisa district. The main form of employment is agriculture, mainly maize, millet, groundnuts, and sweet potatoes. Five years ago the Apetete Community Group was formed to help share knowledge among farmers to help enhance the lives of all of the group members and the community at large. They then grew to have a group farm, raising chicken and pigs, sharing the profits amongst the group members.

Produce is typically sold by weight. In order to properly weigh their crops, farmers in Apetete travel to weighing centers outside of town, incurring the cost of transportation and rent of the scale. Because weighing produce in this way is both costly and inconvenient, many sellers in the market will simply estimate the amount of produce they are selling to consumers. The lack of knowledge of actual weight of product leads to the potential for sellers to be cheated out of a fair price for their produce.

During the CCB training the Apetete Community Group had originally made potato slicers and groundnut pluckers for sale. Once these two products were successfully generating income for

the group, they began to brainstorm ideas for the next project they would work on. Tackling the challenge of weighing produce for market, the group decided to prototype a small scale that could be used in the community or sold to individuals. The group made two different types of scales, a hanging scale and a balance. The hanging scale is for larger quantities, while the balance is for selling smaller quantities (less than one kilo). The group is now making scales for each group member as well as beginning to make them for sale to the community.

Having addressed an economic challenge with their first prototypes, the group moved onto addressing a social challenge around equity. Having understood the value and built confidence in making products and technologies for sale to the community, the Apetete Community Group built a completely new product created outside of the CCB training. Recognizing the community issue of access to a scale to ensure fair and equal quantities for prices, the group used their CCB knowledge of both metalwork and prototyping to develop a solution that is an affordable and effective solution to a community need.

#### TAKEAWAY:

CCB provides the opportunity for communities to innovate and develop technologies that solve wider societal challenges.

“CCB enabled me to get the money I want.”  
-Osako Igantius, Chairperson





## Design for Community Development

Many community development groups have long standing visions of the future of their communities. For instance, farming based communities may focus on new crops or value chain enhancements that can lead to economic development. There are many barriers that obstruct the communities from reaching their visions. This research found that the skills gained during the CCB trainings are being used to help these communities take steps towards their vision of development.

### Kibwera – Isingiro Designing for Community Goals

Uganda is the second largest coffee exporter in Africa. As a valuable cash crop, coffee has the potential to help bring wealth to communities. However, several barriers prevent a community from fully being able to capitalize on the coffee industry. One major barrier is the lack of post-harvest technologies – specifically husking the coffee.

Kibwera is a village of 700 people, located in Isingiro, Western Uganda. The Kibwera Community Group came together in 2010 under the belief that “Two heads are better than one.” The group was formed to be able to loan money to group members, and it is now a fully registered organization.

The coffee industry, when properly structured, can be a very lucrative business. Kibwera would like to use the coffee industry as a way to develop their community. Currently coffee farmers in Kibwera bring their dried coffee to Mbarara to be husked. Mbarara is roughly a one-hour drive from Kibwera. The transportation costs and the cost of renting the Mbarara coffee husker pulls from a coffee farmer’s profits. Transporting a sack of coffee costs 2,000 UGSH per sack. Each car

carrying on average 10 sacks, a trip to Mbarara would cost the coffee farmer 20,000 UGSH. Farmers choose to sell dried coffee with the husk still on, however this will reap 1/8<sup>th</sup> the profits compared to dried coffee that has been husked. One kilo of dried coffee with husk is 1,000 UGSH, whereas one kilo of dried coffee without the husk is 8,000 UGSH. By investing in creating a coffee husker located in Kibwera, the community could increase the local coffee farmer’s profits by eight times their current profits.

**“We now join our heads together to solve our problems.”**  
Karugaba Denis, Group Treasurer

Based on the desire to invest in the post-harvest needs for the coffee industry, the Kibwera Community Group chose to pursue a coffee husker as their project during the CCB training. Since the training they have used the revolving fund provided by Kulika to continue to iterate and improve the coffee husker based on feedback from the first prototype. The goal is to create a well-working machine that will be of use to their group members, available for rent to the community, and be a model from which they can construct other coffee huskers for sale.

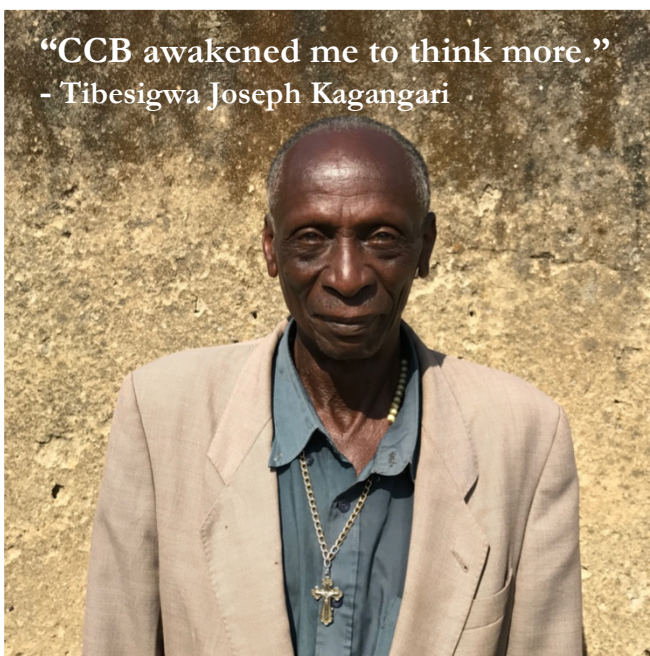


### Kempungu – Rukungiri Designing for Vulnerable Groups

Located in Rukungiri District in Eastern Uganda, the Kempungu Community Group brings together nine individuals looking to help develop their lives and their community. What started as a savings group where members can take out loans to be repaid with interest, CCB has brought a wealth of skills that has transformed this group into an income generating business that sell charcoal, and build products to meet specific community needs.

Kempungu has an aging population. As the community continues to grow older new needs arise based on the changing demographic of that community. After the CCB training the Kempungu Community Group was focused on continuing their prototype for a coffee husker. However, using the Kulika revolving fund, they also purchased materials to build benches and other furniture for sale. Word spread through the community that this group is now able to create different household objects out of wood and metal. The Kempungu Community Group was then commissioned to build a toilet for an elderly member of the community.

The majority of toilets in Kempungu are simple cement slabs with a hole in the ground requiring the user to squat. This is a very difficult activity for the elderly. Having been commissioned to construct a toilet seat, and with a working prototype of the seat sold to their customer, the Kempungu Community Group has decided to construct a toilet seat for every member of their group. They also have plans to make toilet seats for sale to the aging population in their community. Gaining recognition of this local problem, the Kempungu Community Group is now using their CCB skills to construct a marketable and income generating solution tailored to this specific user group.



“CCB awakened me to think more.”  
- Tibesigwa Joseph Kagangari

#### TAKEAWAY:

CCB provides the skills to be able to create relevant technologies according to the changing demographics of communities.

## CONCLUSION

As I uncovered case studies around the three subjects driving my research, “designing for income,” “designing for resilience,” and “designing for development,” a progression emerged in how community groups use the skills provided by the CCB training. These cases can be read as a path-like narrative, showing the evolution of the way communities put to use the CCB training.

Coming out of the CCB training, all of the groups held the same level of basic skills on how to create particular products (at a minimum, charcoal briquettes and maize shellers). With these new skills as well as the encouragement by Kulika to create a second business, it is clear that creating a second business would be the first step in using this training outside of their own personal use. These businesses also reflected a progression, from selling the products taught during the CCB to selling and renting technologies they designed themselves.

The Acetgwen case shows how a group may react when an external factor impacts the group’s second business, impacting sales, market, or product. When confronted with an environmental impact like the drought, communities that are engaged in the CCB training are then put to the test to adapt their product or how to find a new market. This adaptability and resilience to external factors comes from the CCB approach of going around the design cycle: constantly identifying new challenges, generating new ideas, gathering feedback, and improving.

We then see a third level of depth in how groups use the CCB training: design for development. While the previous two examples are focused on income generation for individuals, this third level looks at the long-term advancement of the community. By addressing overarching needs of the community, the design for development examples show how the CCB training can be strategically used to solve issues of injustice, equity, vulnerability, and long-term development.

While the RCT explains the economic impact of CCB training on individuals, these stories help to illustrate the evolution of the use of the CCB skills as communities continue to develop. This evolution through three states shares with us that CCB impacts communities in secondary and tertiary ways – leading towards higher level development at the community level.

## RECOMMENDATION FOR FUTURE CCB PROGRAMMING

Moving forward it is strongly suggested that D-Lab and their partners uncover ways to further enhance the impact that CCB can have on participating communities.

I will conclude with making three suggestions.

The first suggestion is to provide business training alongside the CCB training. While the current training teaches the skills of technology development and design, there is currently a missed opportunity by not also providing proper business training in marketing, sales, and accounting. These skills will help groups to capitalize on their skills and technologies and build them into strong small-businesses.

The second suggestion is to provide opportunities for different CCB groups to engage with each other, share ideas, and share their technologies. Several of the groups were working on technologies as solutions to the same issue (groundnut sheller, coffee husker, cassava cutter, etc.). By creating venues for these groups to interact with each other, their design process would benefit from the cross-pollination of ideas and feedback.

The third suggestion is to create space for long-term thinking and discussion around community development opportunities with the CCB groups. This will provide the opportunity for communities to think beyond the specific technology and learn about potential issues to help enhance the livelihood of their entire community. Including this bigger-picture conversation about development will potentially open the minds of the individuals within the CCB trained groups to understand the large potential CCB can provide for them and their communities.

The above suggestions will help to further enhance the potential for CCB to have impact on the multiple levels discussed in the conclusion. This will also provide the space for D-Lab to test the degrees of impact that CCB can have at the community level and for their partners to uncover new ways in which CCB can impact the livelihood to communities.

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Lastly I would like to thank all of the community members whom I interviewed for their willingness to share their personal stories, inviting me into their homes, and providing me with insight into their lives and the changes made due to CCB training.