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Evaluating the Partnership between Zambian Non-Governmental Organisations and American Research Universities: A Comparative Case Study of the CARE-Cornell University and other NGO-University Partnerships.

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Abstract

Research universities are increasingly forming partnerships with health-related nongovernmental organisations (NGOs) to produce relevant and evidence-based interventions that will tackle various global health issues. In conjunction with common goals, the combination of the research skills of universities with the intervention implementation expertise of NGOs holds the potential to create successful interventions and have a positive influence on policies and communities. However, sustaining the collaboration is not effortless, and there are frequently complications with communication, funding, and expectations. The manner in which the partnership addresses these challenges often determines the success or failure of the partnership.

Many partnerships between research universities and NGOs exist in Zambia. For the purpose of this research, two partnerships were examined, with additional input from stakeholders in other partnerships. The first partnership was between CARE International and Cornell University, the second between Zambia Center for Applied Health Research and Development (ZCAHRD) and Boston University (BU). Research was conducted via review of relevant literature and semi-structured interviews with researchers, administrators and staff of CARE, Cornell, ZCAHRD and BU. Results of the research indicate that major difficulties of NGO-university partnerships include communication, funding and expectations. Partnerships benefit from the capacity building within the NGOs, while allowing universities to engage students and faculty in relevant international research endeavours. ZCAHRD-BU faced fewer challenges than CARE-Cornell, primarily due to the infancy of the latter partnership. Through previous research and interviews, we observe that a successful NGO-university partnerships seeks funding that emphasises collaboration, innovation and research, while maintaining open-lines of communication, and involving committed and flexible employees who focus primarily on the research.

Acronyms

AIDS	Acquired Immune Deficiency Syndrome
BU	Boston University
CARE	Cooperative for Assistance and Relief Everywhere
CENTIR University	Community Engaged Nutrition Intervention Research at Cornell
CGHD	Boston University's Center for Global Health and Development
COHRED	Council for Health Research in Development
EE	Environmental Enteropathy
EID	Early Infant Diagnosis
HIV	Human Immunodeficiency Virus
IFPRI	International Food Policy Research Institute
IIF	Impact through Innovation Fund
МАСЕРА	Malaria Control and Elimination Partnership in Africa
МОН	Ministry of Health
N@C	Nutrition at the Center

NGO	Non-governmental Organisation
PI	principal investigator
РМТСТ	Prevention Mother to Child Transmission
SAIPAR	Southern African Institute for Policy and Research
WASH	Water, sanitation and hygiene
WB	World Bank
WHO	World Health Organisation
ZamCAT	Zambia Chlorhexidine Application Trial
ZCAHRD	Zambia Center for Applied Health Research and Development

Introduction

Health-related NGOs are often action-oriented and time-constrained, while research universities are knowledge-seeking and work towards disseminating their findings. Through shared goals and long-term relationship, both parties can bring experts together to create relevant and evidence-based interventions that have the potential to affect policies and communities. Therefore, research institutions collaborate with NGOs on research and programme implementation to make changes in health policy. NGO-university partnerships have the potential to bridge the gap between research and implementation, but comes with the challenges of communication, clashing expectations, cultural differences and time commitments, which must be addressed for effective and sustained collaboration.

Two examples of this type of partnership in Zambia are those between Cornell-CARE and ZCAHRD-BU. As ZCAHRD-BU is a more experienced and senior partnership of the two, there are various points that CARE and Cornell can learn from. Furthermore, there are areas in which both partnerships can improve, to better the efficacy and efficiency of the research procedures and implementation. It is important to analyse and evaluate the partnerships through previous research done on this type of partnership as well as opinions of the stakeholders, to provide recommendations on ways to enhance the collaboration.

First, we will cover background information and previous research on NGO-university partnerships and explain the CARE-Cornell and ZCAHRD-BU partnerships. Subsequently, we will provide the method used to analyse and evaluate this type of partnerships and the two case studies. We then follow the opinions of stakeholders, mainly from Cornell University, CARE Zambia, BU, and ZCAHRD, on their NGO-university partnership. The paper concludes with an evaluation of a successful partnership, and how this type of partnership can be improved for not only Cornell-CARE and ZCAHRD-BU, but also other similar collaborations.

Background

NGO-University Partnerships

Recently, interest in partnerships between non-governmental organisations (NGOs) and research universities has been rekindled, especially in the fields of global health and international development. Global health research investigates health issues that affect the global population. However, this field has experienced inequitable distribution of knowledge, research efforts and funds to the population that suffers the most from health issues (Delisle et al., 2005). Some mention the 10/90 Gap, in which 'less than 10% of global spending health research is devoted to diseases or conditions that account for 90% of the global disease burden' (Global Forum for Health Research, 2000). For example, according to the World Health Organisation (WHO) World Health Report in 2000-2001, there is an imbalance in 'the population served and disease burden addressed' (Delisle et al., 2005). Although diseases such as pneumonia, tuberculosis, malaria and diarrheal disease account to more than 20% of the disease burden globally, less than 1% of the total public and private funds are allocated to research in these fields (Global Forum for Health Research, 2000).

According to the Commission on Health Research for Development in 1990, there are several obstacles for research in making a change for the most vulnerable people: (1) lack of funding for health research for those in developing countries; (2) inefficient way of applying the resources; (3) dearth of attention paid to major health problems; (4) lack of capacity building in individual and institutional health; (5) inefficiency in technology transfer; and (6) competition among research initiatives (Commission on Health Research and Development, 1990). Therefore, it is important to strengthen health research by resolving these issues. The first step to a potential solution was the establishment of the Council for Health Research in Development (COHRED) in 1993, who partnered with the WHO, World Bank (WB) and other organisations who worked on health-related issues at the local level. The Global Forum for Health Research was formed in 1998 to help resolve the 10/90 Gap through a collaboration among multilateral agencies, NGOs, women's associations, research institutions, government policymakers and the private sector

(Delisle et al., 2005). Due to the intricate and complex inequalities experienced in health systems, it is important to have an 'intersectoral approach' (Delisle et al., 2005), in which experts from various fields come together to solve issues; this includes funding agencies, local communities, leaders of public health outside of the government and so on.

One of the methods to bridge the gap between research and implementation is the creation of partnerships between NGOs and research universities/institutions (Aniekwe et al., 2012). Both parties provide their unique skills and strengths to a collaboration that stems from a 'shared interest, motivation and common goals' (Aniekwe et al., 2012). A research institution brings their strengths in research methods, publishing and theory-building. On the other hand, an NGO has an advantage in terms of in-country connections, presence in the field and implementation of interventions and projects. In most situations when NGOs are involved in global health research, the knowledge production stems from a research partner, which is often a university (Delisle et al., 2005).

A difficulty that this type of partnership has experienced is the conflict in methods to achieve a common goal. For research universities, the predictions, methodologies and findings are crucial, even if this requires the research to be extended. However, research and projects led by NGOs are limited by time and it is of utmost importance for the findings to be acted upon through implementation and presentation to donors. (Roper, 2002).

According to Sullivan and Skelcher (2002), there are three perspectives on collaboration: optimist, pessimist and realist. In the optimist perspective, stakeholders see one another as 'altruistic people' who are more concerned with the long-term rather than the short-term. They attempt to solve common problems through sustainable collaboration and goals. Therefore, both organisations would take part in the design to the outcome of the research. From the pessimist perspective, collaboration occurs in order to enhance the stakeholder themselves' power, resources and credibility. The realist perspective is the grey area in between the two other perspectives, in which collaboration is influenced by altruistic motivations as well as resource and power demands. The partnership will mould through

experience and adaptation, as the collaboration changes depending on each organisation's donors, government, stakeholders and so on.

Furthermore, according to Roper (2002), there are different models of and approaches to collaboration. The expert-consultant model is a unidirectional relationship, in which an academic expert analyses an issue to provide recommendations to the organisation. In the expert-trainer model, the academic expert teaches the organisation skills when dealing with problems. There is the joint-learning model, in which research is done to develop skills through critical thinking. This type of partnership often starts with a common goal or problem. However, it expands to a long-term relationship for capacity building and further research. In the 'best practice' model, the researcher records and shares the organisation's experience and practises to improve the field of international development. Lastly, there is the theory-development model, in which research is conducted to develop the theories and make advancements in the academic field.

CARE-Cornell Partnership (2014-present)

Cooperative for Assistance and Relief Everywhere (CARE) is a global humanitarian organisation with offices in over 84 countries that strives to solve global issues of poverty, including water, sanitation and hygiene (WASH), HIV/AIDS, education and maternal health. Cornell University is a renowned research institution in Ithaca, New York, with some of their strengths including international nutrition and global health. Together, they have decided to collaborate on research in the field and its implementation, to improve the state of poverty and solve global issues to do with environmental sustainability, food and nutrition security and health. Projects within the collaboration include biofertilizers in Ethiopia, an analysis of incentives provided to healthcare workers who work to prevent mother to child transmission of HIV in Mozambique, the use of pyrolytic cook stoves in Vietnam, the balance of both economic and environmental sustainability in Sierra Leone, egg-layer facilities to protect poultry production in Zambia and a study on the how to protect young children from human and animal faeces to prevent environmental enteropathy and stunting in rural Zambia (Lang, 2012). CARE Zambia now focuses on projects regarding gender equality, HIV/AIDS and malnutrition. There is a new CARE programme called Nutrition at the Center (N@C) that generates and implements approaches to improve the nutrition of women and children in resource-deficient areas. This programme works with CARE country offices in Bangladesh, Benin, Ethiopia and Zambia (CARE-Nutrition at the Center).

In Zambia, the most recent research conducted takes place in the N@C office in Chipata, Eastern Province and is titled – "One Health for Babies & Livestock: Piloting baby WASH interventions to reduce infant faecal exposure in rural Zambia." The goal of the research is to identify strategies to reduce exposure of infants and young children to faeces. The consumption of soil and faeces is associated with EE, and chronic intestinal damage that may contribute to stunting. In the two field sites of Chadiza and Lundazi, Cornell and CARE have carried out baseline research on families' WASH practices through questionnaires and observations by CARE staff. Cornell has been primarily responsible for research design, data entry, and analysis. As a result of the knowledge gained through the baseline, the interventions to reducing EE under investigation are the implementation of plastic and community-built playpens to prevent infants from ingesting faecal matter and an education model for the mothers. A similar division of labour has been used for the data on the result of the intervention (CARE and Cornell University, 2015).

A feature of this partnership is the central funding provided by the Atkinson Center -Impact through Innovation Fund (IIF). Through this fund, Cornell researchers work collaboratively with CARE personnel towards the development of cutting-edge research and the implementation of this research in the communities of vulnerable populations around the world (Atkinson Center for a Sustainable Future).

ZCAHRD-BU Partnership

Another example of the NGO-university partnership is that between Boston University's Center for Global Health and Development (CGHD) and Zambia Center for Applied Health Research and Development (ZCAHRD). The global health department focuses on 'highquality applied research [and] advocate[s] the use of this research to improve the health of underserved populations around the world'¹. ZCAHRD is a locally-registered, Zambian NGO that was started by and has strong affiliations with BU to conduct health-related research to impact public-health policies and programmes in Zambia. BU has been conducting research in Zambia since 1998, but it wasn't until 2006 that they condensed their research efforts into an NGO, later called ZCAHRD². This organisation works closely with the Government of Zambia, especially on the prevention of mother to child transmission (PMTCT) of HIV/AIDS and early infant diagnosis (EID) of HIV³.

One of the most recent studies done in Zambia through this partnership was the Zambia Chlorhexidine Application Trial (ZamCAT). Researchers investigated effective and culturally-acceptable interventions to decrease neonatal infections and mortality from a contamination of the umbilical stump. Nearly 40,000 pregnant Zambian women took part in this cluster-randomised, controlled trial, in which half of the newborns received an antiseptic and the other half went through dry cord care (the standard) (Hamer et al., 2015).

¹ http://www.BU.edu/cghd/about-us/

² Interview with Dr. Donald Thea from Boston University, 17 July 2015

³ http://www.BU.edu/cghd/about-us/country-programs/zambia-country-program/).

Methodology

Our initial involvement in the CARE-Cornell partnership began in February 2015 as undergraduate research assistants for the EE pilot study. This work included data entry and analysis of information sent from CARE's Nutrition at the Center (N@C) office in Chipata, Zambia to Cornell University in Ithaca, New York. A review of literature on EE was done at that time to supplement the quantitative research. In March 2015, we conducted a further a review of similar research on stunting and EE as well as the roles of CARE International and N@C. We also furthered our understanding of the partnership when Modesta Chileshe (Principle Investigator in Zambia) and Catherine Pongolani (from CARE International in Zambia) visited Cornell University for a face-to-face meeting with the One Health research group, the Atkinson Center and CARE USA.

Upon arrival to Lusaka in May 2015, Professor Stoltzfus, the principal investigator of the EE pilot study at Cornell University, suggested that our unique position working first hand with CARE Zambia and Cornell University would allow us to investigate the intricacies of the partnership. The Southern African Institute of Policy Analysis and Research (SAIPAR) has also indicated their concern and interest in the translation of research into action.

The primary research method was performed as a case study of the CARE-Cornell partnership relating to the EE pilot study. First, a review of relevant literature regarding NGO-University partnerships was conducted. This literature also included internal analysis of the CARE-Cornell partnership provided to us by researchers at Cornell University. Next, we found partnerships with similar structures between NGOs based in Lusaka and research universities in the United States. Collaboration with SAIPAR and CARE International enabled us to connect with relevant stakeholders in these partnerships. Twelve semistructured interviews were conducted. Interviewees involved with the CARE-Cornell partnership included researchers and administrators from Cornell University, the Atkinson Center, CARE USA, and CARE Zambia. Interviews were also conducted with researchers from BU regarding their partnership with ZCAHRD. Additional interviewed stakeholders include researchers from Concern-International Food Policy Research Institute (IFPRI) partnership and Malaria Control and Elimination Partnership in Africa (MACEPA)-Tulane University partnership. The interviews inquired about the successes and challenges within the partnership, improvements that could be implemented, and difficulties with communication and funding. The interviews were conducted in person, via Skype, and via email in June and July 2015 in Lusaka, Zambia.

Results

Throughout our interview process, six themes arose as major contributing factors to a successful NGO-research university partnership. The themes were structure, communication, funding, expectations, time commitment/timelines, capacity building, and improving access. The opinions of various stakeholders in these partnership on the six major themes are discussed in the following sections. Also outlined are the perceived benefits of the partnership for the parties involved, according to the parties themselves.

Structure

Most aspects of the partnership, including communication, responsibilities and time commitment, depend on the structure of the relationship. The study on EE in the Eastern Province is under N@C, a programme is led by CARE USA in Atlanta. According to Professor Stoltzfus, PI of the EE pilot study, this relationship was 'a complexity that we at Cornell did not fully anticipate', as the relationship became a three-way partnership between Cornell University, CARE Zambia and CARE USA, instead of simply between Cornell and CARE Zambia or CARE USA. Therefore, conversations of funding and reports and updates on the research had to involve CARE USA and CARE Zambia, rather than a simpler two-way partnership.

In regards to the structure of the study itself, there were two PIs, one based in Zambia and the other based at Cornell. Data collection was completed in Zambia with locally hired staff and managed by the Zambia-based PI. The data entry and analysis was done by Cornell University. Additionally, the paper writing and publication were done at Cornell University by university staff.

In contrast, ZCAHRD was established by CGHD in 2006. Due to this strong affiliation and partnership, both BU faculty and ZCAHRD staff are involved in the process of generating ideas and writing grants. Currently, ZCAHRD is in the midst of transforming their legal

status from a non-profit organisation to a 'company limited by guarantee'⁴. This process involves transitioning to a largely Zambian staff, to emphasise the fact that ZCAHRD is a local NGO. Currently the majority of the staff is Zambian, meaning that the transition will call for little change in staff⁵. This will allow for more grant opportunities from a variety of organisations, such as UNICEF, the Gates Foundation, USAID and the EU, a current struggle that ZCAHRD experiences because of close ties with BU.

The PI for all ZCAHRD research projects is a Boston University faculty member, though he or she may be based in either Boston or Zambia. Both parties are involved in each step of the research process, from design to publication, with the exception of data analysis, which is done exclusively by statisticians based in Boston⁶.

Communication

When conducting international research between countries, maintaining consistent communication is a challenge that must be dealt with tactfully and efficiently. Technological innovations help to bridge this gap, though inconsistent access in rural areas is often a complicating factor. Due to the complexity of the CARE-Cornell partnership, there were four major pairs for which communication was necessary. These include, communication within CARE Zambia, between CARE Zambia and Cornell, between Cornell and CARE USA, and between CARE Zambia and CARE USA. Within CARE Zambia, research was conducted in Lusaka as well as Chipata, the provincial capital of the Eastern Province. The two cities are nearly 600 kilometres apart, meaning that face-to-face communication is limited. The majority of the communication within Zambia was conducted via phone calls and emails, with some visits between Lusaka and Chipata.

Similarly, communication between Zambia and the US was achieved through phone calls and emails. Cornell researchers visited the project sites in the Eastern Province at the start

 ⁴ Interview with Dr. Donald Thea, 17 July 2015
 ⁵ Interview with Dr. Godfrey Biemba of ZCAHRD, July 21st 2015

⁶ Interview with Dr. Godfrey Biemba, July 21st 2015

of the project in October 2014 and later we were sent to Lusaka to continue working on the research in June and July 2015. Two researchers from the CARE Zambia office travelled to Cornell University in Ithaca, New York in March 2015. Both CARE and Cornell researchers voiced that the face to face meetings for beneficial for keeping tensions low and enhancing communication. The meetings helped foster the relationship by increasing familiarity and allowing for open communication without technological barriers.

Communication between CARE USA and Cornell was fairly consistent with weekly phone calls and frequent emails. Representatives from the two parties met in DC for a conference.

Communication between CARE Zambia and CARE USA was lacking in some areas. Brie Reid, Research Project Manager in the Community Engaged Nutrition Intervention Research (CENTIR) Group, voiced that she facilitated much of the communication between the two parties. Reid expressed that her role as the middleman between the two organisations was unexpected, as she anticipated that the organisations would have a strong relationship. Modesta Chileshe, PI in Zambia, travelled to Atlanta, Georgia to attend the CARE USA planning meeting. According to Chileshe, the experience contributed to the capacity building gained throughout the research process⁷.

On the other hand, ZCAHRD's research projects are larger scale than CARE's EE study, and thus they have more staff located at the project sites. This allows for simpler communication within Zambia. ZCAHRD establishes an office near the project site where most of the data collectors and researchers are based. Project directors are usually located both in Lusaka and at the project site⁸.

Between ZCAHRD and BU, each research project has a specific weekly appointment for Skype calls. The skype calls include relevant members of the research team based in the US, Lusaka and the project site. Telephone calls were also frequent, though not as scheduled as the Skype calls. Site visits by BU researchers seemed to be more frequent than those on

⁷ Interview with Modesta Chileshe of CARE Zambia Nutrition at the Center, 15 July 2015

⁸ Interview with Dr. Donald Thea, 17 July 2015

behalf of Cornell. This may be in part due to the large number of BU researchers involved in the projects. Dr. Katherine Semrau, PI for ZCAHRD's ZamCAT study, expressed that face to face communication is crucial for managing expectations, as much can be misinterpreted if done over email.

Funding

Funding seemed to be a consistent difficulty faced when engaging in these research projects. In all partnerships examined, the university partner was largely responsible for obtaining and allocation of funding. The major funding challenges faced were the initial arrival of money and sufficient funds for transportation and unexpected costs. The partnerships examined had varying sources of funding.

Cornell's funding came from the Atkinson Center - Impact through Innovation Fund (IIF). Cornell faculty are not paid by project funding, rather by the university itself. Cornell graduate and post-doctoral students, however, may be paid by the funding allocated to the project, but Cornell students and faculty have a rather high degree of autonomy in allocating their effort amongst projects. CARE staff salary is also paid for by the grants. CARE staff are paid depending on the percent of their time that is planned to be allocated towards the project (Rawe, 2015). This ranges from 5% of an individual's salary, to 100%⁹. For individuals paid by the project's grants, strict timelines must be followed, as the funding will only cover their work if it is within the predetermined budget and timeline. This decreases flexibility for the members of the project team located in country (Rawe, 2015).

Timelines and budgets were determined by the Cornell University research team and CARE USA. A hurdle faced when determining budgeting was the incorrect assumption that CARE USA was in constant communication with CARE Zambia about budgeting needs. After the issue was resolved and budgets were set, the funding did not come in on time, causing the project to be delayed. Gaps and insufficient funds were seen in the areas of transportation

⁹ Interview with Brie Reid from Cornell University, 1 July 2015

and office supplies (i.e. printers, scanners). Catherine Pongolani, Project Manager in CARE Zambia, expressed that Cornell was flexible and helpful when funding problems arose. Pongolani, however, also expressed that perhaps CARE Zambia should have been more involved in the allocation of funds, as they know more about the community. Professor Rebecca Stoltzfus, PI for the EE pilot study, expressed that managing funding would have been trickier had money flowed directly from Cornell to CARE Zambia.

ZCAHRD and BU have a different model for their funding. Most of their funding comes from international global health organisations. For example, the ZamCAT of 2015 received funding from the Bill and Melinda Gates Foundation. Some sources of funding for their other research projects include the Center for Disease Control and Prevention (CDC), United States Agency for International Development (USAID), United Nations International Children's Emergency Fund (UNICEF)¹⁰.

The ZCAHRD staff is a combination of BU faculty members and Zambian employees hired exclusively by ZCAHRD. The BU faculty members are paid by the university while the nonfaculty members are paid by ZCAHRD. The non-faculty staff receive portions of their salary from research grants, and other portions are underwritten by the BU School of Public Health. These individuals include directors of major departments within ZCAHRD and short term staff employed for single research projects¹¹.

Dr. Davidson Hamer, PI of ZamCAT, expressed that ZCAHRD's close affiliation with BU periodically leads to complications with funding. Some funders want to help local organisations and thus are less willing to give to ZCAHRD because some of the staff members are BU faculty. Recently, the partnership has tried to loosen their ties to account for this problem and reshape ZCAHRD's image as an independent NGO. The transition will include creating a majority Zambian board, and Zambians as senior officers, making it a Zambian organisation with some BU membership and representation¹². This will allow for

 ¹⁰ Interview with Dr. Davidson Hamer from Boston University, 24 June 2015
 ¹¹ Interview with Dr. Donald Thea, 17 July 2015

¹² Interview with Dr. Donald Thea, 17 July 2015

ZCAHRD to take advantage of both types of grants, those towards local NGOs and those towards affiliated NGOs.

Expectations

A common issue that arose throughout our interviews was the difference in values and approaches for obtaining a common goal. NGOs are driven primarily by implementation and concrete results that can be shown to potential donors. Research universities, on the other hand, prefer to focus on the smaller details of research, and often have more flexible timelines.

Specific to the CARE-Cornell partnership, both organisations have the common mission of improving the health and wellbeing of women and children in their communities in low resource settings¹³. Research-oriented Cornell is interested in learning about the truth, even if the truth is that the intervention is not working. CARE and N@C, on the other hand, are dependent on donor support, which is a stressful environment. CARE is under pressure to show donors quick results from the interventions and concrete research findings¹⁴. Donor funding has a short lifetime, which is difficult to manage with Cornell's attention to detail and thorough research methods. CARE is a time-bound programme, and if research is not completed within the timeline, salaries will suffer. For Cornell, on the other hand, funding will come with research, even if the research continues past the timeline¹⁵. Though the broadest goals are the same, the inherent differences in structure of the two organisations cause expectations to be difficult to manage.

In addition to the challenges caused by unaligned long term expectations, short term misunderstandings of the roles of each organisation is also problematic. At the start of the project, CARE USA and Cornell both expected that the other party would have a bigger role in the devising of research methods and tools to be used in country. Another point of

¹³ Interview with Brie Reid, 1 July 2015
¹⁴ Interview with Brie Reid, 1 July 2015
¹⁵ Interview with Jenny Orgle from CARE USA, 8 July 2015

misunderstanding was of the exact product of the research. CARE USA assumed that the study would determine a relationship between EE and stunting, while Cornell was focused on the faecal oral route that is a likely contributor to EE.

Dr. Katherine Semrau, principal investigator for ZCAHRD's ZamCAT study, expressed that similar challenges were faced in their research. Semrau stated that it is important to make clear roles and manage expectations at the start. The roles refer to designing and running the study. It is also important to ensure that the donor rules align with Zambia's needs and wants in order to please all parties involved. Dr. Donald Thea, director of CGHD, board member of ZCAHRD, and PI in Zambia based research study, expressed that the difference of goals of NGOs and research universities is a fundamental problem in the sector. Thea stated that ZCAHRD has terminated contracts with other NGOs after requests on behalf of the NGO to decrease investigations into efforts that seem to be failing. Research institutions focus more on finding the truth, even if they prove their efforts to be ineffective, while NGOs are driven by proving successful interventions.

The gaps in agenda between academia and NGOs is a commonly experienced challenge in these partnerships. Djeinam Toure, a post-doctoral student at Cornell University who was involved in research for International Food Policy Research Institute (IFPRI) partnered with Concern Worldwide in Zambia, expressed that similar challenges were faced during her work doing research directly with Concern. Toure stated that IFPRI was more focused on knowledge generation and publication while Concern prefers to focus on the intervention itself.

Professor Rebecca Stoltzfus, PI of the EE pilot study, who is experienced in the sector of international health research stated,

Researchers are always looking for the interesting questions. Practitioners need to make choices and decisions on what to implement. Also, researchers are trained to be tentative in our views and conclusions. We can always find a way to say that more research is needed—every question is not answered. Practitioners need to be

confident about their actions to communicate them convincingly to donors and to community members. So that is a constant tension in our cultures.

The tensions between NGOs and universities in these respects are nearly unavoidable as they are inherent in the missions and cultures of each party. Therefore, efforts should be made to manage these tensions, as oppose to eliminate them, by means of communication and mutual respect.

Time Commitment and Timeline

Another major component of a successful partnership is the dedication and time commitments of the players involved. It is common that the NGO members and university researchers are involved in simultaneous engagements as both NGOs and universities often have many concurrent projects. When working with strict timelines and salaries paid by percent, time commitments vary immensely, sometimes at the expense of the project.

Brie Reid, Project Manager of the EE pilot study, was the major correspondent representing Cornell University in the project efforts, contributing 50-80% of her time towards the project. Reid did the majority of Cornell's communication with both CARE Zambia and CARE USA, and contributed to the project structure and data analysis. Stoltzfus, PI for the study, stated that Reid's time investment contributed greatly to the success of the partnership. On the CARE Zambia side of the partnership, Modesta Chileshe, PI for the EE pilot study based in Chipata, directed 100% of her time towards the project. Reid stated that Modesta's role was an incredible asset towards the success of the partnership. Chileshe, however, expressed that as part of her role in the EE study, she was also a member of N@C. There were instances when N@C held activities with mandatory attendance of all N@C staff. This resulted in the rescheduling of activities for EE, delaying the research. The monitoring and evaluating coordinator of the EE study, Paul Chipopo also contributes the majority of his time towards the project. Concern was expressed from the Chipata office that Cornell's undergraduate student's involvement was too removed from the study itself due to the students' base in Lusaka.

Staff of ZCAHRD often work on more than one research project at a time, with predetermined percentages of their times dedicated towards each project. Dr. Godfrey Biemba, country director of ZCAHRD, stated that it is likely that the individuals based in Zambia dedicate more time to the projects than those based in the US. However, he did not express that the difference in time commitment between Zambian and US based individuals hindered productivity of the projects¹⁶.

The collaboration allowed Boston University to send students pursuing Masters of Public Health degrees to Zambia to work on these projects. The students were able to reside at the project site in order to dedicate as much time as possible to the trials. In addition to the BU students based in Zambia, there are also Boston University PIs who are sometimes based in Zambia. This allows for more time dedicated to the project and less to other university responsibilities. These PIs usually make 3-4 yearly visits, of about 1-2 weeks each throughout the duration of the research¹⁷.

Capacity-building

One of the biggest advantages of a partnership with two different organisations is the opportunity for capacity building for both parties. Collaborating with different people and projects can lead to new or deeper understandings as well as development of skills. In our interviews, both CARE and Cornell emphasised the importance of capacity building for both sides of the partnership.

For CARE, staff members involved in the research, such as Modesta Chileshe (the incountry PI), Paul Chipopo (the M&E coordinator) and data collectors, have been exposed to new information regarding environmental enteropathy and new methodologies¹⁸. Furthermore, Chileshe and Catherine Pongolani (Project Manager in CARE Zambia) had the

 ¹⁶ Interview with Dr. Godfrey Biemba, 21 July 2015
 ¹⁷ Interview with Dr. Godfrey Biemba, 21 July 2015

¹⁸ Interview with Catherine Pongolani of CARE Zambia, 19 June 2015

opportunity to visit Cornell University and CARE-USA to meet with various people involved in the project as well as attend planning meetings, in which Chileshe felt that she "personally benefited in the capacity building [of] knowledge"¹⁹. According to Brie Reid, the PI for the One Health study in the US, CARE USA and Zambia were not focused on WASH, but rather looking into partnerships with WASH organisations. Through the CARE-Cornell partnership, CARE was challenged to revisit WASH through their education models²⁰. Moreover, Cornell has worked with CARE and other N@C sites to better understand the context of WASH in other countries and propose interventions that they can implement at a lower cost²¹. Through this capacity building, they are able to learn of recommendations and evidence based interventions²².

On the other hand, for Cornell, capacity building was particularly beneficial for the students involved in the research partnership. Five Cornell undergraduates are directly involved in the data entry, analysis and publication of the research. Through this arrangement, students are able to increase their technical and research capacity. Additionally, in October of 2015, Cynthia Matare, one of the doctoral students in Dr. Rebecca Stoltzfus's research group will be doing her post-doctoral work through Cornell's partnership with both CARE and SAIPAR²³. Furthermore, according to Dr. Wendy Wolford of Cornell and the Atkinson Center, there have been further collaborations due to this partnership, including 'consulting work [and] classroom studies'.

There have been similar opportunities for capacity building for students at BU, as well. The School of Public Health used to have a programme that sent 45-50 MPH candidates to ZCAHRD's field sites, where the students would work on data collection and analysis and fostering relationships with the local community^{24, 25}. Through this opportunity, some students stayed in Zambia, moved on to other jobs, or completed their PhD work based in

¹⁹ Interview with Modesta Chileshe, 15 July 2015

²⁰ Interview with Brie Reid, 1 July 2015

²¹ Interview with Brie Reid, 1 July 2015

²² Interview with Paul Chipopo of CARE Zambia, 26 June 2015

²³ Interview with Professor Rebecca Stoltzfus from Cornell University, 17 July 2015

²⁴ Interview with Dr. Donald Thea, 17 July 2015

²⁵ Interview with Dr. Davidson Hamer, 24 June 2015

Zambia. Dr. Biemba, country director of ZCAHRD expressed that there have been successful capacity building in all stages of the research process with the exception of the data analysis stage because the data analysis was performed exclusively by BU statisticians. ZCAHRD has also involved members of the Ministry of Health (MOH) as co-investigators in nearly all of their projects to increase MOH research capacities.

Improved Access

Through the partnership between NGOs and research universities, both sides have better access to each other's resources. Both Cornell and BU have mentioned how CARE and ZCAHRD respectively have access to state-of-the-art research and laboratories^{26, 27}. This way, their interventions will be based on research and evidence, and therefore will benefit the communities²⁸. The increased knowledge and evidence-based intervention provides them with a more competitive edge when interacting with donors²⁹.

The local partner provides Cornell and BU with access to opportunities and information in the field. According to Stoltzfus, Cornell has been testing ideas about safe and hygienic play spaces for babies in Zimbabwe, but has been constrained due to tight timelines and lack of personnel. This new collaboration has allowed Cornell to expand their learning and findings in the field as well as possibly connect their collaborators in Zambia and Zimbabwe³⁰.

Dr. Thea, the director of CGHD, has mentioned that it is challenging to find a stable field site and develop a reputation within the country. However, through the local partnership, he has found that they have been able to establish long-term connections with the government, as well as other organisations³¹. Now, they can find practical evidence for

²⁶ Interview with Dr. Wendy Wolford of Cornell University and the Atkinson Center for a Sustainable Future, 17 July 2015

²⁷ Interview with Dr. Donald Thea, 17 July 2015

²⁸ Interview with Paul Chipopo, 26 June 2015

²⁹ Interview with Brie Reid, 1 July 2015

³⁰ Interview with Dr. Rebecca Stoltzfus, 17 July 2015

³¹ Interview with Dr. Donald Thea, 17 July 2015

local and global policies that can influence health policies in Zambia as well as other countries³². Dr. Semrau, co-PI of the ZamCAT study, has also mentioned that working with a local NGO has allowed for improved priority setting and reality checks. Unless one has connections in-country, it is difficult to know what is possible and appropriate, taking into consideration difficulties such as technology, privacy and cultural differences.

In addition to improved access to resources, both partnerships have pointed out that they have been able to make spontaneous connections with other people and organisations incountry. ZCAHRD has discussed how they have been able to foster a closer connection with the Government of Zambia³³. Furthermore, Cornell University has been able to bring together CARE and SAIPAR through Cornell's Global Health Summer Program. Stoltzfus has described this as 'knitting a web of relationships that are mutually reinforcing'.

³² Interview with Dr. Davidson Hamer, 24 June 2015

³³ Interview with. Dr. Davidson Hamer, 24 Jun 2015

Discussion

Throughout the research process, it became clear that a determining factor that separated the BU/ZCAHRD partnership from the CARE/Cornell partnership was duration of the collaboration. As stated previously, though ZCAHRD was not formally founded until 2006, BU had an established research connection within Zambia starting in 1998, that later transformed into the independent NGO of ZCAHRD. Due to this, many of the difficulties in establishing a new collaboration have been long resolved. BU and ZCAHRD have had seventeen years to improve the partnership to increase efficiency and satisfaction on both sides. Cornell and CARE, on the other hand, just recently started their collaboration in 2012 (Atkinson Center 2012), and the Zambia-based project only started in 2014.. They are thus in the beginning stages of the partnership and have understandably not yet worked the collaboration to a perfect science.

In addition to the difference in duration of the partnership, the establishment of the partnerships differs. ZCAHRD was created by BU as a result of the already existing research connections of BU in Zambia. From the start, ZCAHRD was research oriented and affiliated with BU. On the other hand, CARE International, including CARE USA and CARE Zambia, had been long established before the Cornell collaboration. Additionally, CARE is primarily focused on intervention implementation, rather than research. This collaboration results in an organisation that is not accustomed to research or university partnerships. This calls for an adjustment on behalf of the NGO, both by individual staff members and of organisational structure. Although both BU and Cornell were involved in research prior to their respective collaborations, at the point of time of our investigation, the BU researchers had been engaged in this type of research collaboration for many years. Conversely, the Cornell researchers had learned how to navigate these relationships many years ago, whereas the Cornell University researchers are navigating the waters for the first time.

The process of the establishment of ZCAHRD limited many of the challenges faced by CARE in regards to the partnership. ZCAHRD has never undergone the transition of starting a

partnership with a university as they never existed without the university partner. Though both BU and Cornell researchers underwent the process of learning how to partner with an NGO, at the time of the interview, BU researchers had already learned how to navigate these partnerships, while the Cornell researchers were only just learning. These two major differences in stages of transition into partnership are the determining factors for the increased efficiency of the BU/ZCAHRD partnership relative to CARE/Cornell. We would like to emphasise that the increased efficiency is not due to inherently greater administration, researchers, or skills, but rather experience that led BU and ZCAHRD to establish a streamlined and system partnership.

Throughout our interviews, we explicitly asked our interviewees what they think contributes to a successful collaboration. Though answers obviously varied, we were able to group responses into five major themes. The themes were prioritised by the frequency of response. Listed from highest to lowest priority, the themes are the following - communication and leadership/administration tied at highest priority, time/dedication, and lastly priorities/goals tied with mutual understanding/flexibility.

Importance of Communication in Budgeting

A recurring difficulty in these partnerships, though not unique to those between NGOs and research universities, was budgeting and allocation of funds. Members from both partnerships indicated that there were many hidden costs that were often overlooked during budgeting. Some of these hidden costs included transportation and office supplies. Furthermore, local organizations bring their unique cultural knowledge to the table. According to Semrau, the co-PI of the ZamCAT study, cultural misunderstanding is a challenge, especially in Zambia where it is necessary to have a good relationship with chiefs of tribes. When visiting a tribe, it is necessary to have a gift for a chief. However, government donors often do not understand this cultural difference when providing funding for the organisations.

Increased communication between the two parties at the time of budgeting may resolve these issues. Particularly, it is crucial to have proper communication and input on behalf of those most familiar with field site, as they will have the best knowledge on local prices on expenses such as fuel. Though it is nearly impossible to perfectly determine budgeting before a trial actually begins, proper communication can provide the most realistic view of budgeting needs. Efficiency increases with superior allocation of funds as insufficient budgeting can often result in delays in the research timeline.

The CARE-Cornell budget was determined largely between CARE USA and Cornell, with little involvement from CARE Zambia. Though there were no major problems with funding, both CARE and Cornell addressed that the budget had imperfections. Some of the unexpected costs, such as printers and scanners, could have been avoided if CARE Zambia had played a larger role in the creation of the budget. This problem is more prominent to CARE-Cornell as the partnership includes two branches of CARE, calling for communication across three parties as opposed to two. As the partnership grows, however, budgeters will likely develop a better sense of relevant costs in Zambia, thus improving the allocation of funds.

Analysis on Division of Labour

One of the themes that both CARE-Cornell and ZCAHRD-BU emphasised were the responsibilities and time dedication of each person to research. For CARE-Cornell, Brie Reid and Modesta Chileshe, major researchers for the One Health EE study, devoted 50-80% and 100%, respectively, of their time to the study. Nearly all interviewees involved in the CARE-Cornell partnership have mentioned how imperative this was in moving the research forward. In the ZCAHRD-BU partnership, all staff members at ZCAHRD are fully involved in the research and its publication, as that is the primary aim of the organisation. The PIs also dedicate a significant portion of their time to the research project, including making visits to the field site if they are based in Boston. Therefore, future collaborations need full-time employees who can be fully committed to the research. as well as the analysis and presentation of the data.

Learning from the collaboration between ZCAHRD and BU, in which both sides actively take part in the design of the research to the consumption of the data, it is recommended that CARE-Cornell personnel be involved in the full research process. This will lead to an increase in research capacity for both parties.

In August 2012, there was a project on academic-NGO research collaboration in international development by the International NGO Training and Research Center (INTRAC, World Vision UK and University of Bradford. They commented that NGOs should seek active involvement in the research process, in order to improve the ownership of the research, capacity building of knowledge and skills and allow NGOs to build on the data. Therefore it is crucial to create a long-term and engaging relationship in which both parties are able to work together to address obstacles and aims. (INTRAC et al., 2012).

Another benefit when NGOs partner with research universities is the supply of students who hope to be engaged in research. Both CARE-Cornell and ZCAHRD-BU have mentioned the mutual benefits of having students assist in the whole process. On one hand, there are more people involved in data collection, entry and analysis as well as the publication and presentation of the findings. On the other, students will benefit by building their research capacity as well as having hands-on experience in the field.

Funding Challenges

Both partnerships have mentioned the difficulty in finding and distributing funds for the necessary resources, act of research, transportation, communication, and salaries of staff involved. Therefore, funding has a large influence on how research is conducted as well as the type of relationship the NGO and research university will have. It could either act as a constraint when funders develop the research agenda, an impetus for innovation and research, or as a facilitator of the research process itself. This issue stems from the tension between the aims of the university and NGOs. Dr. Thea has expressed that the misalignment of NGOs and research universities is unavoidable, as 'that is the world of

global health research and global health organisations'. Therefore, flexible funding is necessary to bridge the gap between NGOs and research universities.

The staff of ZCAHRD is largely dependent on funding provided by outside sources, such as the Gates Foundation, USAID and UNICEF. In contrary, the CARE-Cornell partnership attempts to avoid the issue of unreliable funding by partnering with the Atkinson Center for a Sustainable Future. This centralised funding attempts to optimise collaboration between Cornell researchers, CARE staff and its communities. Although the CARE-Cornell partnership still struggles with funding in terms of the allocation of funds, it hopes to eliminate the dependency on outside, decentralised funding.

Through the two partnerships and research done in the Cracking Collaboration project, it is important to find funding that encourages research and innovation through collaboration. Furthermore, it is crucial that funders understand the time and resources necessary for research, the need for cultural awareness, and the importance of capacity building and publication of data.

Conclusion

In sum, the partnership between NGOs and research universities has the potential to bridge the gap between research and policy or programme implementations. However, this comes with its challenges, in terms of funding, allocating responsibilities, finding dedicated staff and faculty, consistent communication and understanding of cultural differences. The biggest difficulty seems to be the tension between the aims of and obstacles experienced by NGOs and research institutions -- NGOs are constrained in terms of time and need results, while research universities emphasise publication and theory-building. However, through a mutual understanding of this tension, finding funding organisations that appreciate research and innovation, effective collaboration and division of labour and flexibility, these obstacles can be overcome. Although CARE-Cornell and ZCAHRD-BU are at different stages of building this partnership, they both have the potential to excel.

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