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Determinants of Sustainability in Community Development: Progress, Challenges, and Opportunities

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Determinants of Sustainability in Community Development: Progress, Challenges, and Opportunities

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Abstract

Determinants of Sustainability in Community Development: Progress, Challenges, and Opportunities

By Matthew Turner

Background: Improvements in sustainability have been identified as an effective method for improving the overall effectiveness of community development interventions. The information regarding factors that contribute to sustainability is insufficient and to date there is not an adequate framework for the evaluation of intervention sustainability.

Objective: This paper examines what factors of community development are determinants of sustainability and presents a framework for the evaluation of development interventions for sustainability. This paper also explores common strengths and weaknesses of development interventions and makes recommendations for best practices based upon these results.

Methods: A literature review was carried out to identify determinants of sustainability; five levels of sustainability were identified for each determinant. This information was used to develop an evaluation framework. Forty organizations, programs, and projects were then evaluated for probability of sustainability using the presented framework.

Results: This paper identified eleven determinants of sustainability and presents a framework for evaluation of sustainability. Overall, respondents had a mean evaluation Total Score of 37.85 (Out of possible 55). This paper identified that respondents are strongest in Length of Intervention (Mean 4.080) and in Capacity Strengthening (Mean 3.950), and are weakest in Leadership (Mean 2.730) and Funding Resources (2.950) [Means out of possible 5.000]. Correlation analysis indicated that Community Ownership is the determinant most related to sustainability, followed closely by Monitoring Quality, Assessment Methods, and Evaluation Quality.

Discussion: The results of this research indicate that the future of effective development work is dependent upon the transfer of power to communities and the ability of development organizations to support the capacity strengthening of communities in order to increase self-reliance. The findings suggest that a shift in common intervention approaches may be necessary if sustainability is to be a goal. Improvement in leadership strength, decreasing dependence on external funding sources, and improvements in monitoring efforts and the quality of evaluations are needed to see desired results. Improved quantitative research is still needed to improve the knowledge base surrounding determinants of sustainability and to improve the quality of the presented evaluation framework.

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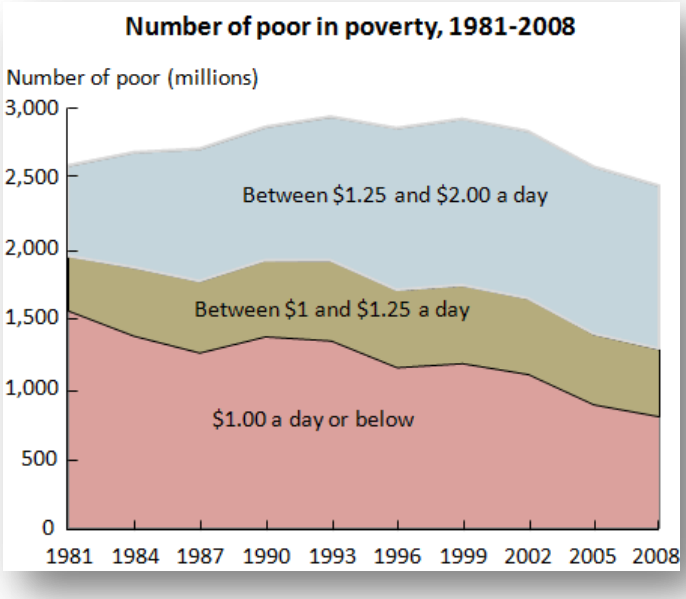
List of Acronyms:

BRAC - Bangladesh Rural Advancement Committee
CABI – Centre for Agricultural Bioscience International
CDC – United States Centers for Disease Control and Prevention
CFRP-TUP – Challenging the Frontiers of Poverty Reduction – Targeting the Ultra Poor, A BRAC program
ICDDR, B – International Center for Diarrhoeal Disease Research, Bangladesh
IGVGD – Income Generation for Vulnerable Groups Development, a BRAC program
JSTOR – Journal Storage, a science journal database
MaNHEP – Maternal and Newborn Health in Ethiopia Partnership
MDG – Millennium Development Goal
MIT – Massachusetts Institute of Technology
MMR – Maternal Mortality Ratio
MMWR – Morbidity and Mortality Weekly Report
NCBI – National Center for Biotechnology Information
NGO – Non-Governmental Organization
OECD – Organization for Economic Cooperation and Development
PIH – Partners in Health
SEARCH – Society for Education, Action and Research in Community Health
SEWA – Self-Employed Women's Association
UN – United Nations
UNCED – United Nations Conference on Environment and Development
UNICEF – United Nations Children's Fund
UNOP – United Nations Office for Partnerships
UNRISD – United Nations Research Institute for Social Development
USAID – United States Agency for International Development
VHW – Village Health Worker
WHO – World Health Organization
ZANARA-CRAIDS – Zambia National Response to HIV/AIDS-Community Response to HIV/AIDS

Chapter 1: Introduction

Each year, developed nations, research institutions and non-governmental organizations (NGOs) invest billions of dollars toward the development of nations with developing economies. Despite trillions of dollars in investments over the last fifty years, poverty and health development indicators have failed to produce the desired impact. Significant improvements have been made in several global development indicators. The number of people living on less than $1.25/day has been reduced from 1.91 billion in 1990 to 1.29 billion in 2008, a decline of 43% percent (World Bank, 2012b). Since the Millennium Development Goals (MDGs) were first established in 1990, the number of under-five deaths per year has been reduced from 12.0 million in 1990 to 7.6 million in 2010 (UN, 2012). However, during the same time period, the number of people living on less than $2 per day has only seen a slight reduction (Figure 1), and the number of maternal deaths has decreased from 543,000 in 1990 to 287,000 in 2010, but is more than double the MDG goal (UN, 2012).

Figure 1: Population Living in Poverty Worldwide From 1981-2008. (World Bank, 2012a)



There remains a gap in the desired outcome at the international level for the development of impoverished nations. Researchers attribute this to the low quality of international development efforts currently in place in recipient nations (Shah, 2012). Numerous researchers have investigated methods of improving the quality of development efforts and have frequently identified sustainability of benefits as essential to effective development (Cassen, 1986). With the knowledge of which factors contribute to the sustainability of intervention benefits and an adequate framework for the evaluation of sustainability of produced benefits, the international development community could then move towards more effective and efficient improvements in development.

Problem Statement:

With the level of attention that sustainability has received in the recent literature, it is important to identify the factors that determine sustainability of the benefits produced by development activities. Recent studies indicated a lack of useful information regarding sustainability; general recommendations regarding best practices to guide the design and implementation of development activities are not available (Shekelle, et al., 2013). While literature does exist that evaluates the importance of individual factors for sustainability among specific interventions, there is a lack of knowledge regarding which factors consistently contribute to sustainability of benefits across a broad range of interventions. Identification and use of these factors would likely improve the design and implementation of future development activities.

Furthermore, there is a lack of an adequate framework with which to assess development activities for sustainability of benefits (Ridde, et al., 2006). Existing frameworks are concerned

with single intervention types or with measures of sustainability that do not contribute to the quality of development (Naylor, Wharf-Higgins, Blair, Green, & O'Connor, 2002). The identification of key determinants of sustainability would enable planners and program developers to strengthen the potential for sustainability and enable improvements in the efficiency and effectiveness of development. Without an adequate framework for evaluating sustainability, it is difficult to evaluate existing and planned development activities for sustainability potential and make recommendations to improve outcomes.

Purpose Statement:

This paper utilizes a literature review of factors that contribute to sustainability of benefits and presents a framework that development planners can use to increase the sustainability potential of development interventions.

Objectives:

1. Identify factors that consistently contribute to sustainability of benefits across a broad range of interventions.
2. Develop a framework for evaluation of the probability of sustainability of benefits based upon the information identified in Objective 1.
3. Evaluate a sample of organizations, programs, and projects for their potential for sustainability of benefits.
4. Identify opportunities for improvement of the sustainability potential of organizations, programs, and projects evaluated in Objective 3.

5. Make best practice recommendations based upon the common shortcomings and opportunities for improvement identified in Objective 4.

Statement of Significance:

The findings of this paper will be used to inform agencies involved in international development of best practices for implementing activities that will lead to improvements in sustainability of benefits. The framework developed will be shared with members of the development community and will be used to evaluate existing and future development activities. It is hoped that the resulting framework will be developed and refined through further research in order to continue improving the delivery of quality development assistance. Additionally, it is hoped that the information regarding factors related to sustainability of benefits, coupled with this new evaluation tool, will be used by funding agencies to direct funding toward more effective and efficient development activities, thereby increasing the impact per dollar of investments in development activities.

Definition of Key Terms:

Capacity Strengthening – "Increasing the ability of a community to define, assess, analyze, and act on concerns of importance to the members of the community." (Labonte & Laverack, 2001)

Community – A population group connected through relationship; in the case of this paper a village, district, region, or nation depending upon the context.

Decentralization – Spreading services out to better reach underserved rural populations by providing basic care services in peripheral community settings and providing referral services to a central healthcare facility.

Empowerment – Sharing of power that enables a recipient to make use of knowledge, resources, and opportunities in order to direct their future and control their destiny.

Self-reliance – In the context of development, it is the ability to identify one's own barriers to health and wellbeing, and to develop and implement one's own solutions to those barriers.

Social Capital – Social relationships that provide productive benefits.

Sustainable – Having the ability to persist in the absence of external inputs.

Sustainability of Benefits – The capacity for produced benefits to continue to exist for a period of time after the implementation of an intervention.

Chapter 2: Literature Review

Estimates of the total amount of international money allocated to developing countries by wealthier nations for development vary, from a low end of $2.30 trillion over the last 50 years (Easterly, 2007) to a high end of $3.19 trillion since 1970 (OECD, 2012). The United States' support for development in 2006 included $34.8 Billion through private philanthropy and $23.5 Billion from the United States Agency for International Development (USAID). The United States is one of the largest contributors to international development (UNOP, 2007).

Despite the generosity and good intentions, the general consensus is that development funding is ineffective, and as Arole and Arole (2003) stated, "aid is siphoned off and the poor remain poor."[1] This is not to say that development organizations and national governments have not achieved some success in development. Among other improvements in development indicators, the number of individuals living on less than $1.25 per day decreased significantly from 43% in 1990 to 16% in 2008 (World Bank, 2012a), maternal mortality decreased significantly from 543,000 in 1990 to 287,000 in 2010 (World Health Organization, 2012), and the number of under-five deaths decreased from 12.0 million in 1990 to 7.6 million in 2010 (UNICEF, 2011). Despite this, authors such as Anup Shah (2012) observed that development assistance to date is insufficient in quantity and in quality. William Easterly (2006) pointed out that when nearly $100 billion in foreign aid was given in 2005, "one million children died from diarrhea due to lack of ten-cent oral rehydration salts and more than one million died from malaria due to lack of medicine that costs twelve cents a dose."[2]

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[1] Arole, M., & Arole, R. (2003). *Jamkhed, A Comprehensive Rural Health Project* (2nd ed.). Maharashtra, India: Comprehensive Rural Health Project. p 106.

[2] Easterly, W. (2006, December 1). The Effectiveness of Foreign Aid. [Online Discussion]. Retrieved from http://www.cfr.org/foreign-aid/effectiveness-foreign-aid/p12077

There are a multitude of reasons for the ineffectiveness of development assistance. Both the United Nations (UNRISD, 2010) and William Easterly (2007) highlighted conditionality clauses written into assistance packages that determine the way in which money is allocated; resulting in assistance often missing the populations most in need. Santiso (2001) demonstrated that conditionality clauses attached to assistance funds are very harmful to development and that through conditional market closures for recipient nations and exclusive provider contracts with donor nations, assistance funds can actually make target nations poorer (Santiso, 2001). Other reports such as Arole and Arole, (2003), Sachs (2005), Easterly (2007), Collier and Dollar (2002), Collier (2007), and OECD (2012) demonstrated that assistance funds have rarely met the needs of those who needed them most. The OECD (2012) showed that nearly 75% of assistance funds from 1970 to 2010 were distributed to high and middle developing countries. Collier and Dollar (2002) showed that this is frequently the result of donor assistance being used to elicit a policy change that is beneficial for the donor nation rather than for the purpose of assisting the recipient nation. Collier (2007) later showed that nearly one fourth of past assistance has been in the form of "technical assistance" rather than funds for development.

In addition to demonstrated inefficiencies in donor assistance reaching the targeted recipients, Mansuri and Rao (2004) and Collier and Dollar (2002) demonstrated that there is little evidence linking international development assistance funding to actual outcome improvements in development indicators. The evidence providing a link between the funding and the outcome was so sparse that Esther Duflo, Professor of Poverty Alleviation at Massachusetts Institute of Technology (MIT) claimed that development has been "more guesswork than science".[3] Collectively, the absence of a link between development assistance funding and generated

[3] Duflo, E. (2010, May). Social experiments to fight poverty [Video File]. Retrieved from http://www.ted.com/talks/esther_duflo_social_experiments_to_fight_poverty.html

outcomes, and the challenges in appropriately directing funding to those with the greatest need, have eroded the confidence of the public, recipient nations, and most importantly the poor who look to the outside world for assistance.

Measures of Accountability

In an effort to stem the "loss" of assistance effectiveness to these factors, various parties including researchers, NGOs, governments, foundations, and funding agencies have proposed several measures of accountability for funding over the past several decades. In the 1970s, watchdog groups and state governments generated the concept of program expense ratios in response to several non-profit development organizations' large-scale public misuse of funds that were highlighted in the media (Hager & Flack, 2004). These ratio measures, although useful, did not elucidate whether an organization performed its objectives well, whether the money expenditures produced the intended outcomes, or if efforts reached the intended beneficiaries.

Building on expenditure ratio reporting, interested parties also examined the effectiveness and efficiency of interventions. Due to vast differences in organizations and programs, these measures are very subjective and provide information that is not readily comparable across a variety of programs and organizations. In the late 1980s and the early 1990s, researchers began looking to sustainability as a measure of accountability in response to frustration that development efforts seemed to disappear after implementation efforts ceased (Brinkerhoff & Goldsmith, 1992). Brinkerhoff and Goldsmith (1992) posited that an institution that persists will provide a constant stream of benefits and thereby produce more benefit for the same dollar investment than an institution that does not persist. An early analysis of funding efforts in 1985 and 1986 by USAID demonstrated that only 11% of 212 USAID funded interventions achieved

sustainability (Kean, Turner, Wood & Wood, 1987). In the mid 1990s, this measure gained in popularity, as evidenced by the Bangladesh Rural Advancement Committee (BRAC)'s method throughout the late 1990s of evaluating sustainability according to the profitability of programs and the ability of those profits to independently maintain the program (Hussain, 1998). In 2002, the World Health Organization issued its definition of sustainability:

> "The ability of a project to continue to function effectively, for the foreseeable future, with high treatment coverage, integrated into available health care services, with strong community ownership using resources mobilized by the community and government."[4]

Other researchers built upon this including Savaya and Spiro (2012) who evaluated sustainability upon the continued existence of organizations, and Blasinsky, Goldman, and Unützer (2006) who evaluated sustainability upon the continued existence of the program.

Ridde, et al. (2006) demonstrated that stakeholders conceive sustainability in terms of finances and institutions because there are not adequate frameworks in place that employ other determinants for measurement. In contrast to the sustainability of institutions or financing, Cassen (1986) and Bossert (1990) called for evaluating the sustainability of outcomes or benefits after the funding agencies are no longer involved. Cassen (1986) believed that assistance funds could best be evaluated by whether or not the assistance contributes to the long-term self-reliance of the beneficiaries beyond the life of the intervention. Bossert (1990) asserted that having a goal of institutional sustainability would put pressure on institutions to recover portions of program expenses through fee-for-service programs at higher levels than the beneficiaries can afford, and place an unfair financial burden on those in need of the program services. Bossert (1990) also

[4] World Health Organization. (2002). Guidelines and instruments for conducting an evaluation of the sustainability of CDTI projects. WHO/APOC/MG/02-1. African Programme for Onchocerciasis Control, Ouagadougou. p 5.

demonstrated that there is a ceiling on the ability of beneficiaries to fund health related activities, where increases in fees do nothing to increase revenue and yet exclude intended beneficiaries from services. Arole and Arole (2003) stated that "sustainability is not finding continued sources of income for years, nor is it handing the program off to the government, nor is it survival of the institution."[5] Despite these efforts to improve the evaluation of sustainability, Shekelle, et al. wrote in January of 2013 that efforts have yet to produce a quality framework that can be used across the board, especially during the implementation period, by stating the following:

> "Existing frameworks for the assessment of public health evidence do not deliver key pieces of information to inform best practices for community and large-scale global health programs, with the lack of information about implementation and sustainability being an important identified gap.[6]"

Definition of Sustainable Development

Sustainability as a term became a widespread part of development language for the first time in 1987 when the United Nations Commission on Environment and Development (UNCED) published a report, later called the Brundtland Report (Brundtland, 1987), which gave the first official definition of sustainable development: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[7] This definition, while useful, did not adequately fit the needs of most international development efforts. The institutions involved in community development subsequently created several

[5] Arole, M., & Arole, R. (2003). *Jamkhed, A Comprehensive Rural Health Project* (2nd ed.). Maharashtra, India: Comprehensive Rural Health Project. p 244.

[6] Shekelle P. G., Maglione M. A., Luoto J., Johnsen B., & Perry T. R. (2013, January) Global Health Evidence Evaluation Framework. Research White Paper. AHRQ Publication No. 13-EHC008-EF. Rockville, MD: Agency for Healthcare Research and Quality. p vi.

[7] Brundtland, G.H. (Ed.). (1987). *The United Nations World Commission on Environment and Development: Our Common Future*. Oxford, UK: Oxford University Press. p 16.

varying definitions for particular purposes. Donors use one definition and policy makers use another to describe what is sustainable in their niche of work (Morgan, 2001). Sarriat, et al. (2004) developed a comprehensive definition for sustainable development in 2004 that has been adopted by several authors such as Walsh, Mulambia, Brugha, and Hanefeld (2012) and is as follows:

> "A contribution to the development of conditions enabling individuals, communities, and local organizations to express their potential, improve local functionality, develop mutual relationships of support and accountability, and decrease dependency on insecure resources (financial, human, technical, informational) in order for local stakeholders to negotiate their respective roles in the pursuit of health and development, beyond a project intervention."[8]

Costanza and Patten (1995) built a definition from the ground up pointing out that something is sustained if it persists. Johnson et al. (2004) agreed by developing a definition specifically for program activities, suggesting that sustainability is the ability of program initiated activities to persist after the program has ended. Therefore, sustainable development is development which persists beyond the input period, or the life of the program. Arole and Arole (2003) combined the definitions of Costanza and Patten (2005) and Cassen (1986) to arrive over the course of nearly thirty years of work at a definition of sustainable development that is "development that builds the [self-reliance] of communities until they are able to choose their own objectives and find their own solutions." In short, it is sustainability of benefits due to an

[8] Sarriot, E. G., Winch, P. J., Ryan, L. J., Bowie, J., Kouletio, M., Swedberg, E., ... & Pacqué, M. C. (2004). A methodological approach and framework for sustainability assessment in NGO-implemented primary health care programs. *The International journal of health planning and management*, *19*(1), p 24-25.

increased measure of self-reliance and capacity of the beneficiaries. Naylor, et al. (2002) further split this into four tiers of potential program activity results, including:

1. Program does not continue
2. Program continues in reduced form
3. Program continues as is
4. Program continues with expansion driven by the community.

Determinants of Sustainability

In 2007, Harman declared in an evaluation of governance in the World Bank, that only lip service had been paid toward sustainability, with no thought or regard as to what specifically should be sustained. Recognizing the value of sustainability of benefits and the lack of real attention given to it by implementing institutions, some researchers have attempted to identify what factors contribute to sustainability of benefits. Johnson et al. (2004) demonstrated that sustainability of intervention outcomes was influenced by factors that take place in the design and implementation periods of the intervention as opposed to factors that take place near the end of the intervention. Although few have demonstrated causality, several case studies and qualitative studies identified a number of these factors that are correlated with sustainability of benefits.

Community Ownership

A centrally recurring theme in the literature is the level of ownership held by a beneficiary community. Arole and Arole (2003) claimed that "the greatest factor in improving

the conditions of the poor is the involvement of the people themselves"[9] and cited several examples of failures by the Indian government to replicate the efforts of the Comprehensive Rural Health Project (CRHP) in Jamkhed due to a lack of community ownership. Bossert (1990), upon a study of several USAID funded initiatives, asserted that community ownership is only relevant to the sustainability of benefits in Africa-based development interventions. Khwaja (2002) and Chowdhury and Bhuiya (2004) challenged this claim. Khwaja (2002) demonstrated in Northern India and Nepal that interventions managed by community members are more likely to sustain benefits than those managed by the government or NGOs. Additionally, Chowdhury and Sattar (2005) claimed that increasing community ownership improves sustainability of benefits in Bangladesh. Arole and Arole (2003) demonstrated the importance of community ownership in India, Tana (2012) demonstrated the link in Indonesia, and Leffers and Mitchell (2011) identified the importance of community ownership in development interventions across several continents.

Israr and Islam (2006) demonstrated the need for community ownership, especially in the planning period, even for large-scale national initiatives within the Ministry of Health of Pakistan. Israr and Islam (2006) also declared the need for the community to have ownership of the monitoring and evaluation process. As the recipients of the benefits, the community members are most acutely attuned to how programs impact them. This was echoed in the Center for Disease Control and Prevention's (CDC's) recommendation paper in the Morbidity and Mortality Weekly Report (MMWR) concerning the framework of a high-quality evaluation design (Millstein & Wetterhall, 1999). The framework recommended including the beneficiaries of an initiative in the evaluation, both supporters and opponents, stating that "enlisting the help

[9] Arole, M., & Arole, R. (2003). *Jamkhed, A Comprehensive Rural Health Project* (2nd ed.). Maharashtra, India: Comprehensive Rural Health Project. p 121.

of program opponents in the [evaluation] might be prudent because [it may] strengthen the evaluation. Opposition to a program might stem from differing values regarding what change is needed or how to achieve it."[10] Chen, Reed, Parker, and Pillemer (2013) highlighted the need for community ownership when an evidence-based intervention is being implemented and cultural or socioeconomic factors differ from that of the setting in which the intervention was originally evaluated.

Oakley (1991) described four tiers of community ownership:

1. None
2. Minimal - the community is only involved as a cost-recovery mechanism,
3. Contribution - the community voluntarily joins the program to help achieve the objective outcomes
4. Empowered - the community organizes socially or politically to address their own needs.

Mansuri and Rao (2004) refined these tiers by folding Oakley's 'minimal' into the no ownership tier, citing that it is not true ownership, and redefined 'contribution' and 'empowered' as community-based and community-driven respectively. Mansuri and Rao (2004) described community-based as involving community members in the design and management of interventions, and described community-driven as the community having direct ownership over key decisions and management. Naylor et al. (2002) described four tiers of ownership that were based on the extent of community ownership over decision making:

1. Consultation - the community is involved only to be "sold" the intervention
2. Cooperation - the community provides advice, but has no decision-making ability

[10] Millstein, R., Wetterhall, S. (1999, September 17). Framework for Program Evaluation in Public Health. *Morbidity and Mortality Weekly Report. 48*(RR11), p 7.

3. Participation - the community and implementers have equal share in decision making
4. Full Control - the community has full decision-making ability, and the implementers provide advice.

This leads into a topic of much debate among authors, spearheaded by the economic development researchers and authors, Jeffrey Sachs, author of *The End of Poverty* (2005), and William Easterly, author of *The White Man's Burden* (2007), as to the best approach to development. Although unlikely to be sustained due to funding restraints, Bossert (1990) argued that vertical, top-down structures are most effective. Sachs (2005) argued that the only way to see large-scale change is through country-wide, top-down, large-scale planning. Ashwell and Barclay (2010) and Easterly (2007) countered that large-scale plans are top-heavy with additional expenses and opportunities for corruption. Ashwell and Barclay (2010) specifically pointed out that large-scale initiatives are distanced from the people and that there is an increased risk of resource diversion resulting from conditions attached to large-scale assistance funding and political motives for donor-favorable policy changes. Barrett (1996) posited that top-down approaches are ideal, however, given the strict requirements regarding the right combination of people and the right setting needed for a top-down approach to work, it has only been successful to date for brief periods of time in a few scattered locations. A bottom-up approach likely remains more feasible for affecting change in the majority of settings.

Buckland (1998) posited that the beneficial effects from community ownership are not a direct result, but rather are the byproduct of the empowerment conferred on the community through increased ownership, confidence, and other factors that influence empowerment.

Empowerment

According to Chavez, Duran, Baker, Avila, and Wallerstein (2003) and Postma (2008), "empowerment is the sharing of power to enable beneficiaries to share knowledge, resources, and opportunities in order to direct their future and control their destiny."[11] Chowdhury and Sattar (2005) agreed, calling empowerment "an enhancing of the community voice."[12] Arole and Arole (2003) defined sustainability of benefits as empowering communities to choose their own objectives and find their own solutions, and suggest that investing in self-reliance is "crucial" to sustainability. As Cassen (1986) described it, empowerment is the building of self-reliance so that communities can take care of themselves long-term. Arole and Arole (2003) and Alarakhia and Barau (2005) pointed to confidence as the first step to self-reliance; the poor have long been told they are incapable, and without confidence, they will be unable to take ownership of their own advancement.

Arole and Arole (2003) and Mansuri and Rao (2004) asserted that development interventions have a responsibility to pave the way for the equality of the marginalized, ultra-poor, and vulnerable populations. Arole and Arole (2003) stated that equality is important both in the status of individuals culturally and also as partners in development. Both authors cited the concept of elite capture, where the moderately poor and wealthy utilize their power, influence, and social status to capture the benefits of interventions, preventing benefits from reaching the ultra-poor and marginalized. Arole and Arole (2003) described an effort to prevent elite capture, wherein CRHP-Jamkhed staff deliberately took wealthy leaders to the poorest parts of villages in

[11] Leffers, J., & Mitchell, E. (2011). Conceptual model for partnership and sustainability in global health. *Public Health Nursing*, *28*(1), p 98.

[12] Chowdhury, A., & Sattar, M. (2005). *Building governance for fighting poverty: Role of NGOs in Bangladesh* In: Sudhakar Rao (ed), Guidelines for good governance. Dhaka, Bangladesh: BRAC, Research and Evaluation Division. p 137.

order to have them acknowledge that the poor needed their help and that it was in the best interest of the entire community to assist them. Other efforts to prevent elite capture took place through CRHP's establishment of Farmer's Clubs, women's groups, and the selection of Village Health Workers (VHWs). Arole and Arole (2003) singled out women as a particular group to protect by demonstrating that women are often the keeper of household health, and as such, their attitudes, knowledge, and status influence the health and self-reliance of the entire community.

Equality is one component of social capital, a factor noted by several authors to contribute to sustainability of benefits. Arole and Arole (2003) stated that empowerment through the building of social capital occurs when populations increase their sense of honesty, integrity, concern for others, forgiveness, sensitivity, equality, and justice. Arole and Arole (2003) and Das and Misha (2010) demonstrated that the development of social capital is critical for the empowerment of populations.

Finally, Arole and Arole (2003) and Das and Misha (2010) demonstrated that the development of a good work ethic is essential to the empowerment of a community. Das and Misha (2010) posited that it is a characteristic that individuals either have or do not have, while Arole and Arole (2003) asserted that it can be unlocked as steps toward empowerment are taken. Arole and Arole (2003) used an example from CRHP where ultra-poor populations significantly increased their labor output once their confidence improved and they realized the benefits their efforts produced for their families and their community. Citing failed efforts by the Indian government to replicate and scale up CRHP efforts without waiting for the community to be empowered, Arole and Arole (2003) stressed that empowerment is a slow and gradual process and that if it is rushed it will fail.

Eng and Parker (1994) described an empowered community as one that is ready to move forward in self-reliance and has the following characteristics:

1. "active involvement in community affairs
2. strong commitments to the community
3. awareness of each part of the community's identity and contribution
4. the ability to express collective views and exchange information
5. proper processes for conflict containment and accommodation
6. the ability to use resources and manage relations with the wider society
7. the ability to establish more formal means to ensure representative input in decision-making
8. social support"[13]

Capacity Strengthening

Several authors noted that empowerment is significantly dependent upon capacity strengthening. Labonte and Laverack (2001) defined capacity strengthening as "increasing the ability of a community to define, assess, analyze, and act on concerns of importance to the members of the community."[14] Montemurro, Raine, Nykiforuk, and Mayan (2013) and Labonte and Laverack (2001) concluded that capacity strengthening is essential for the success of community development initiatives; Higgins, Naylor, and Day (2008) demonstrated the "critical" role capacity strengthening plays in sustainability. According to Hawe, Noort, King, and Jordens (1997), capacity strengthening allows a community to continue or to expand the benefits of an

[13] Eng, E., & Parker, E., (1994). Measuring community competence in the Mississippi Delta: the interface between program evaluation and empowerment. *Health Education Quarterly, 21*, p 208-210.

[14] Labonte, R., & Laverack, G. (2001). Capacity building in health promotion, Part 1: for whom? And for what purpose?. *Critical Public Health*, *11*(2), p 114.

intervention, thereby increasing the per dollar impact. The literature described capacity strengthening in two forms: 1. Institutional capacity strengthening and 2. Individual capacity strengthening (Bennet, Singh, Ozawa, Tran, & Kang, 2011).

For individuals, empowerment through capacity strengthening occurs from the building of confidence and social capital resulting from training and the sharing of knowledge. Oakley (1991) stated that individual capacity strengthening occurs naturally as a result of increases in community ownership; however Mansuri and Rao (2004) noted that this only occurs if elite capture is avoided. Arole and Arole (2003) declared that "the key to self-reliance is the possession of key knowledge and skills, not degrees."[15] They recognized that working with semi-literate populations is a slow process that requires patience, and innovation, and persistence. Edler and Gipp (2010) recommend that skill training only occurs as a long-term intervention. They suggest that short-term trainings are often incomplete and may cause more harm than good if trust, language, and cultural barriers are not first overcome. Bossert (1990) recognized training components as one of the only commonly present factors in sustainable national institutions; he postulated that this effect stems from the low cost required to train individuals, thereby increasing human resources and the capability to replicate or scale up interventions. Scheirer (2013) cautioned that training should only be a focus if the recipients are stable and can be retained by the intervention; otherwise efforts are better spent on institutional capacity strengthening.

Das and Misha (2010) promoted the sharing of asset management skills for reaching the ultra-poor. According to Das and Misha (2010) and Buckland (1998), many large-scale microfinance initiatives in Africa and Asia are effective at increasing capital assets; the authors,

[15] Arole, M., & Arole, R. (2003). *Jamkhed, A Comprehensive Rural Health Project* (2nd ed.). Maharashtra, India: Comprehensive Rural Health Project. p 209.

however, point to a Hashemi (1990) study that demonstrated that most of these increases in capital assets were channeled into consumerism rather than being leveraged to build additional assets or improve health conditions. Das and Misha (2010) postulated that improving knowledge sharing on the subject of asset management will increase sustainability of benefits from asset gain.

Arole and Arole (2003), Hacker et al. (2012), and Shediac-Rizkallah and Bone (1998) agreed that knowledge sharing must go both ways. Sharing knowledge is a way to build confidence, one of the factors of empowerment, because it shows trust in the recipient. When sharing goes both ways it builds mutual trust. Shediac-Rizkallah and Bone (1998) demonstrated a link between two-directional learning, an organization's ability to adapt, the community's willingness to learn to take on new responsibilities, and sustainability of benefits. Arole and Arole (2003) concluded that training is effective because it allows delegation and trust, allowing the community to slowly take full ownership of an intervention. Hacker et al. (2012) showed that true sustainability could occur when the knowledge, skills and self-reliance gained by a community could be passed down to the next generation and demonstrate the importance of increasing a community's ability to transfer knowledge downstream.

Institutional capacity strengthening is increasing the ability of an institution to carry out the activities required to maintain an intervention (Schell et al., 2013). Shediac-Rizkallah and Bone (1998) postulated that capacity strengthening is only useful in the institutional setting because of the transient and unreliable nature of individuals. This factor plays a role when a government takes over a program, such as when a primary healthcare center is transitioned into community care, or a community forms an institution to carry out a task. Korten (1980) and Scheirer (2013) expressed that monitoring, evaluations, and adaptability are essential to

sustainability and that these can be improved through community capacity strengthening.

Chowdhury and Sattar (2005) and several other authors, most of whom advocate for a top-down approach for development, (Sachs, 2005; Collier, 2002; Santiso, 2001; Bossert, 1990) found that good governance was an essential factor in determining the sustainability of programs that were transferred post-intervention to control of another entity (government, community group, or a national institution). Findings demonstrated that good governance was important because of the ability to avoid the wasting of precious resources via corruption and oversight, and because poor governance leads to the community perception that empowerment efforts are useless if poor governance persists (Chowdhury & Sattar, 2005).

Hawe et al. (1997) recommended that assessments of community level capacity strengthening use Eng and Parker's (1994) indicators of an empowered community as a measurement tool. Hawe et al. (1997) separated capacity strengthening into three tiers rather than employing individual versus institutional separation:

1. Strengthening of infrastructure
2. Improving the sustainability of programs
3. Increasing the problem-solving capacity of the community

Support

As communities become empowered, whether or not community members feel supported in their new efforts to reduce poverty and improve health becomes a critical factor. Alarahkia and Barau (2005) showed that home, family, and network support were critical factors in the ultra-poor achieving sustainable lifestyles. This factor heavily influences confidence and empowerment. A close family member or employer can easily undermine the progress of

empowerment if they are not supportive of an individual's efforts to become self-reliant (Alarahkia & Barau, 2005).

Arole and Arole (2003) suggested that interventions often take on the role of an employer in the life of the ultra-poor through microfinance and similar interventions. Without their support, an individual's confidence can be easily shattered, and their progress toward empowerment halted. Initiatives also have the role of supporting the efforts of field staff, particularly when efforts are decentralized like those of CRHP. CRHP doctors intentionally made efforts to demonstrate support of VHWs in view of the community in order to increase the community's faith in the VHWs. CRHP also supported them institutionally so that VHWs could have confidence that their referrals to a larger medical facility were backed by high-quality facilities and proper care (Arole & Arole, 2003). Bennett et al. (2011) pointed out the need for solid support, particularly in the transition of an initiative toward complete community ownership. Scheirer (2005) demonstrated how organizational support from other partners is also a positive influencing factor in sustainability.

Leffers and Mitchell (2011) declared that high-quality support originates from high-quality leadership. Specifically, that a singular leader is required to achieve full support of interventions, beneficiaries, and staff. A leader, or as Leffers and Mitchell (2011) described, a 'champion' can provide stability, energy, and direction for interventions. In order to ensure continuity and stability, leaders must engage in grooming a worthy replacement. A leader can provide stability for interventions and for the community by creating a constant stream of communication with the community and between intervention staff and leadership (Leffers & Mitchell, 2011). CRHP elected to integrate its leadership into its staff, having all members work alongside one another and act as leaders in some capacity (Arole & Arole, 2003). Several

additional authors supported the concept of a "Champion" and its positive relationship to sustainability. (Scheirer, 2013; Scheirer, 2005; Scheirer & Dearing, 2011; Israr & Islam, 2006)

Trust

Empowerment, capacity strengthening, and support all build trust between a community and implementers. Arole and Arole (2003) cautioned implementers to spend time in the initial phases to establish credibility; community ownership cannot occur without trust. For some interventions, trust comes in multiple forms. CRHP had to establish credibility not only for their quality of medical care, but also were required to prove their motivations for helping in the rural villages before community leaders would allow them to work; communities were afraid CRHP workers sought to take their political positions and power.

Shediac-Rizkallah and Bone (1998) showed that mutual trust between implementers and a recipient community was essential to sustainability of benefits. CRHP demonstrated that in order to obtain real community ownership and to enable an intervention to be community-driven, mutual trust is required. This occurs as intervention personnel delegate responsibility to the community. Delegation through trust builds confidence, which in turn gives rise to the hidden capacity of community members, allowing illiterate individuals to be trusted to plan and implement major initiatives. CRHP went so far as to entrust most of the monitoring and evaluation of their programs to illiterate and semi-illiterate individuals. They believed that if the community has ownership of the planning and implementation of interventions, then they should also have ownership of the assessment of the programs and determination of whether set objectives are being met (Arole & Arole, 2003).

Monitoring and Evaluation

By far, the most commonly cited factors contributing to sustainability of benefits were those related to monitoring and evaluation. Several authors (Arole & Arole, 2003; Leffers & Mitchell, 2011; Tana, 2012) cited the requirement for strong baseline data in order to have an effective evaluation of the intervention later on. Without accurate baseline data it is impossible to determine if efforts are having the intended effects. Scheirer and Dearing (2011) challenged the norm of only monitoring an intervention until the end by stating that "researchers cannot know if outcomes do, in fact, continue if they do not extend outcome monitoring efforts beyond the initial intervention."[16] Leffers and Mitchell (2011) and Arole and Arole (2003) expressed the need for monitoring to be an ongoing effort, rather than taking place only at critical stages in intervention efforts. According to Matin and Yasmin (2004), ongoing monitoring helps avoid failures by demonstrating weaknesses early. Bennett et al. (2011) differed from these authors believing that monitoring and evaluation are most important when transitioning to full community ownership and when implementing institutions are withdrawing. Mansuri and Rao (2004) demonstrated that monitoring and evaluation are more important in activities that have heavy community ownership where there may be increased potential for personnel error. Nu'Man, King, Bhalakia, and Criss (2007) and Johnson et al. (2004) advocate that evaluations should take place concerning each individual factor alongside evaluations of an intervention's planning processes, implementation, and goals in order to accurately predict sustainability.

A common theme in the literature was goals. Several authors stress making goals appropriate in size to maintain accountability, citing the MDGs as being too large because no single individual or organization has ultimate responsibility or accountability for them, nor is

[16] Scheirer, M. A., & Dearing, J. W. (2011). An agenda for research on the sustainability of public health programs. *American journal of public health*, *101*(11), p 2.

there proper incentive to meet them (Ashwell & Barclay, 2010; Brinkerhoff & Goldsmith, 1992). Several authors focused on clarity and specificity of goals being linked to sustainability by demonstrating that more narrow goals and objectives can help more easily avoid mistakes that could take an intervention off-course (Brinkerhoff & Goldsmith, 1992; Bossert, 1990; Arole & Arole, 2003; Sarriot et al., 2004). Alexander et al. (2003) also suggested that staging goals to build from one success into a larger goal, i.e., carrying the enthusiasm from previous successes is an attainable way to sustainably target larger-scale goals.

Several authors stressed the importance of community ownership of monitoring and evaluation efforts. Israr and Islam (2006) postulated that allowing community members to have ownership is critical because, as the beneficiaries, they are more objective in their perception of how the intervention benefits reach them. Arole and Arole (2003) and Millstein and Wetterhall (1999) expressed that community ownership of assessment activities is part of capacity strengthening and serves to gauge whether community-designed activities are achieving the desired benefits. Millstein and Wetterhall (1999) described the essential nature of community ownership in these processes and that assessment should be integrated within normal intervention activities rather than being considered separate.

Naylor et al. (2002) described four levels of monitoring and evaluation system sustainability in each of two divisions as seen in Table 1.

Table 1: Capacity for Sustainability by Quality Levels of Methods and Indicators Used in Monitoring and Evaluation Efforts as Reported in Naylor et al. (2002)

	Level of Quality Lowest Quality = 1, Highest Quality = 4			
	1	2	3	4
Methods of Evaluation	Tests, surveys, interviews designed by implementers and conducted by implementers using hypothesis testing and significance of results statistically determined	Test, surveys, interviews designed by implementers, conducted by Community, using hypothesis and significance of results statistically determined	Partnership in design and conduct of data collection in natural context	Advice from experts sought on design, 100% conducted by community in natural context
Indicators of Success	Behavior change, decrease in morbidity/mortality, risk factors, increase in knowledge and participation in programs	Behavior change, decrease in morbidity/mortality, risk factors, increase in knowledge and participation in programs PLUS skill development in planning is facilitated	Findings used in ongoing planning, increase in knowledge of research, high participation in evaluation	Enhanced Capabilities, skills, participation so that other issues are tackled by community

Source: Naylor, P. J., Wharf-Higgins, J., Blair, L., Green, L., & O'Connor, B. (2002). Evaluating the participatory process in a community-based heart health project. *Social science & medicine*, *55*(7), 1178-1179.

Adaptability:

Shediac-Rizkallah and Bone (1998) pointed out that monitoring and evaluation are useless without adapting to the results demonstrated by the intervention assessments. Ashwell and Barclay (2010) and Hacker et al. (2012) demonstrated that freedom from donor restrictions is necessary for the adaptations needed for sustainability of benefits. Some funding agencies place such strict conditions on funding that they prohibit interventions from meeting the needs of the beneficiaries, and the potential for sustainability is lost to a lack of freedom to effectively adapt. Korten (1980) and Ashwell and Barclay (2010) both expressed that donor demands should be realistic and appropriate to allow the freedom needed for adaptability and high-quality implementation.

Second, several authors noted a natural link between sustainability and adaptability. Arole and Arole (2003) noted that, as an intervention produces positive benefits, this implicitly

changes the operating environment (e.g.: prevalence of a disease decreases as cases are treated or prevented), and constant assessment and adaptation to changes allows for delivery of continued positive benefits. Listening and observing are essential to detecting shifts in community priorities, political changes, and external factors (Arole & Arole, 2003). Matin and Yasmin (2004) found that adaptability is particularly useful in identifying and overcoming unforeseen problems, which according to Schell et al. (2013) is the only way to ensure sustainable effectiveness. Chen et al. (2013) postulated that high adaptability occurs as a result of tailoring evidence-based interventions to a culturally specific environment in the planning stages, whereas Scheirer (2005) posited that adaptability comes from community ownership because it produces specific results tailored to community priorities. Korten (1980) believed interventions which lack adaptability will rarely be sustainable because they will not achieve the level of effectiveness required to merit high-quality funding. However, Scheirer (2005) cautioned against modifying interventions solely for the purpose of gaining funding, as doing so often jeopardizes the original goals of an intervention.

Arole and Arole (2003) and Scheirer (2013) discussed an important point not evaluated in other research: creativity, particularly in technology. Both authors pointed out that high-technology solutions are not necessary in rural settings and can add unnecessary costs. Arole and Arole (2003) used regular lamps in a rural hospital rather than expensive surgical lamps because they met the basic need for a fraction of the cost. Using creative solutions with locally available materials can ease the financial burden of repair and replacement of parts (Arole & Arole, 2003). They also noted that creativity can add significant, measurable savings to interventions and increase the potential for sustainability by lowering ongoing costs.

Resources:

The literature suggested that there are three determinants of sustainability related to resources: 1. Time, 2. Partnerships, and 3. Funding. According to Bossert (1990), stability of funding, is one of the most important factors contributing to sustainability of benefits. Schell et al. (2013) noted this is of particular importance, because without adequate, stable funding, communities cannot undertake the long-term planning necessary for benefits to be sustained. Bossert (1990) and Scheirer (2013) both indicated that resources should be allocated toward long-term investments in infrastructure to have the greatest potential for sustainability. Bossert (1990), however, indicated that this is only true for ongoing government funding and supported the use of fee-for-service models rather than 100% donor funded work. Arole and Arole (2003) and Alderman, Kim, and Orazem (2003) indicated that fee-for-service recovery is most sustainable in the community context rather than at the government level. Arole and Arole (2003) suggested that donor funding should be relegated to seed money, capital expenditures, and critical needs. Alarahkia and Barau (2005) showed that sustainability of community-owned interventions is dependent upon the risk to profit ratio for the community.

Kinneman and Bleich (2004) and Leffers and Mitchell (2011) demonstrated the link between partner collaboration and sustainability of benefits. Scheirer (2005) and Scheirer and Dearing (2011) demonstrated that partnerships are useful for acquiring in-kind resources such as advice, political support, and mobilizing additional resources and funding. Alexander et al. (2003) recommended the fostering of partnerships, demonstrating that partnerships provide more stability than donor funding, provide a network for long-term problem-solving, and are useful in helping to establish sustained benefits following program cessation. Montemurro et al. (2013) stressed the importance of community partnerships for the purpose of capacity strengthening.

Bossert (1990) however warned that weak partners can lead to poor sustainability if they are too heavily relied upon. Brinkerhoff and Goldsmith (1992) suggested that the length of time partnerships exist is related to the partnership's ability to contribute to sustainability.

Time is important in several other aspects as well. According to Edler and Gipp (2010), cross-cultural training requires a minimum of five months to allow time for trainers to account for cultural barriers and context. Traditionally, most cross-cultural medical training occurs in the span of 2-6 weeks and has the potential for harm if contextual considerations are not made (Powell, Gilliss, Hewitt, & Flint, 2009; Edler & Gipp, 2010). Powell et al. (2009) suggested that the "potentially harmful side-effects of short-term efforts are minimized if short-term efforts are treated as supplemental to normal activities, rather than providing a service that cannot be continued when short-term efforts end."[17]

Several authors described the minimum length of time that should elapse after an intervention ends before benefits can accurately be assessed for sustainability. Bossert (1990) believed a minimum of three years is required, while Arole and Arole (2003) believed three years is how long it takes for community-owned interventions to fully organized, and that it takes at least five years to see an impact. Ashwell and Barclay (2010) believed sustainability cannot be determined until a minimum of seven to ten years have passed. Contrary to other authors, Scheirer (2013) did not believe there is one set minimum time, but rather that the time is dependent upon the type of intervention and can range from six months to six years.

Bossert (1990) suggested that length of intervention is not related to sustainability, but Arole and Arole (2003) believed that intervention length should be open ended so as not to put

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[17] Powell, D. L., Gilliss, C. L., Hewitt, H. H., & Flint, E. P. (2009). Application of a partnership model for transformative and sustainable international development. *Public Health Nursing*, *27*(1), p 67.

timelines on the empowerment and capacity strengthening activities that are required to achieve sustainability. They believed that many populations are more concerned with survival and basic needs than health and development, and must have these needs met before they can expend efforts on health and development. Mansuri and Rao (2004) did not comment on time except to state that speediness results in failures and that appropriate amounts of time should be allowed for proper development.

Multisector Approach:

Several authors noted the importance of integrating health-care and development activities because they are more effective together at producing sustainable development gains. Chowdhury and Sattar (2005) described the BRAC single-sector approaches in their first few years and the limited impact they had on health and the lack of impact they had on poverty alleviation. This shortcoming served as the impetus for a major shift to a multi-sectoral health and development approach. Arole and Arole (2003) stated that the "alleviation of poverty must be a part of every health program."[18] Kjærgård, Land, and Pedersen (2013) found that health and sustainable development must go hand in hand, as one without the other constrains the progress of both.

A BRAC publication (2009) stated that "Poverty never results from the lack of one thing but from many interlocking factors that cluster in poor people's experiences and definitions of poverty"[19] and demonstrated that development occurs in both income related and non-income related aspects (Sen, 2005). This is evidenced by the impact that efforts in one sector can have

[18] Arole, M., & Arole, R. (2003). *Jamkhed, A Comprehensive Rural Health Project* (2nd ed.). Maharashtra, India: Comprehensive Rural Health Project. p 83.

[19] BRAC. (2009, March*). Pathways Out of Extreme Poverty: Findings from Round I Survey of CFPR Phase II*. Dhaka, Bangladesh: BRAC, Research and Evaluation Division. p 1.

on indicators in another sector. For example, in Bangladesh, Buhiya and Chowdhury (2002) recorded a 52% reduction in hazard of death for children of mothers who received literacy training, access to savings and credit, and technical and marketing support compared to a 31% reduction in a control group. Khatun, Bhuiya, and Chowdhury (1998) demonstrated that a mother's involvement in development activities decreased the risk of severe child malnutrition by 41%. Arole and Arole (2003) declared that because of this, health, development and promotional activities should be integrated. Without this integration, Arole and Arole (2003) believed that development activities suffer because those involved become discouraged with the strong focus and resources often given to the primary healthcare sector instead. Hoey and Pelletier (2011) stressed the importance of the multisector approach but also warned of the additional efforts required to govern this approach properly, given the added complexity of efforts involved.

In addition to combining health, development, and promotion efforts, several authors supported a specific structure within the primary health-care system. Bossert and Beauvais (2002), Barrett (1996), and Kaseje & Sempabwa (1989) supported decentralization of health-care, moving toward peripheral care that is mostly controlled by beneficiaries within the community. Bossert and Beauvais (2002) claimed that the value in decentralized, peripheral healthcare comes from the added efficiency, effectiveness, equity, and contextual adaptation resulting from beneficiaries having greater ownership of healthcare decision-making. Barrett (1996) demonstrated the importance of peripheral, decentralized health systems, but pointed out that the health system must extend to the community level and actively engage the community in order to achieve the potential benefits of such a system. Sen (2005) noted that without adequate capacity strengthening, efforts to decentralize health systems will not produce the desired effects.

Chapter 3: Methods

Literature Review:

A broad **s**earch of the literature was carried out to retrieve articles that discussed or were concerned with factors related to sustainability of community development or primary health care, degrees of sustainability, definitions of sustainability, or measures of sustainability in economically developing nations. Databases searched included:

- CABI
- Emory University Dissertation Repository
- Google Scholar
- JSTOR
- Medline EBSCO
- NCBI: Pubmed and Pubmed Central
- Web of Science
- Wiley Interscience Journals
- The World Bank E-Library

The initial search terms used can be found in column 1 of Table 2. The literature identified in these searches was analyzed, and the identified determinants of sustainability were subsequently added to the search terms for expansion of the literature review. The expansion search terms that were included can be found in column 2 of Table 2.

Table 2: List of Search Terms Used.

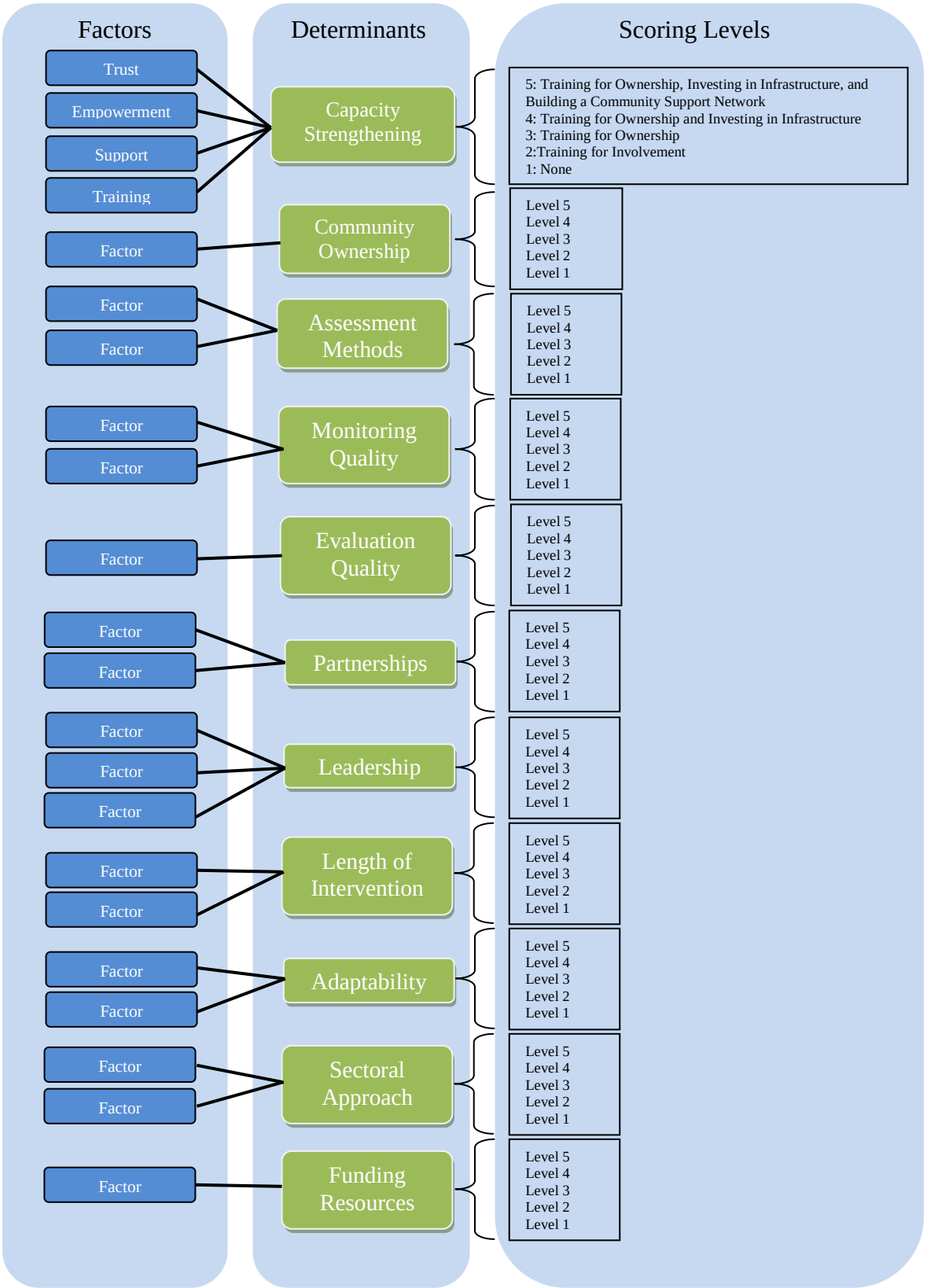
Primary Search Terms	**Expansion Search Terms**
Aid Effectiveness	Adaptability And Sustainability
Degrees Of Sustainability	Assessment And Sustainability
Measurement Of Sustainability	Capacity Building And Sustainability
Sustainability	Capacity Strengthening And Sustainability
Sustainability Factors	Community Input And Sustainability
Sustainable - Definition	Community Involvement And Sustainability
Sustainable Benefits	Community Ownership And Sustainability
Sustainable Community Development	Community Participation And Sustainability
Sustainable Community Health	Decentralization And Sustainability
Sustainable Development	Evaluation And Sustainability
Sustainable Development - Definition	Flexibility And Sustainability
Sustainable Impact	Funding And Sustainability
Sustainable International Development	Health Care And Sustainability
	Integration And Sustainability
	Leadership And Sustainability
	Monitoring And Evaluation And Sustainability
	Monitoring And Sustainability
	Multiple Sectors And Sustainability
	Multisector And Sustainability
	Partnerships And Sustainability
	Resources And Sustainability
	Support And Sustainability
	Trust And Sustainability

The reference list from each relevant article was examined to identify additional relevant literature. Authors of relevant literature identified in these searches were also entered as search terms in NCBI's PubMed to identify other pertinent works by these authors. The results of each of these searches were examined and included or excluded in the literature review based upon relevance to the study.

Evaluation Framework:

An evaluation framework was developed by consolidating individual factors that were identified in the literature as related to sustainability of benefits, into determinants. The literature also noted inter-factor relationships. These relationships were used to consolidate related factors into broader determinants. Each determinant was then subdivided into five scoring levels based upon information in the literature that related higher and lower strength correlations of the factors to sustainability of benefits. A diagram explaining the factors, determinants, and scoring levels can be found in Figure 2; only the first level has been filled in completely for demonstration purposes.

Figure 2: Differentiation of Factors, Determinants of Sustainability and Scoring Levels.



Explanation of Determinants:

The following are in-depth descriptions of each of the broad determinant inclusions.

Community Ownership:

Community Ownership was evaluated by the level of input, control, and responsibility that community members had over the processes of decision-making, intervention design, planning, monitoring, evaluation, and the normal operating activities of interventions. The more responsibilities and control governed by the members of the community, the higher the score received. Factors included in Community Ownership are listed in Table 3.

Table 3: Factors Included in Community Ownership

Community Decision-Making
Community Design
Community Evaluation
Community Implementation
Community Input
Community Monitoring
Community Responsibility

Capacity Strengthening:

Capacity Strengthening was evaluated by the presence and depth of the investment an intervention made in strengthening the capacity of the community to be self-reliant, as well as by the intervention's capability to increase the capacity of infrastructure to sustainably provide services to beneficiaries. Additionally, capacity strengthening was evaluated by the presence or absence of an investment in community support networks for beneficiaries. Factors included in Capacity Strengthening are listed in Table 4.

Table 4: Factors Included in Capacity Strengthening

Empowerment
Infrastructure Improvements
Self-Reliance
Support
Training
Trust

Assessment Methods:

Assessment Methods were evaluated according to who designed the assessment tools used and who conducted the assessment activities. The design of assessment tools included choosing the format of assessments (focus groups, door to door surveys, interviews, etc.), designing the questions to be asked, selecting target populations, selecting who conducted assessments, timing, selection of respondents, and design of contextual considerations. Conduction of assessment activities included dissemination of materials for assessment, obtaining the data, and cleaning of the data. Interventions that gave these responsibilities to community members scored higher than those that kept these responsibilities for the personnel of the implementing organizations. Factors included in Assessment Methods are listed in Table 5.

Table 5: Factors Included in Assessment Methods

Conduct of Assessment
Design of Assessment Tools

Monitoring Quality:

Monitoring Quality was evaluated by the frequency, timing, and the length of time monitoring continued after the end of the intervention, specifically if monitoring extended to five years or more following completion of the intervention. Monitoring that extended five years or more beyond the completion date and allowed for the assessment of sustainability of benefits

scored higher than shorter and lower-frequency monitoring efforts. Continual monitoring scored higher than periodic monitoring and assessments that only occurred at the initiation and completion of the intervention. Factors included in Monitoring Quality are listed in Table 6.

Table 6: Factors Included in Monitoring Quality

Frequency of Monitoring
Length of Monitoring
Timing of Monitoring

Evaluation Quality:

Evaluation quality was assessed by who completed the intervention evaluations and what factors they evaluated. Higher scores were given to interventions that were evaluated by independent third party evaluators or by the intended beneficiaries. Interventions that included sustainability of benefits, in addition to goal performance and impact, in evaluations scored higher those that did not include sustainability of benefits in their evaluations. Factors included in Evaluation Quality are listed in Table 7.

Table 7: Factors Included in Evaluation Quality

Community Evaluation
Goal Evaluation
Impact Evaluation
Independent Evaluation
Self-Evaluation
Sustainability Evaluation

Partnerships:

Partnerships were evaluated by the number, variety, and quality of partners affiliated with an intervention. Higher scores were given for those with a higher number of partners, a wider variety of partners and higher quality partners. Variety was evaluated by the ratio of foreign partners to domestic partners and by the types of partners (NGO, faith-based, private, etc.).

Quality of partners was evaluated upon partner strength and commitment to the target population. Factors included in Partnerships are listed in Table 8.

Table 8: Factors Included in Partnerships

Domestic Partners
Foreign Partners
Number of Partners
Partner Commitment
Partner Strength
Partner Variety

Leadership:

Leadership was evaluated by the presence or absence of a single strong "Champion," whether that "Champion" had regular contact with the beneficiaries, and regarding the ability of that "Champion" to communicate with supporting staff, partners, and beneficiaries. Leadership was also evaluated by the quality of supporting staff and whether or not a replacement "Champion" was being trained to continue leading in the event of departure of the existing "Champion." Factors included in Leadership are listed in Table 9.

Table 9: Factors Included in Leadership

Champion
Communication
Leader Replacement
Leadership Visibility
Supporting Staff

Length of Intervention:

Length of Intervention was evaluated by the length of time invested in intervention efforts. The evaluation included whether or not an intervention was open-ended or had a set completion date. The longer an intervention was active, the higher the score. Highest scores

were given to interventions that were open-ended and were active for 20 years or more. Factors included in Length of Intervention are listed in Table 10.

Table 10: Factors Included in Length of Intervention

Length of Intervention
Open-Ended

Adaptability:

Adaptability was evaluated by the level of restrictions placed upon intervention activities and personnel by donors, as well as the willingness and ability of intervention personnel to adapt to changing operating environments, failures, and opportunities for improvement that were identified by monitoring activities and evaluations. In order to make informed decisions regarding adaptations, interventions must have had solid foundations in the form of high-quality monitoring activities and evaluations that were capable of identifying changing operating environments, failures, and opportunities for improvement. Factors included in Adaptability are listed in Table 11.

Table 11: Factors Included in Adaptability

Donor Conditions
Failures
Freedom from Donors
Monitoring Quality

Sectoral Approach:

Sectoral Approach was evaluated by the extent of an intervention's engagement with a target population across multiple sectors. Higher scores were given to interventions that provided primary health care services alongside complementary development activities that served as preventive care efforts. The primary health care activities were also evaluated for

being decentralized versus central, with higher scores given to those interventions that were decentralized. Development interventions that spanned multiple sectors were given higher scores than single-sector development interventions. Factors included in Sectoral Approach are listed in Table 12.

Table 12: Factors Included in Sectoral Approach

Curative and Preventive
Decentralization
Health Promotion
Integrated Health and Development
Multiple-Sector
Primary Health Care
Single-Sector

Funding Resources:

Funding Resources was evaluated by which entity provided seed funding and by which entity provided the funding for ongoing activities related to an intervention. The higher the proportion of funding provided by community members the higher the score an intervention received. Interventions that were entirely donor funded or only received community funding in the form of cost-recovery mechanisms received lower scores. Factors included in Funding Resources are listed in Table 13.

Table 13: Factors Included in Funding Resources

Seed Funding
Donor Funding
Ongoing Costs
Community Funding

Framework Table:

Utilizing the data regarding determinants of sustainability found in the literature, a framework was developed for the collection of data (Table 14).

Table 14: Unpopulated Evaluation Framework.

	Levels of Sustainability Level 1=Least Sustainable, Level 5=Most Sustainable				
Determinant	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Community Ownership	Level 1	Level 2	Level 3	Level 4	Level 5
Capacity Strengthening	Level 1	Level 2	Level 3	Level 4	Level 5
Assessment Methods	Level 1	Level 2	Level 3	Level 4	Level 5
Monitoring Quality	Level 1	Level 2	Level 3	Level 4	Level 5
Evaluation Quality	Level 1	Level 2	Level 3	Level 4	Level 5
Partnerships	Level 1	Level 2	Level 3	Level 4	Level 5
Leadership	Level 1	Level 2	Level 3	Level 4	Level 5
Length of Intervention	Level 1	Level 2	Level 3	Level 4	Level 5
Adaptability	Level 1	Level 2	Level 3	Level 4	Level 5
Sectoral Approach	Level 1	Level 2	Level 3	Level 4	Level 5
Funding Resources	Level 1	Level 2	Level 3	Level 4	Level 5

Respondent Selection:

A wide variety of organizations, programs, and projects identified by the literature were contacted or information regarding their activities was gathered from recent literature to assess their ranking of the framework components. At minimum, one of each type of intervention examined in the literature was included in the evaluation. Respondents were eliminated from the study if the information available was insufficient to evaluate each component within the framework or to make comparisons with other respondents. A total of forty (40) respondents were selected for inclusion within this evaluation. Organizations participating in this research are listed alphabetically in Appendix A. In consultation with the Thesis Advisor, the author decided that the impact of this thesis would be increased by anonymity of the individual respondents. A codified list of the respondents was maintained by the author.

Data Collection for Evaluation:

The information used to evaluate each of the respondents included in the evaluation framework was obtained from one of several sources, including:

1. Research made publicly available on the internet or through scientific journals,
2. The results of monitoring efforts or evaluations made publicly available by the respective organization, and
3. Information obtained by telephone or email.

If specific information was not available for public use, permission was obtained from the respective organization's representatives via phone, writing, or email.

Data Analysis:

The resulting data from the framework were analyzed using EpiInfo 3.5.4, a set of free statistical analysis software tools provided by the United States Centers for Disease Control and Prevention (CDC) at their website http://www.cdc.gov/epiinfo.

Chapter 4: Results

Evaluation Framework Components:

The literature identified numerous factors that contribute to the sustainability of benefits. These factors were consolidated into eleven determinants which were included in the presented evaluation framework (Table 6) by which an organization, program, or project can be evaluated for the probability of sustained benefits. The Total Score produced by the presented evaluation framework predicts the probability that intervention-produced benefits will be sustained for five or more years after the intervention has ended. The determinants identified in the review of the literature are listed in Table 15.

Table 15: List of Determinants of Sustainability.

Community Ownership
Capacity Strengthening
Assessment Methods
Monitoring Quality
Evaluation Quality
Partnerships
Leadership
Length of Intervention
Adaptability
Sectoral Approach
Funding Resources

Each of these determinants was divided into five scoring levels using demarcations identified in the literature. The eleven determinants and their respective scoring levels were used to develop the evaluation framework in Table 16. Respondents receive points based upon the level for which their intervention(s) meet the requirements. A respondent that meets the Community Ownership requirements for Level 5 receives 5 points, while a respondent that only meets the requirements for Level 3 receives 3 points, and so forth.

Table 16: Framework For the Evaluation of the Probability That Intervention-Produced Benefits Will Be Sustained For Five or More Years After the End of the Intervention.

	Levels of Sustainability Level 1=Least Sustainable, Level 5=Most Sustainable				
Determinant	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Community Ownership	None	Community Approval Sought, or involved in Cost Recovery	Community has input in, but not given decision-making responsibility	Community has decision-making capability, but assistance is provided	Community makes decisions, runs planning, implementation, assessment, and ongoing activities
Capacity Strength-ening	None	Training Individuals for involvement	Training Individuals for ownership	Training individuals for ownership and investing in infrastructure	Training individuals for ownership, investing in infrastructure, and investing in support networking
Assessment Methods	None	Test, survey, and interview questions designed by implementing organization and data collection conducted by implementing organization	Test, survey, and interview questions designed by implementing organization, data collection conducted by the community	Test, survey, and interview question design shared, data collection conducted by community	Test, survey, and interview questions designed by the community and data collection conducted by community
Monitoring Quality	Initial and final evaluation at start and end of intervention	Initial, final and periodic (at important intervention dates) monitoring	Constant monitoring throughout the life of the intervention	Constant monitoring throughout the life of the intervention and post-intervention for less than five years	Constant monitoring throughout the life of the intervention and post-intervention for five years or more
Evaluation Quality	None	Self evaluations for goal achievement and impact	Independent third party evaluations for goals and impact	Independent third party evaluations for goals, impact, and sustainability	Independent third party evaluations and community evaluations for goals, impact and sustainability

Partner-ships	A single partner organization without long-term commitment to the community	Multiple partnerships without long-term commitment to the community, mostly foreign partners	Multiple partnerships with at least one domestic and a long-term commitment to the community	Multiple partnerships with long-term commitment to the community, at least one with strength, and at least one domestic	Large network of strong partnerships at multiple levels, foreign and domestic with long-term commitments
Leadership	No clear "Champion", not visible to the beneficiaries, lack of communication, no replacement	Single "Champion", good communication, not visible, no replacement, lacks support leadership	Single "Champion", visible to the beneficiaries, good communication, lacks support leadership and no replacement	Single "Champion", good support leadership, visible to the beneficiaries, good communication, no replacement	Single "Champion" with good support leadership, good communication, visible to the beneficiaries, trains replacement
Length of Intervention	Short-term, 6 weeks or less	Short-term, 6 months or less	Medium length, 6 months to 5 years	Long- term, 5-20 years	Open ended, long-term, sometimes 20-40 years
Adaptability	None	Freedom from Donor Restrictions	Culture of adaptability in program	Freedom from Donor restrictions and culture of adaptability	Freedom from Donor restrictions, culture of adaptability and Assessment to inform adaptation
Sectoral Approach	Single-sector development Intervention	Centralized Primary Health Care	Multiple Sector development interventions	De-centralized Primary Health Care	Decentralized Primary Health care and Multiple Sector Development Interventions
Funding Resources	Fully funded externally: grants, donors,	Partially funded by cost-recovery mechanisms (pay for service, etc.)	Seed money funded externally with transition throughout program to local funding of ongoing costs	Seed money funded externally, ongoing costs funded locally	Seed money and ongoing costs funded locally

Evaluation:

Fifty (50) organizations, programs, and projects were either contacted with a request to be included in this evaluation or information about their interventions activities were found in the literature; eighty percent (40/50) are included in these results, twenty percent (10/50) declined to be included. Each included respondent was randomly assigned a code; their identifying information was removed and maintained in a separate document to provide anonymity. These respondents were then assessed on a scale of 1 to 5 for level of sustainability in eleven determinants using the framework in Table 16. The results were recorded, displayed, and ranked by Total Score in Table 17.

Table 17: Anonymous Evaluation of the Probability That Intervention-Produced Benefits Will Be Sustained For Five or More Years Post-Intervention, Number of Respondents = Forty (40).

			Determinant Score											
	Code Number	Rank	Community Ownership	Capacity Strengthening	Assessment Methods	Monitoring Quality	Evaluation	Partnerships	Leadership	Length of Intervention	Adaptability	Sectoral Approach	Funding Resources	Total Score
Very High Probability of Sustainability	4	1	5	5	5	5	5	5	4	5	5	5	4	53
	18	2	5	5	5	5	5	4	4	5	5	5	4	52
	16	3	5	5	5	4	4	5	4	5	5	4	4	50
	6	4	4	5	4	5	5	5	4	5	4	5	2	48
	7	5	5	4	5	4	5	3	3	5	5	5	4	48
	9	6	5	5	5	3	5	4	4	5	4	3	5	48
	26	7	5	5	5	4	5	5	5	5	3	1	4	47
	32	8	4	5	5	4	5	5	4	5	3	5	2	47

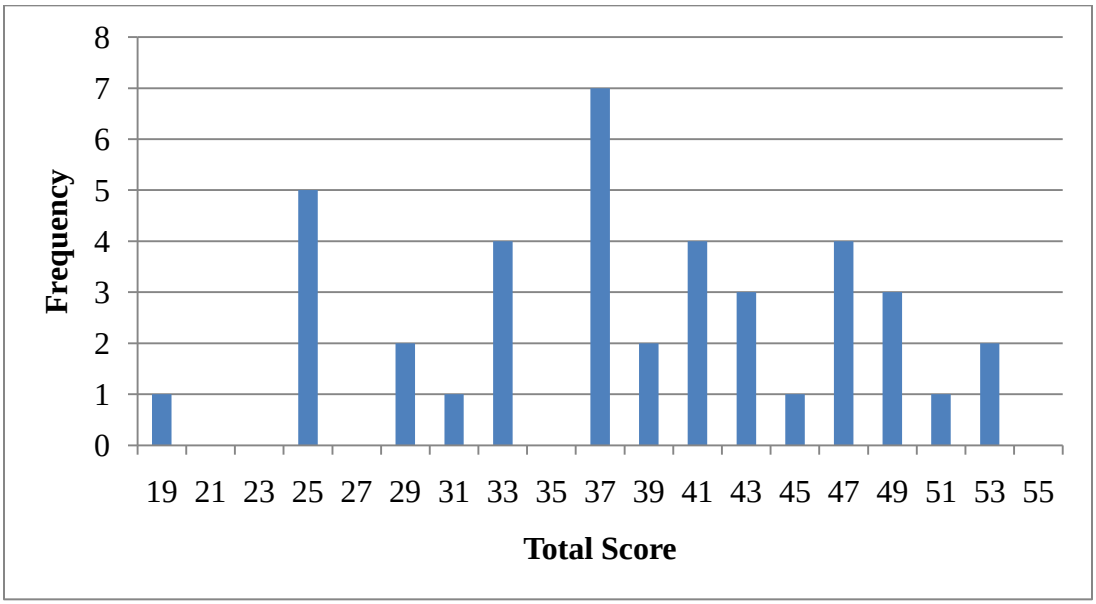
High Probability of Sustainability	13	9	3	5	4	5	5	5	5	5	3	4	2	46
	14	10	5	5	5	4	5	4	1	5	5	3	4	46
	8	11	4	5	4	4	4	5	4	5	3	4	2	44
	17	12	4	5	3	4	4	5	5	4	3	3	3	43
	30	13	5	2	5	5	5	1	1	4	5	5	5	43
	27	14	4	5	4	3	2	3	4	5	4	5	3	42
	19	15	5	3	4	4	3	3	2	5	5	3	4	41
	28	16	4	4	5	4	5	4	3	3	3	3	3	41
	3	17	4	5	4	4	2	3	3	5	4	3	4	41
	35	18	3	3	4	5	4	5	2	4	3	4	3	40
	2	19	4	4	3	4	2	3	4	4	4	3	4	39
	24	20	4	5	4	4	4	4	1	3	5	1	3	38
Moderate Probability of Sustainability	23	21	3	4	3	5	4	4	3	3	3	1	4	37
	12	22	3	4	3	3	2	4	4	5	3	4	2	37
	29	23	3	4	3	4	4	3	3	3	3	3	4	37
	31	24	4	4	3	4	5	5	1	3	3	4	1	37
	10	25	4	4	3	4	2	2	3	5	4	3	4	37
	34	26	4	4	3	4	3	5	3	3	3	3	2	37
	38	27	3	5	3	4	2	3	1	5	4	3	3	36
	1	28	4	4	2	2	2	3	4	4	4	1	3	33
	15	29	4	3	3	3	3	3	1	3	3	3	3	32
	5	30	4	4	3	3	2	1	3	3	4	1	4	32
	36	31	3	3	3	3	2	2	3	4	3	4	2	32
	40	32	4	5	5	2	2	2	1	4	4	3	3	30
	21	33	3	2	3	3	3	3	1	3	3	3	2	29
Low Probability of Sustainability	20	34	2	3	3	2	3	3	3	3	3	1	2	28
	25	35	2	2	2	4	2	1	1	4	1	4	2	25
	22	36	1	4	2	3	2	1	1	4	3	2	2	25
	33	37	3	2	2	3	2	2	2	3	1	3	2	25
	39	38	2	2	2	2	3	3	1	4	3	1	2	25
	37	39	4	4	2	2	2	3	1	2	3	2	1	24
	11	40	2	1	2	1	2	2	2	3	2	1	1	19

The potential maximum Total Score for any respondent was 55 (11 times 5). The maximum respondent Total Score is 53, the respondent mean Total Score is 37.85, the minimum

respondent Total Score is 19, and the standard deviation is 8.637. Determinants with the highest means are Length of Intervention (Mean of 4.080) and Capacity Strengthening (Mean of 3.950). Determinants with the lowest means are Leadership (Mean of 2.730) and Funding Resources (Mean of 2.950).

Results approximate a normal curve with a left skew of -0.258 (Figure 3).

Figure 3: Distribution and Frequency of Respondent Total Scores, Number of Respondents = Forty (40), Maximum Possible Score = Fifty-Five (55).



Summary data for all forty (40) included respondents are displayed in Table 18.

Table 18: Evaluation Summary Statistics, Number of Respondents = Forty (40).

Determinant	Mean	Std. Deviation	Median	Mode	Min	Max
Length of Intervention	4.080	0.917	4	5	2	5
Capacity Strengthening	3.950	1.131	4	5	1	5
Community Ownership	3.730	1.012	4	4	1	5
Monitoring Quality	3.630	1.005	4	4	1	5
Assessment Methods	3.580	1.083	3	3	2	5
Adaptability	3.530	1.012	3	3	1	5
Evaluation Quality	3.400	1.277	3	2	2	5
Partnerships	3.400	1.297	3	3	1	5
Sectoral Approach	3.100	1.336	3	3	1	5
Funding Resources	2.950	1.085	3	4	1	5
Leadership	2.730	1.358	3	1	1	5
Total	37.850	8.637	37.5	37	19	53

Epi Info was used to identify correlations between Determinant Ratings and Total Scores. The following correlation strength levels were used:

- Very Strong: 0.9-1.0
- Strong: 0.7-0.9
- Moderate: 0.4-0.7
- Weak: 0.2-0.4
- Very Weak: 0.0-0.2

All determinants had “moderate” or “strong” correlation with Total Score. Those determinants with the “strongest” correlations to Total Score are Assessment Methods (0.8316), Community Ownership (0.7517), Evaluation Quality (0.7402), and Monitoring Quality (0.7320). A summary of correlation coefficients is displayed in Table 19.

Table 19: Correlation of Determinant Scores to Total Score, Number of Respondents = Forty (40).

Determinant	Correlation Coefficient with Total Score
Assessment Methods	0.8316
Community Ownership	0.7517
Evaluation Quality	0.7402
Monitoring Quality	0.7320
Capacity Strengthening	0.6895
Length of Intervention	0.6783
Partnerships	0.6510
Adaptability	0.6280
Leadership	0.6039
Sectoral Approach	0.5747
Funding Resources	0.5739

Stratification:

The results of the evaluations were ranked by Total Score and stratified for analysis to make stronger comparisons between those respondents that had high Total Scores and those respondents with low Total Scores. Stratification was determined by standard deviations above or below the arithmetic mean. Strata divisions were at +3.0, +1.0, -1.0, and -3.0 standard deviations. All results for Total Score were within 3.0 standard deviations above or 3.0 standard deviations below the arithmetic mean of the forty (40) respondents evaluated. The strata are displayed in Table 17 and summary data are included in Table 20. The strata were given the following designations to clarify what they represent:

Stratum 1 = Respondents with a “Very high probability of sustainability”

Stratum 2 = Respondents with a “High probability of sustainability”

Stratum 3 = Respondents with a “Moderate probability of sustainability”

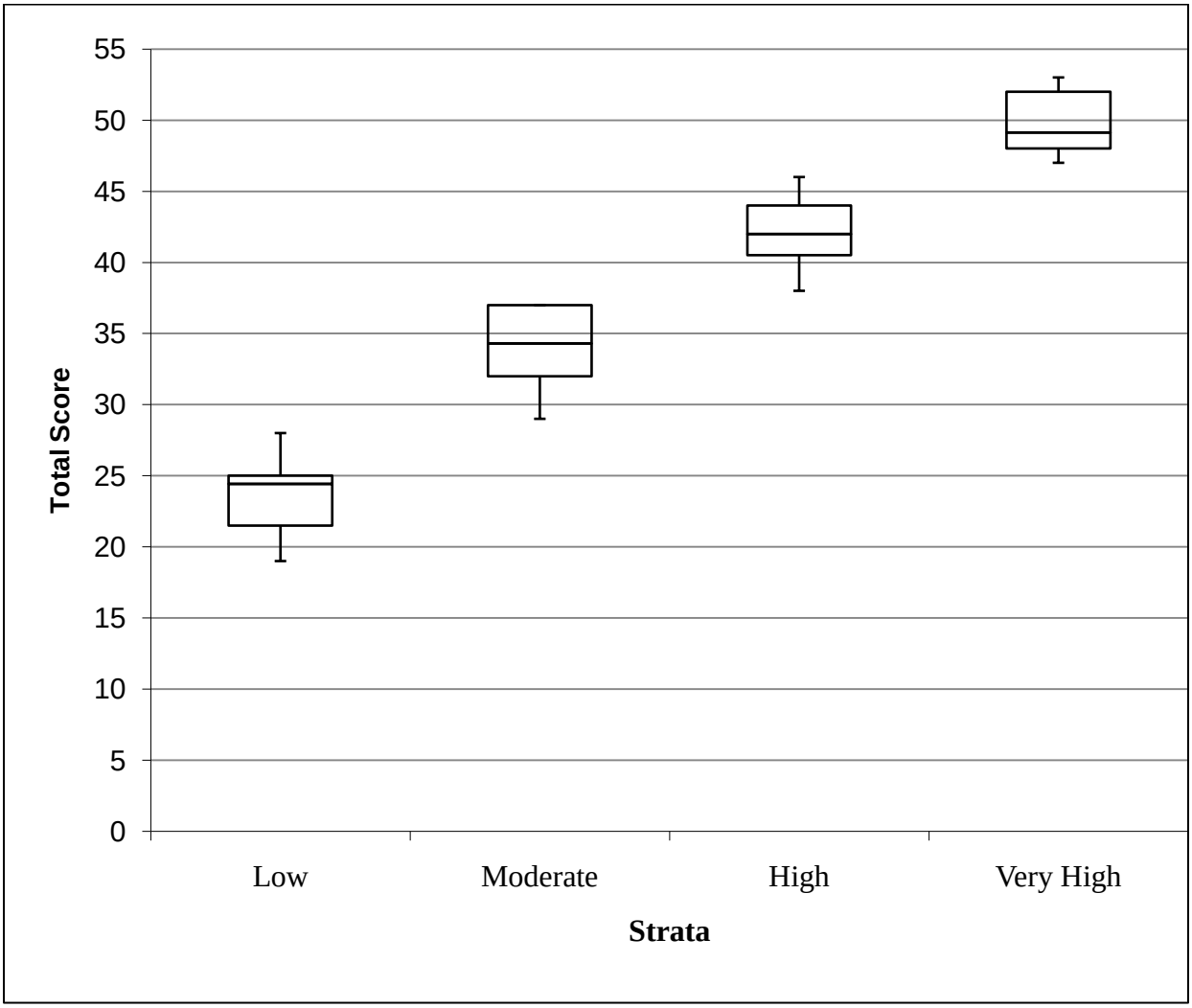
Stratum 4 = Respondents with a “Low probability of sustainability”

Table 20: Total Score by Stratum, Number of Respondents = Forty (40).

Stratum	Mean	Std. Deviation	Median	Mode	Min	Max
1. Very high probability of sustainability	49.125	2.295	48	48	47	53
2. High probability of sustainability	42.000	2.523	41.5	41	38	46
3. Moderate probability of sustainability	34.308	3.038	36	37	29	37
4.Low probability of sustainability	24.429	2.699	25	25	19	28

The distribution of Total Score for each of the four strata is displayed in Figure 4.

Figure 4: Distribution of Total Score by Strata.



Stratum 1: Very high probability of sustainability

Stratum 1 contains those respondents with a designation of "very high probability of sustainability." These respondents have a Total Score between +1.0 standard deviation and +3.0 standard deviations above the arithmetic mean of the forty respondents evaluated. Summary data for these respondents are displayed in Table 21.

Table 21: Descriptive Statistics for Respondents Designated "Very High Probability of Sustainability," Number of Respondents = Eight (8).

Determinant	Mean	Std. Deviation	Median	Mode	Min	Max
Length of Intervention	5.000	0.000	5	5	5	5
Capacity Strengthening	4.875	0.354	5	5	4	5
Assessment Methods	4.875	0.354	5	5	4	5
Evaluation Quality	4.875	0.354	5	5	4	5
Community Ownership	4.750	0.463	5	5	4	5
Partnerships	4.500	0.756	5	5	3	5
Adaptability	4.250	0.886	4.5	5	3	5
Monitoring Quality	4.250	0.707	4	4	3	5
Sectoral Approach	4.125	1.458	5	5	1	5
Leadership	4.000	0.535	4	4	3	5
Funding Resources	3.625	1.061	4	4	2	5
Total Score	49.125	2.295	48	48	47	53

All respondents that have a "very high probability of sustainability" earned a score of 5 for Length of Intervention. These respondents also scored greater than three for all determinants except Sectoral Approach and Funding Resources which had minimum scores of 1 and 2 respectively. Leadership (Mean of 4.000) and Funding Resources (Mean of 3.625) are the lowest determinant means recorded for these respondents. Length of Intervention (Mean of 5.000), Capacity Strengthening (Mean of 4.875), Assessment Methods (Mean of 4.875), and Evaluation Quality (Mean of 4.875) are the highest means recorded for those respondents that have a "very high probability of sustainability." These respondents also have the lowest Total Score Standard Deviation of all four strata (Standard Deviation of 2.295).

Stratum 2: High probability of sustainability

Stratum 2 contains those respondents that have a "high probability of sustainability." These respondents have a Total Score between the arithmetic mean and +1.0 standard deviation above the arithmetic mean of the forty respondents evaluated. Summary data for respondents that have a "high probability of sustainability" are displayed in Table 22.

Table 22: Descriptive Statistics for Respondents Designated "High Probability of Sustainability," Number of Respondents = Twelve (12).

Determinant	Mean	Std. Deviation	Median	Mode	Min	Max
Length of Intervention	4.330	0.778	4.5	5	3	5
Capacity Strengthening	4.250	1.055	5	5	2	5
Monitoring Quality	4.170	0.577	4	4	3	5
Community Ownership	4.080	0.669	4	4	3	5
Assessment Methods	4.080	0.669	4	4	3	5
Adaptability	3.920	0.900	4	3	3	5
Evaluation Quality	3.750	1.215	4	5	2	5
Partnerships	3.750	1.215	4	5	1	5
Sectoral Approach	3.420	1.084	3	3	1	5
Funding Resources	3.330	0.888	3	3	2	5
Leadership	2.920	1.505	3	1	1	5
Total	42.000	2.523	41.5	41	38	46

Determinants with the highest means for those respondents that have a "high probability of sustainability" are Length of Intervention (Mean of 4.330) and Capacity Strengthening (Mean of 4.250). Determinants with the lowest means for those respondents that have a "high probability of sustainability" are Leadership (Mean of 2.920) and Funding Resources (Mean of 3.330). Respondents that have a "high probability of sustainability" collectively achieved at least one score of 5 for each determinant in the framework.

Stratum 3: Moderate probability of sustainability

Stratum 3 contains those respondents that have a "moderate probability of sustainability." These respondents have a Total Score between the arithmetic mean and -1.0 standard deviation below the arithmetic mean of the forty respondents evaluated. Summary data for respondents that have a "moderate probability of sustainability" are displayed in Table 23.

Table 23: Descriptive Statistics for Respondents Designated "Moderate Probability of Sustainability," Number of Respondents = Thirteen (13).

Determinant	Mean	Std. Deviation	Median	Mode	Min	Max
Capacity Strengthening	3.846	0.801	4	4	2	5
Length of Intervention	3.692	0.855	3	3	3	5
Community Ownership	3.538	0.519	4	4	3	4
Adaptability	3.385	0.506	3	3	3	4
Monitoring Quality	3.385	0.870	3	3	2	5
Assessment Methods	3.077	0.641	3	3	2	5
Partnerships	3.077	1.188	3	3	1	5
Funding Resources	2.846	0.987	3	4	1	4
Evaluation Quality	2.769	1.013	2	2	2	5
Sectoral Approach	2.769	1.092	3	3	1	4
Leadership	2.385	1.193	3	3	1	4
Total	34.308	3.038	36	37	29	37

Determinants with the highest means for those respondents that have a "moderate probability of sustainability" are Length of Intervention (Mean of 3.692) and Capacity Strengthening (Mean of 3.846). Determinants with the lowest means for those respondents that have a "moderate probability of sustainability" are Leadership (Mean of 2.385), Sectoral Approach (Mean of 2.769), and Evaluation Quality (Mean of 2.769). A maximum rating of 5 is recorded in 6/11 determinants. These respondents have the highest Total Score Standard Deviation of all four strata (Standard Deviation of 3.038).

Stratum 4: Low probability of sustainability

Stratum 4 contains those respondents with a designation of "low probability of sustainability." These respondents have a Total Score between -1.0 standard deviation and -3.0 standard deviations below the arithmetic mean of the forty respondents evaluated. Summary data for those respondents that have a "low probability of sustainability" are displayed in Table 24.

Table 24: Descriptive Statistics for Respondents Designated "Low Probability of Sustainability," Number of Respondents = Seven (7).

Determinant	Mean	Std. Deviation	Median	Mode	Min	Max
Length of Intervention	3.286	0.756	3	3	2	4
Capacity Strengthening	2.571	1.134	2	2	1	4
Monitoring Quality	2.429	0.976	2	2	1	4
Community Ownership	2.286	0.951	2	2	1	4
Evaluation Quality	2.286	0.488	2	2	2	3
Adaptability	2.286	0.951	3	3	1	3
Assessment Methods	2.143	0.378	2	2	2	3
Partnerships	2.143	0.900	2	3	1	3
Sectoral Approach	2.000	1.155	2	1	1	4
Funding Resources	1.714	0.488	2	2	1	2
Leadership	1.571	0.787	1	1	1	3
Total	24.429	2.699	25	25	19	28

Determinants with the lowest means for those respondents that have a "low probability of sustainability" are Leadership (Mean of 1.571) and Funding Resources (Mean of 1.714). Determinants with the highest means for those respondents that have a "low probability of sustainability" are Length of Intervention (Mean of 3.286) and Capacity Strengthening (Mean of 2.571). No ratings of 5 are recorded for any determinant among those respondents that have a "low probability of sustainability". The maximum score of any respondent that has a "low probability of sustainability" in the determinant of Funding Resources is 2. The maximum score

for these respondents in Assessment Methods, Evaluation Quality, Partnerships, Leadership, and Adaptability is 3.

Stratification Correlation:

Epi Info was used to identify correlations between the score a respondent received in a determinant and that respondent's final strata placement. All determinants had moderate or strong correlation with final stratification. Those determinants with the strongest correlations to strata placement are 1. Assessment Methods (Mean of 0.8632), 2. Community Ownership (Mean of 0.7699), and 3. Evaluation Quality (Mean of 0.7060). A summary of correlation coefficients is displayed in Table 25.

Table 25: Correlation of Determinant Score to Strata Placement, Number of Respondents = Forty (40).

Determinant	Correlation Coefficient with Strata Placement
Assessment Methods	0.8632
Community Ownership	0.7699
Evaluation Quality	0.7060
Length of Intervention	0.6472
Capacity Strengthening	0.6280
Monitoring Quality	0.6270
Adaptability	0.6248
Partnerships	0.5976
Leadership	0.5737
Funding Resources	0.5615
Sectoral Approach	0.5290

Other Findings:

An analysis of each determinant was conducted to identify important differences among strata. Within the determinants of Capacity Strengthening and Funding Resources, the difference in the means of those respondents that have a "low probability of sustainability" and those

respondents that have a “moderate probability of sustainability” is noticeably larger than the difference in the means of other respondent strata. Within the determinants of Evaluation Quality, the difference in the means of those respondents that have a “low probability of sustainability” and those respondents that have a “moderate probability of sustainability” is noticeably smaller than the difference in the means of other respondent strata. Within the determinant of Monitoring Quality, the difference in the means of those respondents that have a “high probability of sustainability” and those respondents that have a “very high probability of sustainability” is noticeably smaller than the difference in the means of other respondent strata. For the determinant of Adaptability, the variations in the means of the strata follow an exponential curve. However, the low sample sizes of the strata did not allow for evaluation of the significance of these differences.

Chapter 5: Discussion

This paper utilized a literature search and review to synthesize information on determinants of sustainability of benefits. The results of that synthesis demonstrate that several determinants, including Community Ownership, Evaluation Quality, Capacity Strengthening, and Length of Intervention are strongly associated with sustainability. These results suggest that the potential for the transformation of the developing world rests more in the hands of the local population than the approaches of many development efforts reflect.

Within the presented framework, an evaluation of correlation between determinants and respondent Total Score indicates that Assessment Methods, Community Ownership, Evaluation Quality, and Monitoring Quality "strongly" ($r \geq 0.7000$) correlate with a high Total Score. This demonstrates the importance of these determinants in achieving a high potential for sustainability. The strength of these correlations suggests that these factors have an important role in directing the path of ongoing and future development efforts toward more sustainable activities.

Study respondents scored the highest in the Length of Intervention (Mean of 4.080) determinant. Length of Intervention was abnormally distributed with a strong right skew, and all respondents that have a "very high probability of sustainability" scored a 5 for their efforts being open-ended and at least 20 years or longer in length. Those respondents that have a "low probability of sustainability" recorded a Mean Length of Intervention score of 3.286, which is 0.715 higher than the Mean of any other determinant among those same respondents (Not Significant, $p > .05$). This demonstrates a strength among all respondents, and particularly among those respondents with a "low probability of sustainability." According to the literature, high scores for Length of Intervention allows for the freedom necessary to adapt, for an

improved opportunity to build mutual trust and respect, and for a greater opportunity to increase community ownership (Arole & Arole, 2003; Scheirer, 2013; Ashwell & Barclay, 2010). It is important to note that of the top-ten ranked respondents, 8/10 (80%) have been in operation for over 40 years and 10/10 (100%) are open-ended interventions. The top ten respondents Length of Intervention ranges from 25 years to 101 years.

Study respondents also scored highly for the determinant of Capacity Strengthening (Mean of 3.950), particularly among those respondents with a "very high probability for sustainability." This suggests that the relative importance of Capacity Strengthening is high. Respondents with a "low probability for sustainability" recorded a Capacity Strengthening Mean of 2.571, a difference of 1.275 below respondents with a "moderate probability for sustainability" (Capacity Strengthening Mean of 3.846) suggesting that this is a particularly weak determinant among low-scoring respondents (Not Significant $p > .05$). The analysis of this determinant reflects the nature of capacity strengthening; unlocking the potential of beneficiaries and providing the opportunity for them to take action for their own benefit increases the potential for those benefits gained by the community to be sustained. Arole and Arole (2003) demonstrated that one effect of Capacity Strengthening is an improved labor output and concern for the surrounding community, and several of the respondents that have a "very high probability for sustainability" included achievement of this effect among their goals or strategies.

Results of stratification within the determinant of Funding Resources reveal another weakness among low-scoring respondents. Respondents with a "low probability of sustainability" recorded a Funding Resources Mean of 1.714, a difference of 1.132 below respondents with a "moderate probability for sustainability" (Funding Resources Mean of 2.846) (Not Significant, $p > .05$). This result suggests that respondents with low Total Scores are

particularly weak in this determinant. Although respondents with low Total Scores rated very poorly for the determinant of Funding Resources, higher scoring respondents did not rate well in this determinant either. Funding Resources represents the second-lowest Mean of any determinant (Mean of 2.950), and Funding Resources was the only determinant in which respondents with a "very high probability of sustainability" had a Mean score of less than 4.000 (Mean: 3.625). The respondents' poor Funding Resources scores identify an opportunity for improvement, indicating a need for respondents to increase the level of funding provided through community channels and to decrease donor dependency.

Respondents scored the lowest in the determinant of Leadership (Mean of 2.730), with only one respondent among those with a "very high probability of sustainability", and three respondents total, receiving a score of 5. Literature indicates that the longer an intervention continues, the more important leadership becomes (Arole & Arole, 2003; Leffers & Mitchell, 2011). Leadership is important for maintaining adherence to intervention goals and direction, for maintaining a healthy operating environment through communication, and for regularly addressing intervention shortcomings. The importance of Leadership, coupled with the respondents' low scores, identifies another opportunity for improvement. Among respondents with a "very high probability of sustainability", only one respondent was actively preparing a replacement leader. Many of the respondents with a "very high probability of sustainability" had high-quality 'champions' at the time of the evaluation; however, there was not an individual prepared to continue leading the efforts should the 'champion' be removed from the intervention for unforeseen circumstances. If such a scenario were to arise, sustainability could potentially be jeopardized due to the instability and disorder that may surround the departure of a well-respected leader. One possible reason for the low leadership ratings overall, is that high-quality

leaders are needed within environments that demand high accountability. Literature reports that existing accountability in the development sector is uncommon and weak, and it may be possible that the weak leadership seen in development organizations is a result of the lack of perceived need.

There were several other interesting findings, none of which are significant due to sample size, but are also worth examining for the future. The difference in the means of Adaptability between strata follows an exponential pattern, suggesting that it is progressively more difficult to move upward among the strata. Also, there is little distinction between the scores for respondents with a "very high probability for sustainability" and those with "high probability of sustainability" for the determinant of Monitoring Quality, suggesting that the first steps in improving Monitoring Quality may be the most difficult to achieve. In comparison, there is little difference in the determinant Means of Evaluation Quality for respondents that have a "low probability of sustainability" and those respondents that have a "moderate probability of sustainability", indicating that the first steps to improving Evaluation Quality may be the easiest, but that further improvement may prove more difficult.

Limitations:

This study had a number of limitations, first and foremost was the subjectivity of several components. The determinants included in the framework were compiled from the research available in the literature; however, the author used personal judgment to consolidate multiple factors identified in the literature into the final determinants used. The author's judgment was also used, in conjunction with published research, for the determining the requirements of the five scoring levels within each determinant. The ratings for the forty respondents were based on

self-reported information and information available in published literature. The author recognizes that eleven determinants, and the five levels of each determinant, are not exclusively representative of every development organization, program, and project; the author used personal judgment to determine the best fit for final ratings.

Sample size limited the ability of the author to analyze the stratified data. After stratification, each subset of data (stratum) did not contain enough respondents to accurately determine the significance of the results of some analyses. The sample was also not representative of all development efforts; such an analysis was not within the scope of this paper. This may have affected the results of this study, particularly within the determinant of Length of Intervention. There were relatively few short-term interventions included in the study, a selection bias which may have contributed to the overall high score of respondents for Length of Intervention.

Length of Intervention, Monitoring Quality, Assessment Methods and Evaluation Quality results may also be affected by selection bias. Exclusion of respondents with insufficient data to evaluate sustainability may have selected for respondents with higher-quality monitoring and evaluation systems. If having low-quality monitoring or evaluation efforts prevents respondents from collecting sufficient data regarding their development efforts for inclusion in the study, there will be selection bias in the aforementioned determinants, artificially inflating respondent scores. Length of Intervention may also be affected by selection bias; short-term interventions may have a predisposition for less-robust monitoring efforts and evaluations. Length of Intervention may contain further bias, as this determinant was evaluated on "intended" Length of Intervention, as most respondent interventions are currently ongoing and cannot be evaluated on

"achieved" Length of Intervention. Respondents may in reality, fall short of the "intended" Length of Intervention, which would subsequently reduce their potential for sustainability.

Self-reporting of data is an important bias to recognize within this study. Respondents supplied the information regarding their development efforts to the author for inclusion in the study. Less than half of respondents (19/40 or 47.5%) included any data collected from independent evaluations and 0/40 (0%) provided data exclusively collected from independent evaluations. There is a strong likelihood that there is bias surrounding this information for several reasons. First, those organizations, programs, or projects unwilling to make their data available for evaluation may have chosen not to participate because the results may have been unfavorable, thus generating a selection bias for more sustainable respondents. Of those organizations, programs, and projects contacted or identified in the literature, 10/50 (20%) were unwilling to be a part of this study. Second, it is possible that a reporting bias exists as respondents are not likely to provide data that would generate a negative opinion of their work, potentially influencing the manner in which data was presented or what data was presented for inclusion in the evaluation.

Another important limitation to note is the qualitative nature of the research literature and the lack of quantitative data concerning the determinants employed in the framework and their link to sustainability. Many of the studies in the literature also failed to use standardized methods for qualitative research, making it difficult to assess the strength of some studies.

Recommendations:

In an effort to increase the impact per dollar derived from assistance funds, donors should evaluate interventions using available tools for their potential to sustain produced benefits and

use the resulting data to make informed decisions regarding allocations of funds. Specifically, interventions should be selected that shift ownership to local communities and empower them to address their present and future needs. Donors should increase demand for accountability by requiring higher-quality monitoring, improved monitoring methods, and higher-quality evaluations that include sustainability indicators.

Development organizations should seek to foster stronger internal leadership by developing a chain of succession and preparing those in the chain to lead. Attention should also be given to the diversification of funding sources, seeking first to engage in interventions that can be supported within the financial means of the beneficiaries, and to decrease dependence on donor funding. Making improvements in these two areas will also improve adaptability by providing freedom from donor restrictions and encouraging leadership to be adaptable.

Finally, the literature strongly supports combining decentralized primary healthcare with supporting development activities. It is important that organizations work to stay within the scope of their mission, but when possible, organizations should seek to couple curative care with preventive development efforts. If this is outside the scope of an organizations' mission, it may be prudent to seek partnerships toward this end. 6/10 (60%) of respondents that have a "very high probability for sustainability" were actively implementing a decentralized primary healthcare system coupled with preventive development efforts at the time of this evaluation.

It is important that large donors, such as USAID and the Bill and Melinda Gates Foundation, adopt policies regarding the expected level of attention that fund recipients should give toward maximizing their potential for sustainability. Organizations pursuing these improvements will rise to meet the expectations of donors, and in so doing, will help improve the progress rate of the development community. Additionally, a standard needs to be adopted

concerning the amount of time allowed to elapse after an intervention ends before sustainability is evaluated. The author recommends a minimum of five years for this standard. This would allow for appropriate comparisons of sustainability to be made between organizations and their development efforts.

In light of this study and the current literature, it is important to note that NGOs, Governments, and other institutions involved in the field of community development should critically evaluate their role in the development process, including what it has been and what research indicates that it should be. This study concludes that sustainability research is beginning to show that the appropriate role for development institutions is not the same as it has been historically, and if the interests of the marginalized, the ultra-poor, and the vulnerable are to be prioritized, the role of development work may be shifting.

Future Research:

The evaluation framework presented in this paper is representative of the literature available to the author at the time of writing. The presented framework reflects determinants with a high level of research and a general consensus regarding their link to sustainability. There are other determinants presented in the literature that may influence sustainability; however the author felt that the data regarding those factors was either inconclusive or insufficient to include in the presented framework at this time. Future research regarding these factors may elucidate additional determinants that contribute to sustainability which could be included in future, improved frameworks.

There is a great need for more quantitative research of determinants of sustainability of benefits, as well as for the varying levels within those determinants that could help further define

scoring levels for evaluation. Research on determinants that contribute to sustainability of benefits could be improved by evaluating these determinants across a larger number of interventions and examining their link to sustainability across a broader range of environments, whereas most current research extracts this information from isolated interventions. This would help improve the strength of this framework and future frameworks by refining evaluation determinants to more precisely predict sustainability of benefits.

It would be very useful to improve upon this research by conducting an evaluation of a larger sample size, designed to be a representative cross-section of development efforts. Using primary data on respondents collected by independent evaluation processes would also prove beneficial for more accurate evaluation. This could improve recommendations for changes needed among low-scoring respondents, better identify weaknesses within the field, and strengthen correlation data between each determinant and its potential for improving sustainability of benefits.

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Appendices:

Appendix A: Alphabetical Listing of Participating Organizations

We owe many thanks to the organizations that made their work available for this research. Without them, it would not be possible to assess the current state of the development community as pertains to sustainability, nor would it be possible to identify the progress, challenges, and opportunities that affect the future of sustainable development efforts. Thanks to these organizations we can make recommendations for best practices and future research in the field of international development. Individual organizations wishing to obtain their code may email the researcher at mattayersturner@gmail.com.

Organizations are listed alphabetically, followed by the number of programs or projects from the organization included in the evaluation.

- Aga Khan Development Network (1)
- Beyond Poverty (4)
- Bolivian Zero Malnutrition Program (1)
- BRAC (3)
- CARE (1)
- Center for Health Policy and Social Change Indonesia (1)
- Charity: Water (1)
- Family Health Project-Pakistan (1)
- Gates Foundation-AVAHAN (1)
- Ghanaian National Healthcare System (1)
- Global Humanitarian Outreach (1)
- Grace Chapel Denver (1)

- Grameen Bank (1)
- Habitat for Humanity Haiti (1)
- Heifer International (1)
- Hôpital Albert Schweitzer (1)
- ICDDRB (1)
- Indian National Dairy Development Board (1)
- Jamkhed CRHP (2)
- Living Water International (1)
- MaNHEP (1)
- One Hundred Days Kigali Pediatric Hospital (1)
- Partners In Health Haiti (2)
- Population and Community Development Association of Thailand (1)
- Saradidi Community Development (1)
- Sarvodaya (1)
- Save the Children (1)
- SEARCH Gadchiroli (1)
- SEWA (1)
- World Vision (1)
- ZANARA-CRAIDS (1)

Appendix B: Competing Interests

The author of this paper was employed by Beyond Poverty, Inc. at the time of writing. The employer was also a respondent included in this evaluation. The competing interest was controlled by the anonymity of the respondent scores.