THE CHANGING STRUCTURE OF RELATIONSHIPS BETWEEN FOREIGN AID AND LOCAL SYSTEMS

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ABSTRACT

This dissertation project examines the extent to which the interaction between the international aid and the public health systems in Thailand generates change in both systems by examining the Global Fund process over the last ten years. This research uses complexity science, network theory, and organizational collaboration literatures, taking Elinor Ostrom's institutional analysis and development framework as its theoretical foundation. The Global Fund is an action arena that bridges both the local public health action arena and the Thai foreign aid action arena. It creates structures that result in organizational interactions, program design and implementation, and program evaluations that feed back into both the local public health and foreign aid action arenas, resulting in change in both.

This project uses document analysis, network analysis and interviews conducted during fieldwork in Thailand to examine how interactions between organizations change the structure of relationships, organizational roles and influence and program outcomes. It finds that the Global Fund process results in network structural and substantive changes, including changes in density, development of sub-network structures and changes in participants and program focus. Through these changes, the process engenders positive adaptation within the public health sector in Thailand, by improving human, organizational and community capacity and by reaching previously underserved populations, and positive adaptation in the foreign aid system in Thailand through the changing the roles of these organizations, adapting from agenda setters to providers of technical assistance.

This study makes important contributions to the fields of complexity and systems, organizational collaboration and network theory. It finds that the bridging action arena creates and enhances relationships between organizational members, resulting in adaptation within the arenas it overlaps. The results are changes in the attributes of the community and the rules in which they operate within both systems. It also changes the material conditions of both the systems it overlaps. This study is an exploratory endeavor that seeks to expand the understanding of overlapping systems and contribute to theories surrounding this phenomenon. In the process of this research, theoretical questions emerged about the nature of these overlapping systems, about the participants within them, and about how they develop over time that will inform future research agendas.

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PREFACE

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1.0 THE PROBLEM OF OVERLAPPING SYSTEMS

The world consists of complex systems comprised of a large number of parts that have many interactions. These systems overlap in various ways and operate on local, national and international levels. Both public health and foreign aid are complex systems that are diverse, adaptive, and include sets of connected and interconnected organizations and agents. In addition, within developing countries, these systems are not well integrated, with interactions between foreign aid organizations and local public health organizations limited. Public health problems are complex and there is a growing understanding that they can be addressed only through collaboration and coordination between differentiated organizations, organizations that focus on disease prevention, care and treatment, research, education, and overall system strengthening. In order to accomplish this growing need for integration and collaboration to address these complex global health problems, local systems and foreign aid systems need to exchange knowledge and resources in more efficient and effective ways. Foreign aid actors often have the funding and technical expertise whereas local actors are accountable to and able to understand the needs of their populations. In the past, foreign aid systems and local systems operated side by side, with different agendas, goals and organizational participants and where there was evidence of increasing donor fragmentation and lack of learning over time (Easterly 2006).

Within this context, the Global Fund to Fight HIV/AIDs, Tuberculosis and Malaria (the Global Fund) introduced a different type of foreign aid, one that strives for decisions to be made

by a collective of stakeholders within recipient countries, focuses on results in combating three infectious diseases and looks to be transparent, accountable and participatory. In doing so, the Global Fund is bridging the public health and foreign aid systems in a country, operating in both, influenced by the conditions, culture, and rules that occur within these action arenas. Through the structure created by lending money and the process of resource exchange and knowledge sharing, the interactions, outcomes and evaluations feed back into both the local public health and foreign aid action arenas within a country. Optimally, the interactions and outcomes will change both arenas for the better, with both adapting to better serve clients and combat problems. Nonetheless, the Global Fund is attempting to bridge two different systems that have long standing relationships between organizations and where the changing power dynamics may result in organizational resistance. This may result in a culture of distrust and corruption, inhibiting collaboration and resulting in lack of positive adaptation.

The Global Fund finances programs in countries that have existing public health systems, where organizations may have relationships that are distrustful, particularly between public and private sectors and between beneficiaries and service providers. In addition, international organizations are already operating within these countries, pursuing their own agendas and often not integrated into the local public health systems. This research uses Thailand as a case study, a country which has a long history of strong government control of programs and policies, as well as discriminatory policies against those populations that are often most affected by these diseases (e.g. refugees, migrants, drug users). In addition, Thailand has a long history of a healthy civil society, which has both worked with and protested against the Thai government. The overarching theoretical question asks to what extent the interaction between the foreign aid and public health systems generates change in both systems. To answer this question, this research

examines other key questions: Have the relationships between the actors within the Global Fund process changed over time? To what extent have these relationships affected the foreign aid system and the public health system in Thailand? Is there evidence of learning over time? Does the network adapt over time to provide better services and address the complex health problems of Thailand? This research uses a mixed-method approach, including document analysis, network analysis and interviews to answer these questions.

1.1 THE CONFLICT BETWEEN FOREIGN AID AND LOCAL SYSTEMS

There exist fundamental conflicts between foreign aid systems and local systems. Organizations within these systems operate in the same geographic space yet do not interact in meaningful ways. Foreign aid systems and the actors within them are often accused of not understanding local context, funding for their own agenda and not for the betterment of a country, and committing only for short periods of time, rather than long term funding that would change systems. On the other hand, local systems are often seen as corrupt, inefficient and ineffective, non-democratic and exclusionary. Decision-makers within these systems operate on the international, national and local levels, with connections between these levels often lacking in transparency and accountability, resulting in a lack of understanding about where changes could be made to improve the functioning of the systems so they create better, more sustainable policies and programs.

Throughout the 20th century, the rationale for much of foreign aid was that, with enough funding, a society could be transformed from 'traditional' to 'modern' (Moore 1963, Apter 1965, Lerner 1958). The fundamental beliefs behind this theory are that developing countries are

'traditional', and if they only follow certain, linear steps they will be able to 'develop'. Modernization had an implicit moral justification of aid, that of transforming the traditional, 'backwards', society, into an advanced one (Moore 1963). Foreign aid systems and policies have often implicitly assumed a uniform path to 'development' and defined 'traditional values' as being the identifiable opposites of what are accepted as 'modern values' (Valenzuela and Valenzuela 1978). Some claim that foreign aid is a child of colonialism, in which 'developing' country people are given no agency by the west and are viewed as weak or treated as savages (Fanon 1967, Said 1978). These beliefs affect how the foreign aid systems interact with local systems, resulting in cultures of distrust and misunderstanding, which ultimately inhibit organizations ability to work together effectively.

In addition to the idea that 'orientalism' colors foreign aid policies, foreign aid is part of the donor country's foreign policy agenda, the 'carrot' to the military's 'stick' (Browne 1999, Hancock 1989, Tarnoff and Nowels 2004). Because of this, the agenda of foreign aid actors within local contexts are self-serving and not always in the best interest of the local system. The foreign aid system operates on multiple levels, with the policies of certain foreign aid actors determined on a national level. For example, USAID's policies are determined within the United States by a variety of interest groups, but often have little linkage to local contexts and their needs. As a result, foreign aid actors can distort how a country naturally develops, over-determining the level at which non-governmental actors should be involved (by funding them) (Howell and Pearce 2000), over-simplifying local contexts (e.g. 'democracy' promotion at USAID) (Robinson and van Rooy 1998), and creating standardized development packages that do not work in all places (Ferguson 1990).

Foreign aid agencies tend to prioritize only certain kinds of knowledge. This includes expert knowledge from those trained in the Western tradition (e.g. World Bank, WHO), while local knowledge, particularly knowledge from the village level, is often left out of the discussion and not valued as useful (Escobar 1995). The lack of inclusion of local perspectives can result in programs being ineffective and inefficient and failing to address the problems faced by local populations. The tendency to stress certain kinds of knowledge, particularly technical knowledge, results in programs and policies that often do not match the needs of a country.

The use of foreign aid as a foreign policy tool may also result in the creation of separate groups of actors that operate within local systems but are not part of the local programs. This can result in duplication of services, or even in the creation of conflicting programs. The segregation of foreign aid actors within local systems results from the different priorities of these groups. Not only are foreign aid actors separate from local systems, they are also separate from each other. In practical terms, foreign aid donors require documentation and create a bureaucracy among those with whom they work. Because these donors are often not linked to one another, if an organization or actor within a local system is working with multiple foreign aid actors, this may result in an onerous amount of documentation, accountability and paperwork for those operating within the local systems, work that could be reduced if foreign aid actors would collaborate.

Within local systems, there often exists corruption, inefficient and ineffective programs, and non-democratic decision-making (Klitgaard 1990, Rose-Ackerman 1999). This may lead to distrust between certain groups and those enacting programs. Actors within the local systems may not want to be connected to those creating policies for fear of being associated with them and becoming ineffectual. The actors within local systems may be operating with different

agendas that have nothing to do with improving programs and the lives of its citizens. They may close off the system to new actors, keeping power and influence in the hands of a select few, which inhibits the system's ability to adapt to external situations and the needs of those they seek to serve. Marginalized groups and those who represent them may be unable to create linkages with decision makers in the local system, which can be problematic because these groups often have the largest and most complex needs within a society.

The foreign aid system's interaction with the public health system in developing countries can lead to interesting and sometimes inefficient results. For example, it has been argued that the inundation of the health sector by international NGOs since the late 1980s may have in fact damaged the health system in some countries (Pfeiffer 2003). Rather than redistributing resources to promote greater equity and help alleviate poverty, the flood of NGOs and their expatriate personnel has fragmented the health system and contributed to intensifying social inequality in local communities with important consequences for primary health care delivery (Pfeiffer 2003). The lack of aid coordination results in the subsequent fragmentation of health activities in many developing countries. The multiplicity of competing organizations that duplicate program support, create parallel projects, pull health service workers away from routine duties, and disrupt planning processes has generated concern for both donors and recipients.

Within developing countries, local public health and foreign aid systems are examples of complex adaptive systems. Within these systems are often clusters and cliques of organizations that are working towards their owns ends that may be in conflict with other groups goals or may be duplicating services, resulting in large inefficiencies in contexts where resources could be utilized in much better ways. There are movements (such as 'ONE', so named because it

advocates for developed countries to spend one percent of their budgets on foreign aid) to increase government budgets in overseas development assistance, with the assumption that more assistance will improve the provision of basic health and education needs, ultimately leading to poverty reduction. However, history has shown that aid and donor policies can have highly negative consequences on their recipients (Hancock 1989, Lancaster 1999, Maren 1997) and increasing aid without understanding its effect can do more harm than good. Providing funding to organizations and networks of organizations that are not effective can exacerbate problems rather than deal with them, increasing distrust and negatively affecting both the foreign aid and public health systems. In addition, funding to address infectious diseases may not improve public health if the money is not directed towards larger improvement of infrastructure and education. Finally, within developing countries these two systems exist side by side, yet interactions are few, and resources, both financial and intellectual, are not effectively exchanged.

1.2 LEVELS OF ACTION

Both the international aid and local systems operate at different levels, with different actors interacting at the various levels. Within the foreign aid system, organizations and networks of organizations exist to combat specific problems, enact public policy change, and deliver services. These groups operate on local, national and international levels. At the international level, organizations within similar fields often work together to determine broad policy objectives (e.g. Millennium Development Goals) or carry out international campaigns (e.g. International Campaign to Ban Landmines). The advocacy role that organizations play in the international arena is important in voicing global goals, ethics and principals. Multi-lateral policy is

determined at the international level, though the national level debates affect government and international organizational policy. Services are delivered at the local level, but are highly affected by the national and international policies, over which organizations operating within the local context often have little say. International organizations are often connected in the international arena through communication and knowledge sharing networks; however, in local arenas where policies are enacted, these organizations often do not work together. Individual donors have their own policy objectives and long term agendas and mostly enter into countries without donor coordination. This results in segmentation of groups by international donor, with organizations in a country connected by an individual donor rather than a specific issue. These connections are artificially constructed, rather than naturally formed.

Within local systems are also nested sets of organizations that work on different problems at different levels (e.g. planning or implementation) and are regionally focused. At the planning level, organizations are usually based in large cities and are predominantly controlled by central government agencies. Sometimes, this nested set of organizations is not linked to implementing organizations or regional organizations. Without input from those on the ground, policies may be ineffectual and inappropriate for the problems they seek to solve. In addition, there are often charges of corruption, nepotism and cronyism within central government planning in developing countries (Klitgaard 1990, Rose-Ackerman 1999). These practices can exclude experts in the field, limit open dialogue and foster mistrust between the insiders (e.g. central governments) and the outsiders (e.g. NGOs, universities, international organizations, etc.).

At the implementation level, there exist groups of organizations around a specific issue (e.g. AIDS) or group of people (e.g. migrants) that may not be well linked into broader policy planning and implementation. These clusters of organizations could offer knowledge and

information about groups of people but need to be included with larger, more comprehensive policy planning. However, sometimes these groups of organizations have adversarial relationships with central government agencies because of a history of mistrust, of discriminatory government policies towards their beneficiaries, or due to conflicting agendas. In addition, some NGOs have competitive relationships with one another due to competition for resources and legitimacy. These external factors and opinions make working together difficult and inhibit the creation of linkages that could improve policy planning and implementation.

1.2.1 The International Aid System in Thailand

This project examines the international aid system at the local level, though it is understood that policies and programs created at the international and national levels influence this action arena. It uses Thailand as a case study. Prior to Global Fund involvement, Thailand had a long history with international donors, though these donors often pursued their own agendas. During President George W. Bush's tenure as U.S. President his AIDS policy focused heavily on abstinence programs. Within Thailand, where the AIDS epidemic affected sex workers and migrants, abstinence programs did not fit within the Thai national agenda, nor was it a practical policy for combating the disease. Therefore, U.S. PEPFAR programs created their own networks that were not linked to the larger Thai public health system to combat HIV/AIDS. Within the Thai international aid system, international organizations create their own sub-groups within the system, and they rarely plan and implement programs together. This failure can result in competing or even conflicting programs that the Thai government does not control.

At the national level, programs and agendas are created through the interaction of a variety of organizations and actors, including politicians, bureaucrats, academics, and civil

society groups. International organizations are involved in this process as technical assistants and international aid given to Thailand's government was focused on infrastructure creation and human capital development. In contrast, funding towards community and nonprofit organizations focused on assisting marginalized and poor populations by educating and creating a healthy populace (Muscat 1990).

The role of international organizations and local nonprofits (which often receive funding from foreign donors) has been viewed as a means of `bypassing the State'. Local nonprofit and international nonprofit organizations can be broadly divided into two categories. First, there are various well-established organizations providing health care services such as the Family Planning Association, the Chinese Overseas Hospital, and those associated with relief and emergency services. The second group of NGOs is primarily concerned with advocacy activities. One of the best known of these advocacy organizations is one founded more than 20 years ago by Dr `Condom' Meechai Viravaidya which forced discussion of AIDS and contraceptive practice onto the public agenda. Other advocacy campaigns have focused (to differing degrees of success) on pharmaceuticals, including campaigns against patent law and dumping of drugs (Green 2000). However, there is a lack of collaboration and coordination between NGOs, both between organizations performing similar tasks and between organizations with different areas of expertise.

1.2.2 The Public Health System in Thailand

In Thailand, the government has long been the main actor in the creation and enactment of policies. In the past, there existed strong government control over programs with a lack of true input from other local organizations like nonprofit organizations and the Thai government was

the main funder of programs (Bennett and Tangcharoensathien 1994, Green 2000). There is a history of Bangkok controlling policies with little input from or linkages to local levels. One of the reasons for the protests during the spring of 2010 was that the local, rural population felt it was not being heard in Bangkok. There is a large division between these two, both geographically and economically. In terms of public health, particularly when trying to combat infectious diseases, those most affected are often populations that are the most vulnerable. In Thailand, this includes groups of illegal immigrants, refugees, sex workers and drug users. Organizations working with these groups have had adversarial relationships with the government in the past, mostly due to government policies towards these groups of people (Green 2000, Kerr et al. 2004). This results in distrust and lack of positive interactions, with those most knowledgeable about these populations rarely at the table to help create programs to address their needs.

Public health problems and the programs to address them are large and complex, with multiple organizations responsible for prevention, care and treatment, research and education, resulting in a lack of clear organizational leadership and national agendas. In addition, for many public health problems like tuberculosis and malaria, there is a lack of organizational diversity involved in creating and enacting programs, which may inhibit innovative policy creation and result in the failure to identify holes in the programs. Because of the nature of these diseases and those who are most affected by them, the failure to properly incorporate diverse organizations like research institutions and civil society groups can hurt the effectiveness of programs to address these problems.

In addition to strong central government control with little input from other organizations, ‘government’ in Thailand is not homogeneous. In the past the Ministry of Public

Health was exclusively responsible for creating and enacting public health programs. However, because of the complexity of public health problems, there is a growing understanding that other aspects of the public sector, like the Ministry of Labor or the Ministry of Education, need to be involved to ensure effective programs. Prior to the Global Fund there was a lack of collaboration between ministries, though public health problems disproportionately affect groups like migrant workers, drug users and sex workers. Without the inclusion of the Ministry of Interior, whose policies criminalize drug users and migrants, and Ministry of Labor, who registers migrants, allowing them legal rights to work and access health care, into public health program planning, these programs will not be effective. Given the large numbers of migrants, intravenous drug users (IDUs), and sex workers at risk for all types of diseases, policies cannot be successfully enacted if people don't go to hospitals to get treated for fear of repercussions. For example, prior to the Global Fund's introduction Thailand did not include harm reduction within their AIDS policy and programs, a part that most international experts believe is crucial for success. If IDUs, who have an estimated 50% HIV infection rate in Thailand, cannot access clean needles without incarceration, then any program aimed at reducing HIV infection rates will fail.

Public health programs are implemented at the local level. Funding flows mainly from the Ministry of Public Health (MOPH) down to provincial health offices, who funnel it to district health offices. However, local hospitals also receive funding from central government, though not from provincial ones. There is some control by the provinces, but the programs and funding are determined in Bangkok. At the local level where the programs are enacted, there exists a variety of organizations including local health offices, vector control units, hospitals, health clinics and local and international nonprofits. Mostly, these organizations do not coordinate or collaborate with each other, and there is a clear lack of regional cooperation between localities.

Information is not exchanged from one province to another, information which could help improve program implementation. In addition, because of the variety of accountabilities, with nonprofits on the ground often responsible to national and international affiliates, local health offices responsible to provincial health offices and vector control and offices of disease prevention and control responsible to the Ministry of Public Health, there is little incentive or push to coordinate and collaborate on the ground, resulting in redundancy of programs.

1.2.3 Action Situations: Disease Networks

Within both the foreign aid and public health systems are different clusters of organizations that form networks to prevent, treat and research specific public health problems. These clusters of organizations working on malaria, TB and HIV/AIDS (the focus of the Global Fund) include various departments within the Ministry of Public Health, other government agencies like the Ministry of Education, provincial and district level public health offices, and many international donors that operate within Thailand (e.g. USAID, UN agencies, CARE International, Population Services International, American Refugee Committee, World Vision International). In addition, Thailand's vibrant civil society sector includes associations of people living with these diseases, organizations working with marginalized populations that are disproportionately affected by these diseases (e.g. organizations that work with sex workers) and foundations that fund research and programs on these diseases. Different types of organizations work on these three diseases, with different goals that include creating programs to treat those suffering from the diseases, educating the population about these issues, and researching how best to address these problems.

These disease networks operate on planning and implementation levels. At the planning level, organizations include the large national government agencies, largest nonprofit

organizations and international organizations. However, they do not coordinate or collaborate when they plan programs that address the same diseases. These groups each have its own programs, and there are few funding, technical assistance or other knowledge exchange interactions between these organizations.

The organizations within Thailand implementing programs to address these three diseases operate at the local and regional level, with few interactions across localities. Those organizations most responsible for implementation of national agendas are the provincial and district level health offices. These health offices have no standardized means of exchanging information or knowledge, and do not actively participate in the formation of program and policies, though they have the most direct knowledge of these diseases and populations who are affected by them. Local civil society groups and international organizations that implement programs do not have national programs, but instead operate in a few local areas on specific populations. There are contentious relationships between these local public organizations and civil society and international organizations working with illegal populations (e.g. migrants and refugees), which results in lack of collaboration between these groups. These problems limit learning and positive adaptation over time and result in inefficient and ineffective programs.

1.3 A NEW TYPE OF FOREIGN AID

In an effort to address some of the problems that exist between these two systems, the Global Fund was created in late 2001. It is primarily financed by the United States, France, the European Commission, Japan, and the United Kingdom (U.K.), along with significant contributions from the Bill & Melinda Gates Foundation, and is sometimes touted as a new

model of foreign aid. Its founding principles—country ownership, broad participation, transparency, accountability, and a focus on results— constitute an important experiment in making at least those aid flows meant to fight disease more coordinated, more legitimate and more effective. This type of aid seeks to give agency to its recipients and recognizes that problems vary by context and solutions for a problem in one place do not necessarily work in another place. In addition, the Global Fund stresses results, transparency, accountability and broad participation.

Despite a focus on collecting data about their programs, billions of dollars dispersed, and multiple rounds of funding (beginning in early 2002), the aid network within countries is not well understood, nor are the workings of partnerships and collaborations that vary significantly by country, and can ultimately play a large role in how and why programs succeed. The Global Fund is part of the foreign aid system and, because of its structure and mission; it is also part of the local public health system within developing countries. As a result, the Global Fund influences both and can help generate positive adaptation over time within both systems.

1.3.1 Funding and Structure of the Global Fund

After initial funding for the Global Fund from large donor governments and foundations, funding sources have expanded to include many smaller governments as well as private corporations like Chevron and the United Nations Foundation. The Global Fund has hosted three 'replenishment' conferences, where donors gather and pledge funds for the coming three or four years. Since its creation in 2001, the Global Fund has become the dominant financier of programs to fight AIDS, tuberculosis and malaria, with approved funding of US$ 21.7 billion for more than 600 programs in 150 countries (The Global Fund 2011c). It is the largest multi-lateral funder of AIDS

programs and provides two thirds of all TB funding and over half of all malaria funding (International HIV/AIDS Alliance and the Global Fund 2008). The majority of international funding for malaria is now funneled through the Global Fund. Attention on malaria since 2001 has resulted in a huge rise in funding and organizations working to eradicate this disease, from $35 million in annual funding commitments for malaria in 2000 to $1.6 billion in 2009, with 70% of the increase a result of Global Fund programs (White Johansson et al. 2010). To date, programs supported by the Global Fund have provided AIDS treatment for three million people, anti-tuberculosis treatment for 7.7 million people and the distribution of 160 million insecticide-treated bed nets for the prevention of malaria (The Global Fund 2011c). Global Fund financing is enabling countries to strengthen health systems by, for example, making improvements to infrastructure and providing training to those who deliver services.

The Global Fund has no in-country presence and operates out of Geneva, with its program managers regularly traveling to grantee countries to monitor and evaluate current programs and run trainings for organizations. In Geneva, the Global Fund core structures include a secretariat, a technical review panel and a board. The secretariat manages the grant portfolio, including screening proposals submitted, issuing instructions to disburse money to grant recipients and implementing performance-based funding of grants. More generally, the Secretariat is tasked with executing Board policies; resource mobilization; providing strategic, policy, financial, legal and administrative support; and overseeing monitoring and evaluation. It is based in Geneva and has no staff located outside its headquarters. Program decisions and policy creation are the responsibilities of country coordinating mechanisms (CCMs) that operate within individual countries. The Global Fund reviews the proposals of the CCMs to determine program viability but does not tell countries what programs to create. If the Global Fund

approves a proposal, it signs contracts with the principal recipient, who is tasked with implementing the programs. The CCM receives no money from the Global Fund and has no formal contract with it.

The Global Fund Board, located in Geneva, is composed of representatives from donor and recipient governments (usually the ministers of health), civil society, the private sector, private foundations, and communities living with and affected by the diseases. The Board is responsible for the organization's governance, including establishing strategies and policies, making funding decisions and setting budgets. The Board also works to advocate and mobilize resources for the organization. In addition, the Global Fund has a technical review panel of independent international experts in the three diseases and those who are experts in cross cutting issues such as health systems. This panel reviews proposals based on technical merit and provides recommendations to the Board.

1.3.2 Country Ownership

Within a country, the Global Fund process sets up the CCM, a structure composed of public and private organizations which develops proposals and informally oversees the utilization of Global Fund resources. They coordinate the submission of one national proposal for each disease for each round of funding, selecting the appropriate principal recipients for the grant. They also submit any requests for continued funding and are required with ensuring that linkages and consistency exist between Global Fund grants and national health programs.

The Global Fund requires that the CCM of a country be representative of both public and private organizations, including international organizations and groups that represent those affected by the diseases. Each country is different, but the Global Fund recommends

representatives from academic institutions, government, NGOs, people living with the diseases, private sector organizations, and multi-lateral and bilateral development partners within a country. The membership of the CCM must be at least 40% non-governmental organizations (The Global Fund 2011b).

Though the Global Fund stresses country ownership, it tries to incorporate international organizations into the process by having them provide technical assistance, monitor and evaluate and perform research. The goal is for countries to take over these programs and for the need of Global Funds to disappear, but the technical assistance role for international organizations will remain. The Global Fund seeks to create a more inclusive system that functions to combat diseases in ways which fit into existing health systems, while also strengthening organizational and system capacity, and which do not function to serve the interests of an individual donor. In incorporating multiple actors into the program planning process, encouraging international organizations to provide technical assistance to improve knowledge and capacity, as well as improving transparency and accountability and focusing on getting results, the Global Fund claims that the public health system in a country as whole will improve and benefit (Bennett and Fairbank 2003).

1.3.3 Accountability

A core goal of the Global Fund is to improve accountability of grantees to it as well as to the beneficiaries they seek to serve. Because there is no in-country presence, the Global Fund contracts with a local fund agent, usually financial auditing companies like KPMG and PriceWaterHouse Coopers, to regularly monitor and evaluate the principal recipients of grants to determine progress. The Global Fund's grants are initially approved for two years (Phase 1) and

renewed for up to three additional years (Phase 2) based on the performance of grant-funded programs. Funding is disbursed incrementally every three to six months throughout the grant's lifespan, and each disbursement is based on performance. Local Fund Agents (LFAs) play an important role in verifying the performance of grant-funded programs each time recipients report results. However, there is criticism of the LFAs as being concerned only with numbers and not well versed on the nuances that exist when enacting public health programs in developing countries (Technical Evaluation Reference Group 2007).

1.3.4 Amounts of Funding

Since 2001, the Global Fund has become a dominant actor in health funding, with funding sharply rising over the last ten years (Figure 1). Today it is the largest single multi-lateral donor in health. In addition, many bilateral donors are funneling health funding through the Global Fund, though the U.S. still maintains its own programming, specifically U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and President's Malaria Initiative (PMI). Nonetheless, the Global Fund is the largest multi-lateral funder of AIDs programs, provides two thirds of all TB funding and over half of all malaria funding (International HIV/AIDS Alliance and the Global Fund 2008). The majority of international funding for malaria is now funneled through the Global Fund. It is important to note that the statistics are for 'development assistance for health', so the other funders are not only funding AIDS, malaria and TB with this money, but all other health problems as well. The Global Fund in increasingly important in funding these three diseases and may also be distorting health funding by over-funding these diseases at the expense of other global health concerns (e.g. maternal health, dysentery, etc.).

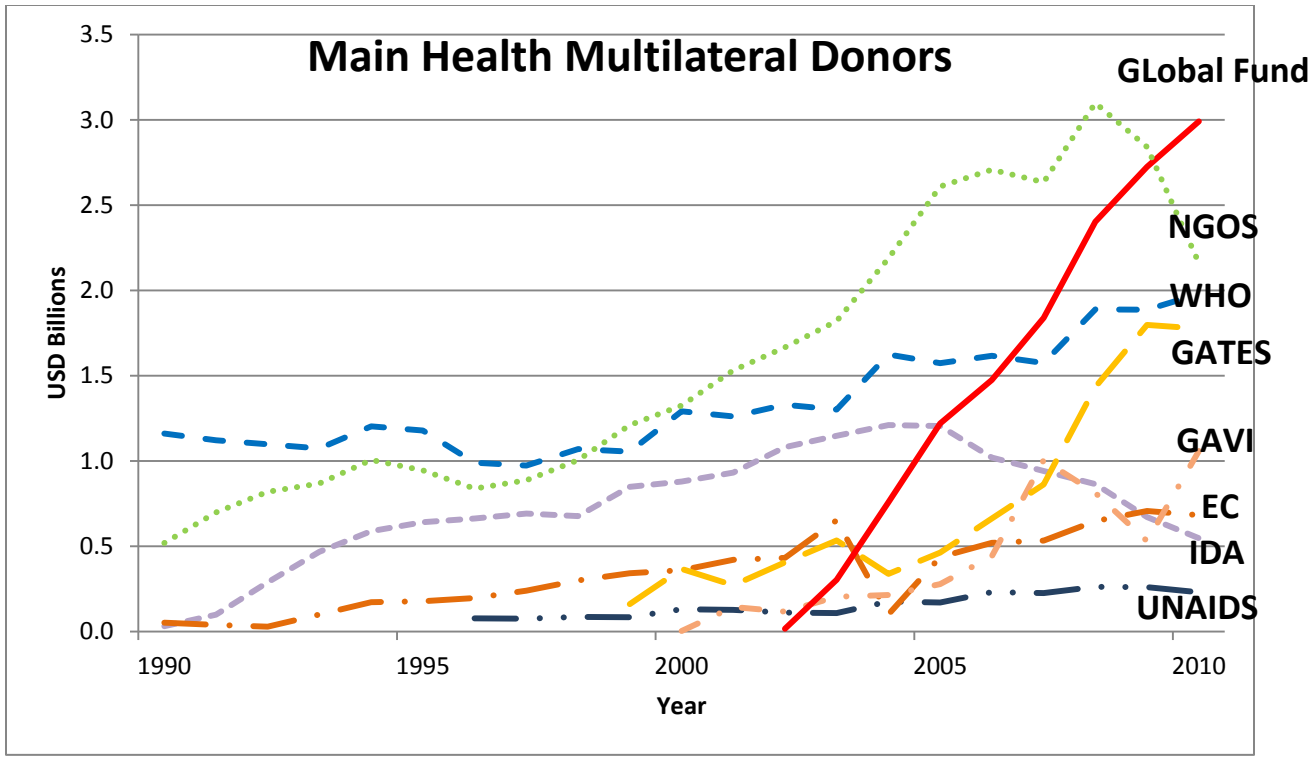

Figure 1: Development Assistance for Health, 1990-2010 (IHME 2010).

1.3.5 Focus on three diseases

The Global Fund is part of a trend in funding increases for health issues, a trend started in the 1990s and continues today. However, it is argued that the money is largely uncoordinated and directed at specific diseases rather than public health in general (Garrett 2007). Some claim that funding prevention and treatment programs for HIV, malaria and TB assists in creating a larger and better public health system, while others argue that the funding merely creates pockets of improvement that are unsustainable (Beaglehole and Bonita 2004). In addition, there is an argument that the policies enacted to combat these diseases are determined by the West (with local cooperation) but few have policies and practices that incorporate the world's poor into

discussion (Garrett 2007). If infrastructure and human capital is not improved, then much of the money will not garner long term results. Only through improvement of the entire public health system can these diseases, and numerous other health concerns, be tackled. On the other side, "if you first develop the health infrastructure throughout the whole country, particularly in Africa, to deal with AIDS, you will increase the infrastructure of dealing with maternal and child health, malaria and TB" former U.S President Bill Clinton said. "Then I think you have to look at nutrition, water and sanitation. All these things, when you build it up, you'll be helping to promote economic development and alleviate poverty" (Garrett 2007, 23).

Within public health, there are many different organizations from all sectors of the society, making it a challenge to bring them together in a common pursuit of public health. Some researchers have pointed out that it is the differences in values and cultures that are the most difficult barriers to integration (Argyris 1993, Ostrom 2005). Structures can be changed by a funding source, but values change much more slowly. The Global Fund seeks to address these issues by stressing country ownership and the participation of different sectors and organizations into the formation of policy and program goals.

1.3.6 The Challenge for the Global Fund

The Global Fund claims to have a new and innovative financing system to combat three infectious diseases (The Global Fund 2003, 2004) that would create connections between and within the current foreign aid and public health systems in local contexts. The process results in new governing and knowledge exchange structures that provide forums of interaction for organizations within the public health arena and those within the foreign aid arena. However, these interactions are affected by long standing institutional histories and relationships that may

help or hinder the achievement of program goals, which may affect a country's ability to use Global Fund money to effectively combat these three diseases and ultimately improve its public health and foreign aid systems.

Establishing a process that can positively adapt over time is difficult, particularly in countries that have existing relationships and biases. Interactions between organizations that are not effective can exacerbate problems rather than dealing with them, increasing distrust and negatively affecting both the foreign aid and public health systems. These interactions include resource transfers, including financial and intellectual, and communication, and affect not only future Global Fund process interactions, but also alter the foreign aid and public health systems within the local context.

1.4 CREATING NEW GOVERNING STRUCTURES

The Global Fund began in 2001 and started disbursing money in 2002. With its large amounts of money and the creation of new governing structures, its introduction affected both the international aid system in Thailand and the local public health system. The Global Fund seeks to create a more cohesive network of organizations that would work together to improve health by increasing knowledge and training, allowing for broader coverage of programs and including people who have been overlooked in the traditional health system in Thailand. In the process, the inclusion of international organizations into the process aims to make aid more directed and coordinated within the public health sector in Thailand. The new governing structures require Thai public, Thai local civil society and international organizations to regularly interact, interactions which create new relationships and alter old ones. Nonetheless, the entrance of the

Global Fund created a tension between the programs and relationships they create and a perceived diminishing role for the Thai government on one side and the international organizations on the other. With greater collaboration and coordination, there is the risk of a diminishing role for Thai government, with an international body controlling large amounts of public health sector money and the incorporation of local nonprofits, for profit companies and associations of those affected by the diseases into the process. The Thai government could inhibit true collaboration if they perceive a loss of power. In addition, the introduction of the Global Fund may result in a decrease of power from international donors. The sheer size of the Global Fund grants compared to individual donors will cause a decrease in individual donor importance, resulting in a decrease in its ability to push its agendas.

1.5 RESEARCH QUESTIONS

This research examines the Global Fund process to understand how interactions between organizations within the system result in structural and substantial adaptation within the process and how the foreign aid system and the public health system in Thailand change as a result. How have the relationships between the actors within the Global Fund process changed over time? To what extent have these relationships affected the foreign aid and the public health systems in Thailand? Is there evidence of learning over time? Does the network adapt over time to better provide services and address the complex health problems of Thailand? Are international actors more integrated into the arena over time?

It is assumed that there will be resistance to some of the changes that the Global Fund brings, particularly the decreased importance of individual donors within Thailand who work on

these three diseases. In addition, given the history of relationships between the Thai government and civil society, and policies of the past in relation to many of those most affected by these diseases, there may be a lack of trust between groups that can inhibit their ability to work together. However, if interactions between organizations generate positive outcomes, with knowledge transferred from those working in the field to those planning the programs, and money and technical assistance transferred to those who need it, then this arena will positively adapt to provide better services for these diseases. These better services result from improved overall public health infrastructure, human capital, coordination and collaboration among groups.

Adaptation of network structure and substance through the Global Fund process should improve and increase interactions among international actors who provide technical assistance. These actors provide assistance at both the planning stage (predominantly in Bangkok), in implementation (in the field), and facilitating monitoring and evaluation and the knowledge transfer of this information. Over time, this process should improve the coordination between international actors and alter the roles that they play. However, the decrease in power and influence of these bodies may lead them to be excluded from the process, which in turn may hurt the creation of policies that would improve the overall public health system.

1.6 SIGNIFICANCE OF RESEARCH

The Global Fund is a new international financing mechanism that overlaps both the foreign aid system in a country and the local system. Examining the interactions among organizations and how those interactions result in structural and substantive change within the Global Fund process (and how they lead to adaptation within the local foreign aid and public health systems)

represents a novel way of approaching the problem of conflicting systems. Systems, sub-systems and sub-sub systems have been studied, but examining a system that bridges two systems is a new and unique conceptual idea.

Funding for human resource development, such as health and education, is often not sufficient to address problems and concerns and yet these issues are critical for a society's well-being and growth. Understanding how relationships between organizations, and agents within those organizations, grow and adapt can illuminate which organizations and networks of organizations are effective and which are not. In doing so, positive interactions between organizations that share knowledge and resources can be created and improved to the benefit of the system as whole.

The Global Fund is sometimes proclaimed as the future of foreign aid. However, it is not without its problems. For one, the Global Fund's focus on three infectious diseases could lead to the neglect of other public health problems (e.g. maternal mortality) if the funding does not improve the public health system in general. It may also lead to greater bureaucracy if the Global Fund is not coordinating with other donors and health policies. Overall, if the funding creates a network of organizations that can adapt to better achieve the goals of the Global Fund and can adapt to incorporate different types of organizations over the years (e.g. working with transportation organizations, education groups, etc.) then it is successful. However, the Global Fund enters countries with long histories and dysfunctional relationships between organizations that are not easily overcome in short periods of time. If the networks they create can establish trust and organizations believe as though they are successful, then the funding can improve the health situation in many countries by creating positive changes in both the local public health system and the foreign aid system. However, the lack of understanding of organizational and

personal relationships and how the money improves or hurts them may lead to misuse of funds and failure to address health issues.

1.7 ANTICIPATED FINDINGS AND BROADER IMPACTS

In examining the structure and processes of the Global Fund in Thailand, interactions between organizations that result in knowledge and resource exchange are critical to understanding what programs are effective and where program gaps still exist. It is assumed that the interactions form a structure of relationships that affect the substance of the programs. New and different interactions between organizations can lead to more collaboration and coordination, resulting in improved outcomes. When outcomes are positive and results transparent, actors will collaborate and coordinate more often and in better ways. Knowledge transfers will improve outcomes, resulting in more effective programs being planned and implemented. Improvement of the outcomes will affect the rules and attributes of both the public health and the foreign aid communities. Resource transfers can have positive effects, but only when coupled with greater information and knowledge transfer. Without the existence of these factors, resource transfers may result in a decline in the social space in which participants interact.

The results of this project will be shared will all key stakeholders involved and presented to the Global Fund for education and to advance the understanding of how systems interact and function. In addition, because the majority of the organizations and resources within the Global Fund system are working with underrepresented and underprivileged groups, particularly undocumented workers, non-Thai workers and undesirable populations (e.g. IDUs), greater

understanding of the system and how to improve it will improve much needed services to traditionally underserved populations.

By working with the organizations in this system and presenting the findings to the key stakeholders, the goal is to improve the network and partnerships, resulting in better and more effective services in Thailand and in other public health contexts. This research has broad implications to policy and theoretical questions. In policy, the results can display what and where are key linkages and connections in planning, delivering and monitoring services. Theoretically, this research answers questions about how overlapping systems can result in the creation of a meta-system, which can result in changes in both systems.

2.0 FRAMEWORK FOR SYSTEM INTERACTION

The theoretical concept of complex adaptive systems is the foundation for this research project, which seeks to understand the extent to which interactions within the Global Fund process generate change within the foreign aid and local system. The framework and research design emerge from literature about complexity and systems, organizational collaboration, and network theory. Using Elinor Ostrom's (2005) institutional analysis and development (IAD) framework to examine overlapping action arenas, the research questions can be addressed. In addition, the literature about organizational collaboration illuminates how and why organizations work together, discussing the types of collaboration that lead to positive results, which include resource transfers, communication, and knowledge exchange. The structure of relationships and an organization's position relative to others within its network influence how problems are constructed and solutions derived, and are keys to understanding how interactions can generate both positive and negative adaptation.

Complex adaptive systems are prevalent throughout the world, consisting of many agents, organizations, interactions and rules. When examining these, it is necessary to find a way to harness the complexity to better understand the interactions and the dynamic changes that occur over time. Both public health and foreign aid are complex systems that are diverse and adaptive, and include sets of connected organizations and agents. In addition, both systems consist of organizations and agents that are increasingly specialized and differentiated, with

many operating on local levels and focusing on one problem or a specific population. As a result, there is a growing need for integration and collaboration to address complex global health problems. Collaboration can result in more efficient use of resources by sharing rather than duplicating services; reduce uncertainty by sharing risk among organizations; and provide organizations with greater opportunities and connections to achieve their goals (Granovetter 1985). It can also reduce fragmentation or duplication of services, improve patient care outcomes, result in greater satisfaction with services, and improve the performance of the overall health system, its programs and services (Shigayeva, Atun, McKee and Coker 2010).

The public health and foreign aid systems operate at multiple levels and around different issues and problems. Nested sets of organizations emerge that are linked by issue, location, and function. In Thailand, organizations working to combat communicable diseases operate around specific diseases, at the local level implementing programs and the national level planning them. The Global Fund introduced a different type of foreign aid, one that strives for decisions to be made by a collective of stakeholders within recipient countries, which focuses on results in combating three infectious diseases and looks to be transparent, accountable and participatory. In doing so, the Global Fund creates an action arena that bridges the local public health system and the international organizations working in Thailand at both the central, planning level and the local, implementing level. Through the structure created by lending money and the process of communication and knowledge sharing, the interactions, outcomes and evaluations that occur within the Global Fund process feeds back into both the public health and foreign aid systems. Optimally, the interactions and outcomes will change both systems for the better with both adapting to better serve clients and combat problems. However, the understanding of the

interactions between health systems and large global health initiatives such as the Global Fund is incomplete. Effects with time have rarely been studied, and usually only for HIV/AIDS monies.

2.1 COMPLEXITY

Systems thinking is a general conceptual orientation concerned with the interrelationships between parts and their relationships to a functioning whole, often understood within the context of an even greater whole. Systems modeling is a methodological tradition that involves the use of formal models or simulations as explicit aids to increase understanding of complex systems and improve the effectiveness of actions within them (Trochim et al. 2006). Public health and foreign aid systems are complex in that they consist of many interacting stakeholders with often different and competing interests. Agents in these systems must constantly adapt to the actions of others and to a changing environment that is in turn affected by the actions of the agents themselves. Such systems are not controlled centrally; they are self-organizing. Complexity theory, or the study of complex adaptive systems, focuses on understanding systems of this type. Simple rules, networks of adaptive agents, feedback, self-organization, and emergence are hallmarks of complex adaptive systems (Trochim et al. 2006).

The parts within complex adaptive systems exchange resources and the structure created exhibits several major characteristics, including a large number of interacting parts, interactive complexity, and self-organization (Simon 1969, Tan et al. 2005, Thompson 1967). 'Complex' implies diversity – a wide variety of elements; 'adaptive"' suggests the capacity to alter or change – the ability to learn from experience; and a 'system' is a set of connected or interdependent units. These units may be a person, a molecule, a species or an organization,

among others (Begun, Zimmerman and Dooley 2003). The nature of interactions and agents shapes the system, and interactions can be encouraged or discouraged by removing or constructing barriers. The structure of the system, human understanding of that structure, and the vertical and horizontal relationships among actors and organizations, can affect information, communication, trust and the ability to change, which feeds back into the system, creating a path dependence where positive interactions fuel more positive interactions, while negative ones perpetuate the negative.

Examining the world through complex adaptive systems differs from past examinations in that it focuses on relationships, on learning, on variation, and on behavior that emerges from the bottom up (Dent 1999). In addition, it views the history of the relationships as important and takes as a level of analysis the multitude of nested sets that exist within systems (Begun, Zimmerman and Dooley 2003, Ostrom 2005). This approach provides a totally different way of looking at the universe, one that is not linear, where the simple rules of cause and effect do not apply, and where the 'machine' cannot be understood by simply understanding its parts (Watts 2003). The Global Fund monies in Thailand create an action arena that incorporates actors from both the public health and the foreign aid systems, creating new and strengthening already existing resource sharing, communication and knowledge transfer linkages between actors. The rationale behind the Global Fund philosophy is that organizations that are transparently working together, are accountable to both beneficiaries and their funders, are owned by the country and include participation from differing members of society, resulting in progress in fighting these diseases, can engender positive interactions that will encourage positive adaptation and improve the overall public health and foreign aid systems.

Each complex adaptive system is "composed of interacting agents described in terms of rules. These agents adapt by changing their rules as experience accumulates" (Holland 1995, 10). Rules help to understand how agents adapt and learn in their environment. In terms of learning, agents interact with their environment, including with other agents each of whom has a strategy to respond to his environment and to pursue his goals. Also, agents change strategies according to their performance, based on some measure of success. Adaptation or learning occurs in a system when the selection process leads to improvement according to some measure of success, which in return leads to a change in the agents, a co-evolutionary process. In addition, the information revolution of the 1990s caused interactions to become more intense, barriers to interaction to be greatly reduced and costs to be minimized (Axelrod and Cohen 1999).

2.1.1 Foreign Aid as a Complex Adaptive System

The international aid system includes multiple action arenas and operates at the international, national and local levels. It includes multilateral organizations like the World Bank, foundations, international, national, and local civil society organizations, national governments and divisions of governments, and private companies. Within the international action arena there exist nested sets of organizations, organizations connected to each other to enact policy change, to fund and deliver services, or to evaluate progress on specific programs and policies. These nested sets include organizations focused on promotion of human rights, on combating health problems and on economic development. The diversity of institutions within action arenas makes relationships complex and understanding how adaptation and change occurs difficult (Ostrom 2005).

The foreign aid system operates on multiple levels. The international level includes, but is not limited to, multi-lateral institutions, private companies, governments, and international

civil society organizations. The national level includes branches of national governments (the executive, legislative and judicial), politicians, the public (or public opinion), and civil society organizations. There are often links between the international and national levels, particularly with national governments and civil society organizations operating in both arenas. The local level includes some of the same actors from the international and national levels but also includes an entire subset of service delivery organizations that often do not have links to the international and national arenas. In order to enact change, linkages need to exist between nested sets of organizations and between action arenas (Ostrom 2005).

In 50 years of aid no major institution has exited the market through closure or merger, with considerably more in existence today (over 40 bilateral agencies, 15 UN system agencies, and 20 global and regional financial institutions) (Besanzon 2003) than when the share of aid in GDP was a third larger (Rogerson et al. 2004). Few have tried to develop comprehensive strategies or to compare the value-for-money of their investments across the whole architecture. There are clearly factors at work here other than market forces and the strong will of well coordinated joint owners. The aid system here mainly includes the organizations, their political owners and civil servant managers, as well as their sources and uses of funds. The Global Fund, as a new institutional form for aid, could reshape the system considerably,. The more impact it has and the more support it attracts, the more existing aid institutions will need to adapt or yield ground to this reality (Rogerson et al. 2004).

2.1.2 Public Health as a Complex Adaptive System

Public health is “the science and art of preventing disease, prolonging life and promoting health through organized community efforts“ (Acheson 1988. 1). Recently, the concept of public health

has been broadened to include not only disease prevention and health promotion but also medical care and different forms of rehabilitation. With such a wide range of services, the inter-organizational character of public health has become even more pronounced (Saltman and Figueras 1997). There is functional differentiation of roles and tasks in connection with these services, and organizations encompass health service and delivery groups, and also education, social service, environmental protection, and employment service groups, including organizations from both the public and private sectors. With increasing differentiation, however, there is also a growing need for integration to reduce fragmentation of responsibilities (Øvretveit 1993). This fragmentation usually leads to quality and efficiency problems of different kinds, including duplications, gaps, inconsistencies or incontinuities in the provision of services (Bolland and Wilson 1994, Glendinning 2003).

There are key elements relating to the nature of public health systems that match the characteristics of complex adaptive systems. These systems are influenced by a large number of interacting components; the systems are interactively complex, and the cause and effect are distant in time and space, making it difficult to predict the future; and the complex nature of these systems often requires flexible strategies and self-organization capability to handle medical emergencies and uncertain situations (Tan, Wen and Awad 2005). Health care and service delivery systems are typically large and complex with many interacting components, including patients, doctors, nurses, medical suppliers, health insurance providers, and health care administrators. These systems are often complicated by factors such as individual differences among stakeholders, organizational beliefs and culture, differences in occurrence of epidemic diseases and economics, specifically, the availability of resources and wealth of the affected community, region, or country shaping the particular system. Moreover, vaccine shortages,

epidemic outbreaks, staff shortages, canceled operations, ever increasing paperwork, and sudden change of regulations add another dimension to the complexity of health care (Tan, Wen and Awad 2005).

The public health system in developing countries has multiple levels. At the national planning level, the central government is usually the main actor in public health policy formation. Within that government, various agencies are responsible for public health policies and programs, including the Ministry of Health, the Ministry of Labor, and the Ministry of Education. The local implementing level consists of hospitals, clinics, rural medical personal and traditional healers. Foreign aid organizations interact at both these levels in a variety of ways, though they are not incorporated into the local system, forming their own policies and programs that create interactions that lead to evolution of the foreign aid system separately from the local public health system.

2.2 INSTITUTIONAL ANALYSIS AND DEVELOPMENT (IAD) FRAMEWORK

Complex adaptive systems operate in constantly changing environments where uncertainty, risks and surprises are unavoidable. Resilience is vital for these systems to be sustainable. They must have the ability to adapt to a wide range of external and internal pressures while still functioning. In addition, they have to initiate change through innovations in order to continuously improve performance (Fiksel 2003, Folke 2006, Gruen et al. 2008). Due to their complexity, these systems are often difficult to understand and the drivers of innovation and performance hard to identify. Ostrom's (2005) institutional analysis and development framework harness the complexity by providing a way to understand the relationships between organizations and

recognizing (and accounting for) the dynamic changes that occur within systems by examining organizations and actors as operating within action arenas that yield outcomes, evaluations and result in information that feeds back into the process.

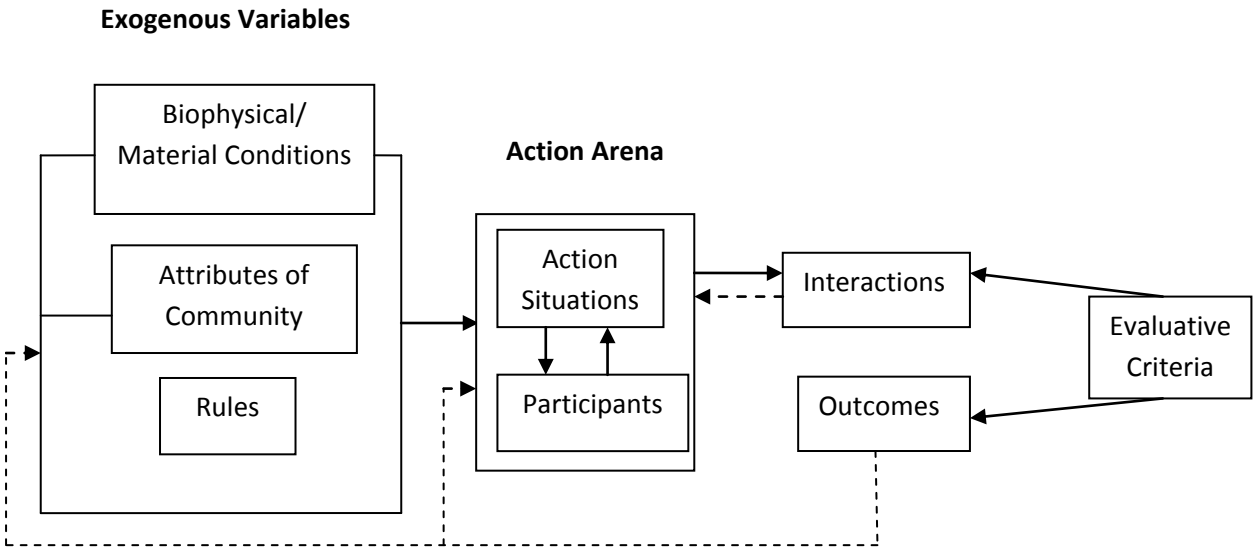

Figure 2: Institutional Analysis and Development Framework (Ostrom 2005)

A major problem in understanding institutions and institutional change is the diversity of situations, actors and interactions. Institutional and cultural factors affect expectations about the behavior of other actors, with previous interactions influencing those factors. Decision-making is the result of many layers of internal processing and cognitive structure. "Building on top of the single individuals are structures composed of multiple individuals – families, firms, industries, nations and many other units – themselves composed of many parts and, in turn, parts of still larger structures. What is a whole system at one level is a part of a system at another level" (Ostrom 2005, 11). Complex adaptive systems are composed of a number of these 'nested sets' of actors and structures.

The institutional analysis and development framework (IAD) uses the action arena as the focal level of analysis, where exogenous variables (biophysical/material conditions, attributes of the community, and rules that structure interaction) affect the structure of the action arena, generating interactions that produce outcomes. Evaluative criteria are used to judge the performance of the system by examining patterns of interactions. Actor interactions and outcomes feed back into the action arena and into the system as a whole, affecting the action arena structure, the processes of interaction and the environment in which actors operate. The IAD framework is a constantly evolving, adapting structure. Figure 2 displays how the IAD Framework works.

An action arena can be 'unpacked' to include action situations and participants. The action situation is the social space where participants with diverse preferences interact, exchange goods and services, solve problems, dominate one another or fight. It can be characterized using seven clusters of variables: 1. participants (who may be single individuals or corporate actors), 2. positions, 3. potential outcomes, 4. action-outcome linkages, 5. the control that participants exercise, 6. types of information generated, and 7. costs and benefits assigned to actions and outcomes (Ostrom 2005). In addition, an action arena can be examined as a dependent variable, affected by three clusters of exogenous variables: 1. the rules used by participants to order their relationships, 2. the attributes of the biophysical world that are acted upon in these arenas, and 3. the structure of the more general community within which any particular arena is placed.

This is a dynamic framework that allows for participants, their interactions and the social space in which those interactions occur, to be understood in a context where exogenous conditions as well as previous interactions and outcomes feed back into the structure. Learning and adaptation occur over time, though whether or not that learning leads to positive interaction

depends on previous interactions, outcomes, how they are evaluated and environmental conditions that may or may not inhibit positive change. There are numerous ways for these participants to interact, but in terms of the Global Fund structure and processes, the key interactions include communication, knowledge sharing and resource linkages. Outcomes can improve when knowledge is being shared and communication open, with increased communication often leading to improved coordination and collaboration. In addition, though linkages can exist between participants without resource links, it is important to examine the resource interactions to determine if the knowledge and communication are leading to better placement of funding to combat public health problems.

2.3 ACTION ARENAS

Elinor Ostrom's (2005) IAD framework can help to address the research question in this project. The Global Fund process within a country can be examined as an overlapping action arena, where participants interact with one another in a social space. The Global Fund action arena allows for interactions between participants that yield a structure of relationships that illuminate the participant's position within the process. In addition, the process and structure of relationships lead to outcomes that generate information that feed back into the process to inform future program planning and implementation. The Global Fund builds on and alters some long-standing relationships between these participants, and creates new ones. Figure 3 is a representation of the variety of organizations involved in the public health and foreign aid systems within a country.

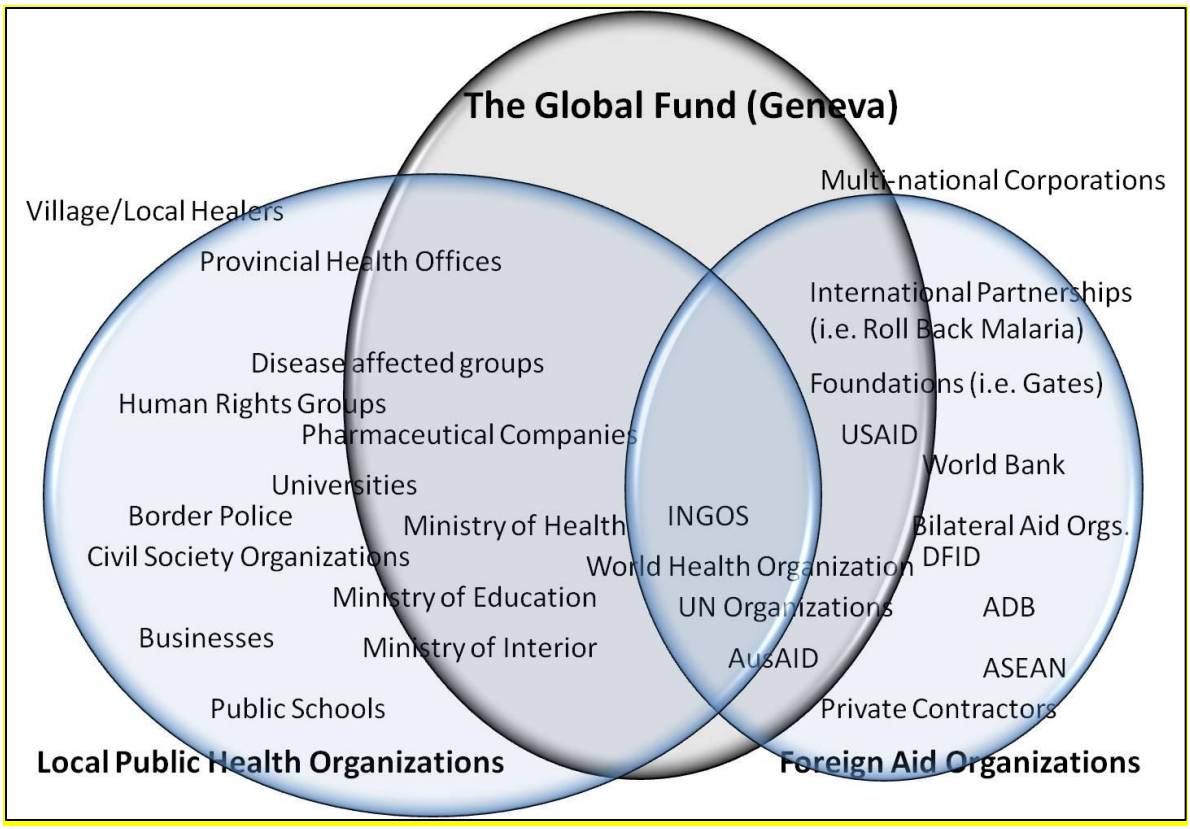

Figure 3: Overlapping Action Arenas

2.3.1 Global Fund as an Overlapping Action Arena

The Global Fund creates its own action arena when it enters a country, but the actors involved are also part of the public health and/or foreign aid arenas within that country. Therefore it has an opportunity to influence the functioning of those arenas, but at the same time is saddled with the history of organizations (that may be negative and distrustful) and linkages that may be detrimental to the success of programs (e.g. familial ties across organizations that ensure they work together to the exclusion of everyone else). The Global Fund action arena overlaps the foreign aid and local public health system and incorporates attributes of both. However, over time the Global Fund process for planning and implementing programs results in interactions

that influence the interactions and relationships within the Global Fund process and within the other two systems. Figure 3 displays the entire action domain that is created, a domain that includes the Global Fund process as an overlapping action arena as well as the two action arenas it overlaps.

The Global Fund operates in both the international aid system and public health system, influenced by the exogenous variables from both, including the biophysical and material conditions that exist (e.g. the limited amount of funds available for aid or the amount of trained physicians and availability of drugs), the attributes of the community (the cultures that exist in both system as a result of a long history of interactions) and rules that govern the system. However, the Global Fund and those it funds constitute an action arena, composed of participants that include the Global Fund itself, the principal recipients, sub-recipients, technical advisors, CCM members, beneficiaries, and the local fund agent. They operate within a social space that is influenced by the conditions, attributes and rules of both the international aid system and the public health system. Through the process of obtaining Global Funds, planning and writing proposals, enacting programs and evaluating the results, these participants interact and produce outcomes, which in turn feed backs into the action arena of the Global Fund, but also into the conditions, attributes and rules of the international aid and public health systems.

2.4 ORGANIZATIONAL COLLABORATION

Organizations collaborate for a variety of reasons. The challenge of finding a balance between differentiations in roles, occupations, and responsibilities and a need for integration and coordination that encourages people to work together effectively and efficiently towards a larger

organizational mission highlights one of the fundamental tensions identified in organizational theory and practice (Jaffee 2001, Shigayeva, Atun, McKee and Coker 2010). The literature has discussed economic and strategic benefits to organizations that collaborate; in addition, in recent years the number of inter-organizational relationships mandated by law or as a result of funding requirements has risen (Bailey and Koney 1996, Galaskiewicz 1985). Regardless of why organizations collaborate, the relationships between these agents that encourage various types of collaboration, and relationships that are absent, are important to understand when studying how policies are created and implemented and whether they are effective or incomplete.

2.4.1 What is Collaboration?

Collaboration is a "process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited versions of what is possible" (Gray 1989, 5). There are different types of collaboration, from information sharing to program coordination and joint planning to integration of systems (Guo and Acar 2005). The literature is inconclusive on what types of collaboration are best in different situations. Collaboration can be understood in terms of content (e.g. service components, financing and planning activities) and level (national or local) (Wang et al. 2007). In addition, collaboration between organizations or actors results in evolving relationships that create dynamic situations (Hardy et al. 2003) and may generate ties between organizations not directly involved in the change. The network transformation effects of collaboration may be much greater than the creation of a link between two actors, and the effects of the collaboration on network position may vary widely between organizations (Dyer 1996, Wasserman and Galaskiewicz 1994).

2.4.2 Why do Organizations Collaborate?

Resource dependency theory states that organizations collaborate in response to turbulent conditions in the resource environment (Pfeffer and Salancki 1978), helping them acquire critical resources and reduce uncertainty. However, these relationships come with costs, including the loss of operating autonomy (Provan 1984). Institutional theory focuses on collaboration as a means to improve an organization's sustainability and legitimacy by establishing linkages or exchanges with other organizations to meet necessary legal or regulatory requirements (Meyer and Rowan, 1977, Meyer and Scott 1992). In addition, collaboration can be seen as a mechanism to reduce transaction costs and thereby maximize economic benefits (Foster and Meinhard 2002, Sharfman, Gray and Yan 1991, Williamson 1975, 1985, 1991). It can also be examined through a network theory lens, which argues that organizations are embedded in a wide variety of networks that both constrain their actions and provide them with opportunities to achieve their goals (Granovetter 1985). These networks create opportunities for cooperation by creating deepening awareness of other organizations, trust and commitment between groups (Larson 1992).

2.4.3 Why is Collaboration Needed?

Collaboration is needed within public health and foreign aid systems and between these systems. Within public health systems, particularly in developing countries, collaboration is needed to provide quality and quantity of services. Dysfunctional systems increase chances patients will experience high rates of treatment failure (Shigayeva, Atun, McKee and Coker 2010). In addition, collaboration reduces fragmentation or duplication of services, improves patient care

outcomes and results in greater satisfaction with services, offers benefits to overall population health, and improves the performance of health systems, their programs and services (Shigayeva, Atun, McKee and Coker 2010). This is important in systems where funding is often lacking and where efficiency and effectiveness of program can mean life or death. Specifically, malaria, TB and HIV/AIDS have environmental and institutional factors that increase certain populations vulnerability to them. For example, the prevalence of HIV/AIDS is higher around borders of countries than in internal areas. In addition, imprisonment increases vulnerability to AIDS as a result of sexual violence, sharing needles among IDUs and tattooing. Ecological or social disturbances that initiate the movement of large groups of unprotected, non-immune and physically weakened people can increase their vulnerability to malaria. Other factors that increase vulnerability include the lack of geographic access to healthcare, the unwillingness to seek treatment (i.e. stigmatization of AIDS is often a huge disincentive to access treatment), and the poor quality of health care.

As a result of these factors, it is important for different types of organizations to collaborate to create and enact programs. Nonprofit organizations working along the borders with migrant populations are often better at reaching those populations than the government health clinics, though the government clinics many more resources; collaboration would help governments reach the most vulnerable populations while at the same time allowing nonprofit organizations to receive needed technical assistance, drugs and funding.

It is important to note that not all collaborating organizations are created equal. Different organizations play different roles in the system, with some taking leadership roles and other bridging gaps between groups. There is an increasing acknowledgement in the literature that key actors (e.g. politicians and other key stakeholders) play a vital role in resolving conflicts,

providing leadership and creating supporting initiatives (Atun et al. 2005b, Mur-Veeman et al. 2003, van Raak et. al 1999, van Raak et. al 2005) within collaboration. Therefore, it is important to understand the key actors and how they may be of help in encouraging collaboration. Within the literature there is no consensus on what ideal structure of a public health program to address HIV/AIDS, TB or malaria would be. Because these are complex systems addressing complex problems, the optimal actors within the system would vary by context. In addition, there is no convincing evidence that demonstrates that integration improves access to care, service quality, program efficiency or effectiveness or equity of care. Lack of evidence may be due to the nature of integration, which is clearly multifaceted and complex (Howarth and Haigh 2007, Nolte and McKee 2008).

Organizations within foreign aid systems often do not collaborate with one another, resulting in redundant programs, competition for resources, and a lack of harmonization among donors. The lack of collaboration between organziations within this system results in a lack of learning over time (Easterly 2006). The proliferation of donors within local systems creates 'fragmentation', resulting in increasing transactions costs for recipients (because of different donor reporting requirements, procurement rules) and lack of true institutional learning and development (Birdsall 2005). In addition, the lack of collaboration between donors results in 'poaching' of local qualified staff away from local institutions and those recipients with higher donor fragmentation show greater declines in a measure of bureaucratic quality between 1982 and 2001 (Knack and Rahman 2004). There is evidence that donor proliferation and fragmentation hurt recipient country institutions, which inhibits local development and program effectiveness.

The lack of coordination between local systems and foreign aid systems results in inefficient programs, with duplication of services and sometimes conflicting programs (e.g. an education program that stresses abstinence as the only HIV/AIDs prevention technique versus a program that hands out condoms). In addition, given the size of foreign aid within a local system, it can distort how a country would naturally develop, instead creating programs based on foreign agendas rather than local needs (Howell and Pearce 2000). Nonetheless, foreign aid agencies can contribute in two main ways; they can provide financial resources and they can provide technical resources. Without collaboration between local systems and foreign aid systems there will be inefficient use of financial resources due to overlap of programs and conflict of program goals and ineffective programs because of the failure to include the technical knowledge into program design and implementation.

Despite lack of empirical evidence, the prevailing view has been that interdependent groups of two or more organizations that consciously collaborate and cooperate with one another are more effective at providing services than the same organizations are able to do when they go their own ways (Alter and Hage 1993). The logic behind this belief builds on concepts from game theory that cooperation will produce outcomes that are more favorable to both parties than when the parties compete (Axelrod 1984). The belief has been especially strong in health and human services, where norms of competition have not been nearly as strong as they have in the for-profit business sector. In the public sector resources are often scarce, clients have multiple problems, service professionals are trained in narrow functional areas, and agencies maintain services that fit narrowly specified funding categories. Under conditions like these, networks of providers offer a way to provide services effectively while still maintaining acceptable levels of

organizational and professional autonomy, though good comparative network data that are tied to outcomes are scarce (Lehman et al. 1994, Provan and Milward 1995).

2.4.4 Types of Collaboration – Planning Programs

Collaboration can take many forms and can be conceptualized in terms of content and level (Wang et al. 2007). The structure imposed on countries by the Global Fund operates at two different levels, with the CCM planning programs and operating on a national level, and the recipients of the funds enacting programs and operating on the local level. The benefit of planning programs together, which includes sharing knowledge and communicating with one another, can improve programs, leading to the provision of better quality of services. However, the organizations involved in this process come from the public health action arena and the foreign aid action arena, and have historical relationships that influence their interactions. In addition, collaboration is not a static concept, but one in which relationships are dynamic and adapting to internal and external factors. The collaboration literature focuses on types of collaboration (Guo and Acar 2005) and the 'why' of collaboration (Sowa 2009), but rarely examines how relationships change over time.

Levels of coordination can differ widely, from linkages between actors, defined as unstructured interactions such as referrals and sharing of information, to merging two programs or organizations into one. In between, organizations can have goal-oriented interactions such as common strategies to address related health issues, sharing information in a planned manner and implementing certain activities together (Shigayeva, Atun, McKee and Coker 2010). The organizations working on Global Fund programs mostly fit into the middle category, working together for a common goal, yet maintaining autonomy.

2.4.5 Types of Collaboration – Implementation Programs

The Global Fund encourages organizations to collaborate in implementation but, unlike the creation of the CCM, it is not mandated. Organizations that collaborate in implementation of programs can share information and resources (e.g. facilities), coordinate their programs or jointly implement programs (Guo and Acar 2005). This can take a variety of forms and is dependent on the program and organization to determine which level of coordination would best serve the program outcomes and beneficiaries. These organizations can benefit by decreasing their costs through sharing resources, by improving their programs through access to more and better information, and by increasing their standing in the field but working with those with already established reputations (Sowa 2009). In addition, both public and private agencies can benefit from collaboration with the other by improving visibility, increasing access and improving their reputation in local communities.

2.5 EVALUATION OF THE GLOBAL FUND

The Global Fund has been evaluated and examined since its inception and, overall, is seen as having a positive impact in terms of both achieving their own objectives and of being welcomed by countries (Caines et al. 2004, Kober and Van Damme 2003, Sherry, Mookherji, and Ryan 2009). Though much of the literature written about the Global Fund is done from an organizational level, the real issues that remain relate to its operations at a country level. The effectiveness of Global Fund depends in large part on technical assistance and the capacity building provided by partners. These partners must be incorporated into the system, and over

time, one hopes to see more connections between the technical agencies and those who would utilize their expertise. It is important to examine country level information and evolving partnerships to understand if the Global Fund is successful (Caines et al. 2004). In addition, since its inception, there have existed serious concerns about sustainability and the ability of the health systems in the developing world to incorporate large amounts of funding. Without system wide improvement (training, building infrastructure, policy change) these programs are not sustainable.

2.5.1 Organizational Evolution

Over time, the Global Fund has evolved and changed, with internal and external evaluations a staple for the organization. For example, the U.S. Government Accountability Office (GAO) has performed numerous evaluations of how the Global Fund functions and its successes and challenges. Throughout the years, a continual theme in these evaluations is the information asymmetry between the Global Fund, based in Geneva, and local systems. The lack of information, or lack of reliable information, makes it difficult to make decisions and for the Global Fund to function optimally (GAO 2003, 2005, 2007). Evaluations of the Global Fund management system have shown that they are under-staffed and responsibilities and oversight is not clear (Booz Allen Hamilton 2007). In addition, the Global Fund does not have good knowledge sharing across the organization, with people failing to collaborate, resulting in inefficiencies and delays (Booz Allen Hamilton 2007).

The mechanisms the Global Fund uses in the funding process remain problematic, specifically the country coordinating mechanisms (CCM), which plans programs, and the local fund agents (LFAs), who evaluate them. The Global Fund mandates that the CCM consist of

government officials, civil society members, technical agents (e.g. international organizations), and groups representing those affected by the diseases. However, evaluations of the CCMs find that membership is dominated by government and members are not equal in decision-making (Brugha et al. 2004, The Global Fund 2004). In addition, lack of funds limits participation of those outside of the central area (capital) and a conflict of interest exists where CCM members and principal recipients are the same (The Global Fund 2004).

Coordination between Global Fund projects and national strategies is improving with time, though there are still incomplete information transfers between the Global Fund and the CCMs, resulting in an environment of uncertainty (Brugha et al. 2004). There is also concern about the limited capacity of fund recipients—government and non-government—to meet Global Fund conditions for performance-based disbursement. Delays in payment of funds to implementing agencies have frustrated rapid financing of disease control interventions (Brugha et al. 2004) and are a large problem for small NGOs that often do not have extra money to pay for programs out of pocket while waiting for reimbursement, so delay beginning of programs, resulting in failure to meet performance measures. The limited monitoring and evaluation capabilities of many recipients raise questions about the accuracy of their reporting, especially problematic given the Global Fund's focus on performance-based funding. In addition, the Global Fund is not consistent in documenting performance that warrants additional funding, with decisions to disburse funds to some recipients who reported that they had met few targets (GAO 2005).

The local fund agents (LFAs) remain the most problematic Global Fund mechanism, given their power to determine if organizations are reaching performance targets. The Global Fund lacks the information to properly oversee the LFAs, which is a huge problem since they

rely heavily on their information to determine continued funding decisions (GAO 2007). In late 2006, the Global Fund commissioned an evaluation of the LFA system under the oversight and guidance of the Technical Evaluation Reference Group (TERG), an independent advisory body of the Global Fund Board. It found that gaps in verification and documentation in evaluating programs, lack of consistent management approach and a weakness in health programmatic skills exist. The LFAs are accountants who have little expertise in public health and often dismiss the complexities that exist and look only at numbers recorded. Finally, they found the LFAs had little access to those implementing the programs and there exists a trade-off between greater LFA involvement and independence (TERG 2007). The Global Fund has limited access to the information it needs to manage and oversee LFAs because it does not require systematic assessments of LFAs' performance. As a result, the Global Fund has limited ability to determine the quality of LFAs' monitoring and reporting and to identify situations in which more oversight of LFAs' performance may be required (GAO 2007).

The Global Fund has evolved since its inception, though that evolution has not always been positive. Some authors claim that over time, the Global Fund Board's focus drifted from long-term and strategic issues toward ad hoc, incremental decision making and to operational details. The Fund increasingly is becoming a stand-alone entity with a growing and complex portfolio of grants that require large numbers of global staff to maintain effective financial oversight in countries. The sheer size of its growing responsibilities as grant disbursement and oversight entity comes at the expense of its strategic leverage in the global development architecture (Sherry, Mookherji, and Ryan 2009).

2.5.2 Effects on Local Public Health and Foreign Aid Systems

There is a belief in the Global Fund that programs and policies will be more effective in combating public health problems if there are collaborations between different types of organizations in different sectors ((International HIV/AIDS Alliance and the Global Fund 2008, Toksoz and Connor 2010). Specifically, civil society should play a role in planning and implementation:

> The Board believes that civil society and the private sector can, and should, play a critical role at all levels of the architecture and within every step of the processes of the Global Fund, at both the institutional and the country levels…The Board further expresses its desire for strengthened and scaled-up civil society and private sector involvement at both the country and Board levels, while recognizing the respective strengths and roles of the two sectors. (International HIV/AIDS Alliance and the Global Fund 2008, 5).

The for-profit private sector can also have a large impact. It can make monetary or in-kind donations, help support implementation, provide commercial goods and services on a socially responsible basis, and serve as a public advocate and contributor to good governance ((Toksoz and Connor 2010). For example, in Thailand, Chevron is working to increase AIDS awareness among Thai youth by working with the NGO PATH, a Global Fund grant sub-recipient. In addition to other programs, the two groups worked together to get gas stations in Bangkok to distribute 30,000 AIDS information brochures to young drivers of public transportation motorcycles. Clinics near the Caltex stations reported a three percent increase in visits during the awareness campaign (Toksoz and Connor 2010).

The Global Fund hypothesizes that its programs will improve a country's public health system as a whole, not just the treatment of the three diseases it funds. It believes that its proposal and planning processes enhance the range of actors that inform policy and implementation of these disease control activities, which should improve relationships and other

planning and implementation activities for public health problems (The Global Fund 2003). In addition, the explicit inclusion of the private sector, including both for-profit and non-profit organizations, will create innovative solutions to these problems, drawing a greater diversity of actors into the public health system, which in turn will improve innovation in other disease control activities (The Global Fund 2003). The Global Fund believes its programs will affect human capital by training health workers, increasing both quantity and quality of workers. Finally, approximately 50 percent of Global Fund money already committed will procure pharmaceuticals and commodities. This injection of funding should affect procurement, supply and distribution systems, and the quality and prices of other drugs and commodities (The Global Fund 2003).

In addition to improving the local public health system, the Global Fund purports to improve the local foreign aid system by incorporating foreign aid actors into the process, thereby reducing redundancies and conflicting programs. The Global Fund aims to change foreign aid from individual donors enacting their agendas to pools of donor funding directed towards large problems, identified by local stakeholders. The belief is that through the Global Fund process, donors will be incorporated into the system and fragmentation will be reduced.

Studies about the effect of the Global Fund on local environments reveal that the process on the ground is confusing and often bureaucratic, and true collaboration is often not happening in reality, with government taking control of program and funding decisions (Kober and Van Damme 2003). In addition, the broader impacts of the Global Fund process on the two systems it overlaps are not well studied. One study found that, though the Global Fund contributed to improving availability and access for the three focal diseases, it did not have significant impact on improving access to general health services (Chkhatarashwili, Gotsadze, and Rukhadze 2008). Nonetheless, as a result of the Global Fund, the local government was able to reallocate funds to other health problems and the interactions which occurred between participants facilitated

public-private partnerships, improving NGO capacity development, and helped create social networks of people affected by these diseases (Chkhatarashwili, Gotsadze, and Rukhadze 2008). There is still not enough data to make generalizations about the Global Fund's effect on local public health or foreign aid systems. This study aims to make a contribution to that end.

2.5.3 Impact on Disease Prevention and Treatment

The ultimate goal of the Global Fund process is to improve the health of local populations. To date, the Global Fund has had a large impact on treatment and prevention of these three diseases, with Global Fund supported programs resulting in 544,000 new people on antiretroviral drugs (ARV), 1.4 million on directly observed treatment short course, or DOTS (treatment for TB), and 11.3 million insect-treated mosquito nets (ITNs) distributed by June 2006 (Komatsu et al. 2007). These programs contributed to 18% of international ARV targets, 29% of DOTS targets and 9% of ITNs in sub-Saharan Africa by mid-2006. However, there is still a significant gap, with greater financial support needed, particularly for HIV, in order to achieve international targets for 2009 (Komatsu et al. 2007).

One of the Global Fund's goals is to create sustainable programs that can exist after their funding runs out. However, some have argued that they face the same limitations of all short-term project-based funding that seeks to address problems that deep down are fundamentally related to poverty in these poor countries. Until these larger and deeper problems are solved, though the project benefits will be real, they will last only as long as the project is adequately funded and reach only those in the project area (Poore 2004). In addition, it is argued that the large amounts of money provided by the Global Fund can distort government efforts at long term health care planning (Poore 2004). Others argue that these problems can be combated by

strengthening the health systems, developing human resource capacity, addressing poverty and achieving results, though these will take time that should be given (Nantulya 2004). Others claim that the Global Fund can succeed if it does not operate alone, but tries to integrate into pre-existing systems and expand and improve pre-existing programs (Mogedal 2004).

2.5.4 Gaps in the Literature

There is a significant amount of literature about the Global Fund as an organization and about its impact on public health, but there is a gap in the literature that links the Global Fund process to local public health and foreign aid systems and none that examines how relationships change over time. This process is touted as a new form of foreign aid, one in which different types of actors within the process interact with the goal of improving programs. However, this cannot occur if the relationships between these groups are not understood and how they learn is not explored. The theoretical framework of this research project represents a novel way of examining the impact of the Global Fund process on the systems it overlaps.

2.6 STRUCTURE OF ORGANIZATIONAL RELATIONSHIPS

2.6.1 The Importance of Structure

Organizations interact within the Global Fund process, creating a network of organizations that work together to plan and implement programs. The interactions between organizations can affect the creation of other relationships, external rules of interaction, and the outcomes of the

programs. In addition, the position of an organization within this network, how that position changes and what that position means for that organizations' power varies by organizations (Dyer 1996, Wasserman and Galaskiewicz 1994). Networks exist throughout the world, actions are embedded within an ongoing network structure and all actions cannot be explained by reference to individual motives alone (Granovetter 1973, Nohria and Eccles 1992). Arguments surrounding the structure of a network and its effect on people's actions abound. Some argue that the real issue is not the weakness of a tie (Granovetter 1973) but the structural hole it spans (Burt 1992), with the weakness of a tie a correlate but not the cause.

2.6.2 Networks

Scholars who study networks would most likely agree that there is no single grand theory of networks (Faulkner and de Rond 2000, Galaskiewicz 2007, Kilduff and Tsai 2003, Mong and Contractor 2003). However, theories about networks come from two different, though complementary perspectives – an organizational level (or actor level) or from a network level of analysis (whole networks) (Provan, Fish and Sydow 2007). In addition, networks can be examined from a community perspective by assessing aggregate outcomes for the population of clients being served by the network (Provan and Milward 2001).

The interactions between actors can be used to construct networks. The structure of the interactions reveals many things about the participants within the networks as well as about the system as a whole. Social networks consist of many small overlapping groups that are densely internally connected and that overlap by virtue of individuals having multiple affiliations. Also, social networks are not static but are dynamic and not all potential relationships between individuals are equally likely. In addition, the probabilities of future relationships are path

dependent on prior relationships, and people do what they do sometimes solely as a matter of intrinsic preferences or characteristics, sometimes due to surrounding social structure, and usually because of a mixture between external and internal influences (Watts 2003).

The Global Fund's creation of the CCM and the subsequent funding flows create a network of organizations that work with the funds to enact their programs. In order to understand if the funds are helpful or harmful, it is necessary to understand the relationships between agents (Contractor, Wasserman and Faust 2006). The relations may be any kind of linkage between actors, including formal role relations, affective expressions (friendship, respect), social interactions, workflows, transfers of material resources (money, goods), publishing and retrieval of knowledge, flows of nonmaterial resources (information, advice), and business alliances (Contractor, Wasserman and Faust 2006). The challenge in governing networks involves linking a broad range of actors at multiple scales to deal with the interrelated dynamics of resources and systems, management systems and social systems, as well as uncertainty, unpredictability, and surprise. The essential role of individuals needs to be recognized in this context (e.g., leadership, trust building, vision, and meaning); their social relations (e.g., actor groups, knowledge systems, social memory) and social networks serve as the web that tie together the adaptive governance system (Folke, Hahn, Olsson and Norberg 2005).

Networks are a way of examining the world that looks at the structure of connections. "Influences and acts among actors run through ties, and how they cumulate into significant actions are heavily influenced by the shape and connectivity in the networks of those ties" (Nohria and Eccles 1992, 92). In addition, action is not merely formed by formal structure, especially, when actions take place in a fluid, dynamic and emergent context in which the structure of network is unstable. An organization is a consequence of the interaction among the

relational network, its member's attributes, and its formal structure. Organizational relationships can be examined through inter-organizational linkages or intra-organizational linkages depending on the research question.

2.6.2.1 Organizational Level of Analysis

Much of traditional social science studies attributes of individuals whereas network analysis studies attributes of pairs of attributes. Researchers might measure the strength of the friendship (Krackhardt 1992) or its duration or the reason for its existence. In sexual networks, what is actually measured is typically the frequency of sexual contact with each partner. In communication networks, researchers may record both the frequency and the length of individual communications between pairs of actors (Borgatti and Everett 1997).

Network formation is a complex process in which many individuals simultaneously attempt to satisfy their goals under multiple, possibly conflicting, constraints. For example, individuals often interact with others similar to themselves, which may result in conflicts in regards to resource acquisition, legitimacy and power (Kossinets and Watts 2006). Actors may benefit from cooperative relationships and emphasize embedded ties (e.g. they may choose new acquaintances who are friends of friends) (Granovetter 1973). However, actors who seek connections outside their current circle may access novel information and resources and may span structural holes between actors who do not know one another (Burt 1992). Other authors found that social proximity is more relevant for the degree of knowledge spillovers than geographical proximity (Breschi et al. 2003, Singh 2005).

Examinations of the structure of networks found that an actor's centrality, especially in the communication network, most strongly contributes to his power (Nohria and Eccles 1992). There are different arguments on the benefits of different intensities of networks. For example,

Granovetter emphasized the strength of weak ties in helping a person to find a job (1973), where it was connections outside a person's close circle that helped the most. However, both strong and weak ties can be beneficial for actors, depending on the contexts and goals of the network and the actor. Krackhardt found that strong ties (friendship) in an organization can be important in the success of a firm (Nohria and Eccles 1992). In addition, the development of information technology has changed the communication methods within networks, with electronic media often replacing face-to-face interaction. As a result, as the amount of electronic interaction in organizations increases, the amount of face-to-face interaction should be increased, or the network will lose its robustness and become ineffective (Nohria and Eccles 1992).

Network analysis from an organizational perspective primarily examines various types of centrality measures, frequency of linkages and clique membership. Actor degree centrality examines the total number of connections between that actor and others in the network as a function of the total number of possible connections. In a directional network, actor degree centrality can be examined as in-degree, the number of ties an actor receives, or out-degree, the number it sends (Knoke and Yang 2008, Wasserman and Faust 1994).

There are two other main centrality measures that examine an actor's position in relation to other actors. Betweenness centrality measures the extent to which an actor lies on a path (shortest distance) between pairs of actors, which is an important indicator of control over knowledge exchange and resource flows within a network (Knoke and Yang 2008, Wasserman and Faust 1994). These actors can serve as gatekeeper to groups. Closeness centrality reflects how near a node is to other nodes in the network, and can show how quickly an actor can interact with intermediaries (Knoke and Yang 2008, Wasserman and Faust 1994). When examining a network, such as resource transfer or communication, the actors with the most access or control

or are the most active will be the most central (Wasserman and Faust 1994). Though there is no agreement in the literature about how central an organization needs to be to be 'prominent', it is agreed that an organization that is central is most visible (Wasserman and Faust 1994), which may increase its power and influence.

2.6.2.2 Network Level of Analysis

Networks that are not connected very well prevent information, knowledge and adaptation from spreading because they are constrained by the limited number of connections. However, networks that are highly connected are also constrained, because each node takes into consideration the large number of nodes around it and is therefore constrained from changing. Thus, in social contagion, a system will experience system wide change only if it strikes a trade-off between local stability and global connectivity. Learning occurs in networks through interaction, which informs the network, which in turn encourages interaction.

Work at the network level is still in its infancy and has primarily been conceptual, anecdotal or based on a single, descriptive case study over time (Morrisesey, et al. 1994, Provan and Milward 1995, Provan et al. 2003). Typically organizational level network measures are aggregated, though there are unique network level properties that can be studied. Specifically, density, fragmentation or structural holes, centralization, and cliques are examined (Provan et al. 2007). Density measures the overall level of connectedness among organizations in a network, with an understanding that higher levels are not necessarily advantageous, given the increased coordination burden placed on network members in this case. Fragmentation examines whether the network is broken into fragments of organizations that are unconnected to other clusters of organizations. This indicates there are structural holes and opportunities for organizations to

improve functionality of the network (Burt 1992, Provan et al. 2007). Highly centralized networks may be organized more in a 'hub and spoke' pattern, known as a scale free network (Barabasi 2002), whereas decentralized networks are far more dispersed. In delivery of services and creation of policy, decentralized networks may not be the most effective. Finally, whole network studies can examine the clique structure within (total number, types, and connections between them) (Provan et al. 2007). This can reveal how fast things will travel through the network, what conflicts may arise, where overlaps between groups may be and can help identity those actors who may be bridges between groups.

There is little agreement throughout the literature about what is the optimal shape and size of a network to best create and deliver services. A study of public health systems found that different services performed better in different system structures. Health status monitoring, informing and educating the public, and workforce development were more effective in a decentralized system, while development of health policies and programs, enforcement of health laws, and evaluation of health services were more effective in a shared-authority system (a more 'hub and spokes' type system) (Mays et al. 2006). These findings may be because shared authority systems are able to take advantage of the public health expertise and infrastructure available at the state level while maintaining local flexibility to adapt activities to community needs as appropriate (Mays et al. 2006).

2.6.2.3 Community Level of Analysis

Most scholarship on networks examines them from an organizational perspective, with emerging scholarhsip now studying whole networks. Networks can also be evaluated from a community level, the most complex and difficult because it seeks to understand networks by their contribution to the building of social capital (Putnam 1993). By working together,

organizations in a community learn to understand and trust one another, as well as learn whom not to trust. This learning can be extremely important, not just for the production of current services, but also for the joint production of services to be performed in the future, particularly in other service domains.

At the community level, a nework of organizations is successful if it provides the best quality and sufficient quantity of services. In terms of health care, over time, this network should adapt to better comprehensively treat people. The challenge is finding the balance between a network that offers only a limited range of services and one where too many agencies and programs are be involved, resulting in a confusing array of services with considerable duplication of effort. The network of organizations treating certain diseases should gradually expand to include both critical and more peripheral services within the network's core service domain. As the network continues to evolve and mature, effectiveness would then be judged by the mix of agencies across service domains (Provan and Milward 2001).

2.6.3 Adaptation: Learning, Change and Structure

Traditional economics saw people as rational, utility maximizing, and as possessing perfect information. However, this belief, particularly that people possess perfect information, has been refuted. The lack of perfect information means that humans create institutions and organizations to help structure their lives and society, with imperfect information resulting in flawed institutions and organizations (North 1990, Williamson 2000). An organization is a “complex pattern of communication and relationships in a group of human beings” and “is important…because, by structuring communications, it determines the environment of information in which decisions are taken” (Simon 1976, introduction to the third edition). This

communication helps organizations and the people within them obtain common knowledge that can help an organization learn and adapt. The purpose of organizations is to coordinate and further the interest of their members (Olsen 1965). Organizations can perform a function when there are common or group interests, and though organizations often also serve purely personal, individual interests, their characteristic and primary function is to advance the common interests of groups of individuals.

Though learning by both individuals and organizations is important for change to be enacted, the structure of the system, and people's understanding of that structure, can also help enact change. This debate is about the vertical or horizontal relationships among actors and organizations, and understanding how structure can affect information, trust and the ability to change. In addition, though not explicit, all social scientists who study public policy recognize the chaos that exists in the world and within systems, with the management of that chaos the fundamental concern of public policy. Max Weber, Frederick Taylor and even Herbert Simon and Charles Lindblom for a time, thought that the establishment of hierarchical relationships and institutions was the best way to tame complexity. However, Aaron Wildavsky, Deborah Stone and eventually Charles Lindblom argued that the chaos of politics and free human interaction are necessary elements for successful policy change to occur. The 1980s and 1990s saw a burst of literature about the structure of the system, all trying to understand the chaos and how to tame or harness it to produce more effective public policies.

2.7 LINKING LITERATURE TO THE RESEARCH QUESTION

Examining the Global Fund process as an overlapping system helps to address the question of how interactions within this system result in structural and substantial adaptation within the process and within the foreign aid and the public health system in Thailand. The Global Fund as an action arena that overlaps the foreign aid and public health action arenas form a new 'action domain' in which the interactions within the overlapping system yield changes within both the public health and foreign aid system. This is a novel way of examining systems and system change.

Collaboration improves program effectiveness and reduces unwanted consequences within both the foreign aid and public health systems. The Global Fund process engenders collaboration and results in interactions that lead to learning and adaptation. These interactions result in new and different relationships and give rise to a network of inter-connected organizations. By examining the Global Fund process as an action arena in which organizations interact, leading to the emergence of a network structure that change over time, this research addresses questions of adaptation.

3.0 RESEARCH DESIGN AND METHODS FOR INVESTIGATION OF OVERLAPPING ACTION ARENAS

This research seeks to understand the extent to which the interaction between the international aid system and the public health system in Thailand generated change in both systems. This exploratory research seeks to understand how the Global Fund, by creating collaborations between organizations, can influence how both the public health and foreign aid arenas work within a country. This research examines the case of Thailand to explore how interactions between organizations leads to structural and substantive changes over time within the Global Fund action arena, which is composed of three action situations (HIV, TB and malaria). In addition, it examines how the interactions within the Global Fund process ultimately leads to change and adaptation within the two action arenas it overlaps. By understanding how relationships evolve within one country, the research yields hypotheses and general rules to be explored in future research.

This research uses a mixed method approach, which includes document analysis, network analysis and interviews to examine resource transfers, including financial exchanges and technical assistance, and communication as interactions between organizations that result in the planning and implementation of programs to address these three diseases. It examines how these interactions result in adaptation in network structure and in adaptation in program substance between 2001 (the inception of the Global Fund) and the present day. The planning, initial data

collection and analysis portion of this research took place in Pittsburgh, PA while the primary data collection occurred in Thailand.

3.1 MIXED METHOD DESIGN

In order to understand how the interaction of organizations within the Global Fund process generated change within entire action domain, this study employs a mixed method approach. It uses network analysis to analyze the structure that results from the interactions between organizations and how that structure changed over time. In addition, to put this structure into context, the study uses qualitative data gathered from interviews. This study examines interactions as flows of data – information, knowledge and resources, rather than just similarities (e.g. memberships), social relations (e.g. friends), or contact (e.g. talked to) (Borgatti et al. 2009).

3.1.1 Content and Document Analysis

Content analysis can help to answer complicated research questions by reviewing relevant source materials in a systematic way to discover categories based on explicit rules of coding (Fontana and Frey 2003). The data for this study come from Global Fund documents, including program proposals, grant scorecards, and meeting minutes, and from external and internal evaluations of the programs. The use of these data established the formal interactions that occur within this system, how they lead to structural change and the program outcomes. In addition, this

information helped guide the creation of an interview protocol to corroborate formal interactions and determine informal interactions between organizations.

3.1.2 Semi-structured Interviews and Grounded Theory

After performing content and document analyses of Global Fund documents, the key stakeholders in the Global Fund process were identified. I interviewed 23 key stakeholders in the process, including CCM members, principal recipients, sub-recipients, sub sub-recipients, implementing partners and representatives to the Global Fund. These interviews were transcribed and coded using grounded theory to determine the key themes throughout them all (Strauss 1987). In addition, the interviews were used to confirm formal interactions, which include contractual financial exchanges, and determine informal interactions between organizations, including technical assistance and knowledge exchange. The interview protocol is in Appendix A. These questions seek to identify current and past interactions between organizations, particularly the perception of these interactions by organizations, and how the Global Fund process is viewed by those participating in it. Each interview was approximately one hour and occurred in Thailand.

3.1.3 Dynamic Network Analysis

Dynamic network analysis is the study of how entities are constrained and enabled by the relations among them and the process that lead to change in these relations. It examines complex systems with multiple networks, multiple types of nodes, and multiple relations (Carley 2003). The main difference between social network analysis and dynamic network analysis is the use of

multi-mode data, where interactions between actors are examined, as well as relationships of actors to knowledge, tasks, resources, organizations and locations (Breiger, Carley and Pattison 2003). Because of the complexity, it is important to define what the study is examining and provide boundaries on the system. Within any funding process there are formal and informal interactions. The formal interactions include contracts and financial transfers, while the informal ones include knowledge exchange. Technical assistance can be a formal interaction or an informal one. This study identifies formal interactions through Global Fund grant documents and agreements, which are confirmed through grant report cards and interviews. Informal interactions are identified through interviews and document analysis.

This study examines multi-mode and multi-plex data (where there are multiple relations among nodes of the same mode class). For example, it examines formal and informal interactions among the same (or similar) organizations, and examines their relationships to information and knowledge. Together, these data form a meta-network – a set of networks defined over multiple entity classes, both multi-mode and multi-plex – that includes networks around HIV/AIDS, TB and malaria. This research focuses on organization to organization interactions, which form an inter-organizational network, and also examines the relationships of organizations to knowledge and resources to determine core capability networks. Table 1 identifies the relationships between entities that exist in meta-networks.

Table 1: Meta-Network: Connections Among Multiple Entities

	People/Agents	**Knowledge/Resources**	**Tasks/Events**	**Group/Organizations**
People/Agents	Social Network	Knowledge Network	Assignment Network	Membership Network
Knowledge/Resources		Information Network/Substitutes	Needs Network	Core Capabilities
Tasks/Events			Precedence Ordering	Institutional Relation
Group/Organizations				Inter-organizational Network

Adapted from Carley 2003

There are different ways to examine networks, including whole network measures, dyadic level analysis, which consists of patterns of interactions, and node level, which examines who has power, where organizations are located, and who are the important actors in this network. In addition, networks can be examined through group formation, how those groups change over time, and who is included in groups, who is bridging multiple groups and who is not included. This research primarily examines interactions at the node and group level, though whole networks are examined over time to determine if the network is becoming more or less dense to determine how it is functioning. Organizations are the primary node level of analysis.

3.1.3.1 Organizational Level of Analysis

In identifying networks and creating visualizations, critical personnel and organizations are identified. These nodes are key players who have power, and whose departure would reduce performance, adaptability, and competence of the entire network. These organizations can be directly indentified through centrality measures, through exclusivities (only they perform a certain task), and indirectly, through those who have access to and can influence those who are critical. Table 2 lists key network measures and their meanings. These measures are computed and analyzed over time to determine how the Global Fund action arena is adapting and changing.

Table 2: Basic Network Measures and their Meanings

Measure	Definition	Meaning	Usage
Degree Centrality	Node with the most connections	In the know	Identifying sources for intel, Reducing information flow
In-degree Centrality	Node that receives most connections	Prominent or have high prestige in the network	Many actors seek to have relationships to them
Out-degree Centrality	Node that sends most connections	Influential in the network	Actors who are able to exchange with others or make others aware of their views
Betweenness	Node in the best paths (Two way data e.g. communication flows)	Connects groups	Typically has political influence, but may be too constrained to act
Eigenvector	Node most connected to other	Strong social capital	Identifying those who can mobilize

centrality	highly connected nodes		others
Closeness	Node that is closest to all other nodes	Rapid access to all information	Identifying sources to acquire/transmit information
Betweenness – centrality	High in betweenness but not degree centrality	Connects disconnected groups	Go-between, Reduction in activity by disconnecting groups
Density	Proportion of ties in network relative to total possible ties	Group level centrality	Overly connected network is stagnant, while sparse one is ineffective

Adapted from Carley 2003, Wasserman and Faust 1994

3.1.3.2 Network Level of Analysis

The study of whole networks is still in its infancy. In whole networks, measures like density, fragmentation or structural holes, and cliques are examined (Provan et al. 2007). This study examines density for whole networks, though it mostly focuses on sub-groups and structures within networks (and changes over time). Sub-structures of networks can be examined to determine what clusters of organizations exist and if these clusters are changing over time. Groups are defined as a set of nodes that meet some criteria, extracted using pattern analysis. Members of groups usually have similar ideas, attitudes and behaviors (Carly 2003). It can be useful in understanding how a network is currently functioning as well as using the observed member traits of group to predict future member behavior. For this project, the Newman-Girvan (2004) metric was used to detect groups; one of the most commonly used community detecting measures. This metric calculates a community structure, where a community consists of a subset or clusters of nodes that are closely connected within a group and less connected between other groups. According to Newman Girvan, real-world networks thought to contain modular structure generally have values of Q in the range [0.3, 0.7], which should provide a rough guide of acceptable modularity values and is used in this project to determine groups within networks (2004). This project uses this measure to determine if the attributes of group members are changing over time. For example, if all group members were from the same sector (e.g. Thai

government organizations) or possessed the same areas of expertise (e.g. organizations working with migrants), the types of collaboration and learning that the Global Fund espouses are not occurring.

In addition to sub-groups, this project examines how networks as a whole are changing over time. This is accomplished through calculating correlations between networks. Determining these correlations over time is complex given that observations within networks are not independent. Running an ordinary least squares regression to determine whether pairs of nodes are related to one another does not work in network analysis because observations are not independent of one another and therefore violate the requirements needed to run OLS. Moreover, the fact that there are repeating observations means that the errors are correlated with each other. Observations in individual rows or in individual columns tend to be highly correlated, which inflates or deflates standard errors. To solve this issue, statisticians have used the quadratic assignment procedure (QAP) in which the standard errors are estimated using permutations of the data set to provide correlation coefficients between networks (Mantel 1967, Hubert and Schultz 1976, Krackhardt 1987).[1]

This analysis calculates an observed correlation between networks. One network is designated as a dependent variable. In the first step, it computes Pearson's correlation coefficient between corresponding cells of two networks. Then for *K* iterations it randomly rearranges the rows and columns of one network and compares it to the other network, coming

[1] Essentially, what the QAP does is to generate a random distribution of the dependent variable, resulting in multiple random datasets with the dependent variable that can then be compared. Those datasets and analyses form an empirical sampling distribution, where the coefficient with this sampling distribution can be compared to coefficients from all the permuted datasets The QAP permutes the rows and columns—but for a single node, the row and column remain the same, and are permuted in the same way, so that the rows and columns for a single node are not separated. Essentially, you are preserving the dependence within rows / columns—but removing the relationship between the dependent and independent variables

up with a distribution of correlations, which can be expressed as a standardized Z-score (Mantel 1967, Hubert and Schultz 1976, Krackhardt 1987). Correlations between networks can be used to determine if membership and relationships correspond from one round of funding to the next (i.e. Different rounds of funding that create different programs may have completely new organizations involved) and if they are changing over time. If networks are 100% correlated from one year to the next, then no adaptation is occurring.

The dynamics of the networks over time are studied by examining measures of density for whole networks and for sub-groups within networks (e.g. international organizations within the AIDS network), in conjunction with identifying sub-groups and network correlations all combine to answer the research question of whether adaptation is occurring over time. These measures combine to identify the dynamic structure of these disease networks. This information provides answers to how interactions altered the structure of relationships, while grant program goals, beneficiaries, activities and results, with interview data, detail the substantive change over time. Interviews help to link the two together, discussing how the interactions that occur within the Global Fund process lead to new information and knowledge and new partnership, which changed what programs were designed and enacted, who the beneficiaries were and what activities were included. Over time, these interactions, which change the structure of the networks, the substance of the programs, and improve program outcomes, result in change within the foreign aid and public health systems.

3.2 THE UNIT OF ANALYSIS AND UNITS OF OBSERVATION

The units of analysis in this research are the organizations within the Global Fund action arena in Thailand between 2001 and 2010. The organizational actors include public organizations, non-profit organizations, private organizations and international organizations. Public organizations include central ministries that plan the programs, local public health offices that implement them, and hospitals that treat patients and universities that perform research. Non-profit organizations include indigenous Thai organizations as well as local offices of international non-profits (e.g. Populations Services International, Planned Parenthood, Care International). International organizations include bilateral donors like USAID as well as multi-lateral organizations like United Nation's organizations (e.g. World Health Organizations, UNICEF, etc.).

The units of observation are the "inter-organizational interactions" exchanged between the organizations that participated in the action arena. These interactions are linkages between organizations that change over time (Wasserman and Faust 1994). There are two main types of interactions – resource transfers, which include financial and technical assistance, and information and knowledge exchange. These interactions are all directional (with a 'giver' and 'receiver').

3.3 CASE SELECTION: THAILAND

The public health and foreign aid systems are large and complex and are influenced by a variety of external factors, including the political climate in a country, its legal system and its health infrastructure. In order to select a case, the country should have a stable government and the

ability to freely form organizations. Because the subject of this research is inter-organizational collaboration, learning and adaptation, an attempt was made to choose a case in where these interactions could be observed over time, where there was little outside disruption to the process. Though Thailand has experienced political protests and coups, its institutions have remained stable and its democracy allows for freedom of association and organizational autonomy. In addition, Thailand is highly susceptible to these three diseases, has both a strong government and strong civil society sector, strong health care infrastructure and was involved with the Global Fund since its inception (Appendix B, Thailand as a case study, discusses these factors in more detail). Thailand is a 'best case' scenario for the Global Fund process because it allows for organizational collaboration while maintaining a relatively stable external environment (George and Bennett 2004). These conditions help to isolate how interactions between organizations as a result of the Global Fund process affected organizational collaboration and the development of relationships over time.

3.4 DATA COLLECTION, CODING AND ANALYSIS

3.4.1 Data Collection

To develop a complete understanding of the action arena under consideration, three categories of data were collected. The first category came from Global Fund documents that were used to identify organizational actors and formal interactions in the Global Fund process in Thailand (Table 3). These included both proposals from Thailand that were accepted and those that were not, as well as performance reports written and submitted by the local fund agents on the Thai

programs and regional meeting documentation. Other Global Fund documents include annual regional meeting minutes, participant lists and presentations and Global Fund workshop meeting materials, participant lists and minutes. The annual regional meetings allows for experts within the process in Thailand and other Asian countries to get together and exchange best practices and learn about changes to the Global Fund while the workshops provide training to Thai organizations working within the Global Fund process.

Table 3: Data Materials

Global Fund Documents	Other Documents	Interview Data
- Program Proposals (9 funded, 2 unfunded) - Grant Scorecard (2002-2010) - Grant Performance Report (2002-2010) - Regional Meeting Documentation (5 for East Asia and the Pacific) - Global Fund Workshop Documentation (Grant Negotiation and Implementation, Monitoring and Evaluation)	- External Evaluations of Programs (WHO reports, USAID reports, GAO reports) - Annual Reports of Organizations in the Process	- 23 Key Stakeholder interviews (each approximately 1 hour in length) in Thailand – Summer 2010

In addition to Global Fund documents, this research also examined external and internal evaluations of the programs. These evaluations detailed who was working on the programs, who was collaborating and how well the programs performed. This information was gathered in an effort to eliminate Global Fund bias that might occur if examining its documentation. Finally, information was gathered from those working on Global Fund programs within Thailand through interviews and from internal evaluations they provided. These included representatives from organizations working in all aspects of the Global Fund process, both inside and outside of Bangkok (Appendix C, organizational characteristics of those interviewed).

3.4.2 Data Coding

I began data coding by identifying the organizations and interactions reported in the Global Fund documentations, specifically in the signed formal contracts and proposals. These data were stored in Excel spreadsheets, and coding rules employed in this process are listed in Appendix D. Second, I prepared the interview data for analysis. Using the software *MAXQDA*, I coded the interview transcripts using the open code process of grounded theory (Corbin and Srauss 2008). The coding process used is detailed in Appendix D. Using the Global Fund data, which established formal interactions, and the interview data, which established informal ones, the data was converted into relational matrices using the network analysis software *ORA*. The communication matrices were symmetric and non-directional, while both the resource transfer and knowledge exchange matrices were directional. These matrices were coded and analyzed by year.

3.4.3 Data Analysis

Data analysis corresponds to the research questions. This research seeks to understand the extent the interaction between the international aid system and the public health system in Thailand generated change in both systems. This analysis separates the research questions into two parts, understanding the interaction by round and then understanding the dynamics of change that occurred over time. The first part of analysis, interaction, is examined through the planning process within the Global Fund and through the implementation of the programs. The document and interview data were used to compose matrices and analyzed to understand the nature of organizations involved within this action arena.

Interactions between organizations were coded and used to conduct network analyses on the data. This analysis utilized the tool *ORA*. Basic network metrics were used for each disease to analyze interactions between organizations immediately prior to the Global Fund and to analyze the interactions for each round of funding for all three networks. The first portion of analysis is a description of the structure of these networks, including identifying who the key actors are, who is positioned in broker roles, and who is not well connected. Historical interactions were constructed using external and internal evaluations and interview data.

Networks were examined at two levels – planning and implementation. The planning organizational networks of the three disease networks include the CCM, principal recipients (who usually help write the proposals) and any other technical advisors. Implementation networks include recipients of Global Fund monies and any technical advisors to the process. Basic metrics are derived for these networks, including density, key entities and key sub-structures and groups In addition to examining the individual disease networks, the whole Global Fund network was examined as an action arena at both the planning and implementation levels.

After describing the structure of these networks by examining basic network metrics, the dynamics of the networks were examined. Each round of funding represents a different time period, so there are ten time periods in total. The dynamics of the networks were examined through changing densities, changing group size, composition and attributes, and running basic correlations between networks, which measure the similarity of network structure over time. This analysis was conducted for both the planning and implementation levels on all three disease networks separately and for the Global Fund action arena as whole.

The final stage of analysis includes the use of grounded theory and data reduction techniques to understand what the structure and change of these networks mean. The literature is inconclusive about exactly what organizational position in a network means. However, utilizing qualitative method techniques to analyze the interview data and detailed program information, this project explores how the changes in structure led to changes in substance within the programs and program outcomes. Both structural and substantial changes were used to examine how the interaction of organizations within the Global Fund process result in adaptation in the public health and foreign aid systems in Thailand.

3.5 VALIDITY AND RELIABILITY

Validity refers to the 'truthfulness' of research findings. There are four types of validity – internal, external, statistical, and construct (Cook and Campbell 1979). Threats to validity may lead to incorrect inferences or conclusions by the researcher. This study does not attempt or test a series of casual hypotheses, but seeks to better understand the phenomenon of overlapping action arenas and organizational relationship adaptation. It seeks to do this through the use of document analysis, dynamic network analysis and qualitative data collected through semi-structured interviews and coded using grounded theory.

3.5.1 Construct Validity

Construct validity is "the degree to which inferences can legitimately be made from the operationalizations in a study to the theoretical constructs on which those operationalizations are

based" (Trochim 2006, 69). Ultimately, are we measuring what we really want to be measuring? The theoretical construct in this study is the Global Fund as an overlapping action arena, which is influenced and influences the two action arenas it straddles. Not only does it influence the participants and their interactions, but it inevitably affects the external rules that govern the public health system and foreign aid systems in Thailand as well as the outcomes of both systems. Understanding the interactions, relationships and adaptation among participants in the Global Fund arena shed light on how the two arenas it overlaps are affected by this process. This construct is based upon a review of the systems literature, particularly utilizing Ostrom's action arena as a theoretical framework (Ostrom 2005, Trochim et al. 2006, Holland 1995, Axelrod and Cohen 1999).

Threats to construct validity are typically the result of there being multiple measures which can potentially be used to define the same concept (Shadish, Cook and Campbell 2003, Trochim et al. 2006). Threats include inadequate explication of constructs - Did the researcher do a good enough job of defining what is meant by the construct? This threat occurs when the operations of the research do not match with the theoretical constructs in the study. For this research, the action arena as a construct contains other constructs, specifically 'interactions' between participants. If these interactions are not operationalized properly, the conclusions may be misleading. The definitions of the interactions are supported by the literature of organizational collaboration (Guo and Acar 2005, Sowa 1999, Wasserman and Galaskiewicz 1994) and complex adaptive systems (Axelrod and Cohen 1999, Trochim et al. 2006) which aids in combating this threat.

Other threats include mono-operation bias (when a researcher only uses one operationalization of a concept) and mono-method bias (when a researcher only uses one method for an operationalization). Both these threats were addressed by the multi-method approach of

this study. It uses multiple sources over different periods of time to measure the interactions between organizations, operationalizing them as communication, knowledge and resource exchange with the understanding that there exists a variety of types of interactions between these organizations. In addition, data was gathered from a variety of sources (documents, meeting minutes, interviews, external and internal evaluations) and analyzed through network analysis and qualitative analysis techniques to assist in combating these threats to validity.

3.5.2 Internal Validity

The nature of this study and methodology give rise to issues of internal validity. Internal validity is the "approximate truth about inferences regarding cause-effect or causal relationships" (Trochim et al. 2006). Because this is an exploratory study, the ideas of causal relationships are not relevant. In addition, the theoretical construct of complex adaptive systems recognizes that there are not linear relationships between actors but it is a constantly evolving arena that is affected by internal and external factors. The Global Fund process in a country requires the establishment of certain entities, including a country coordinating mechanism, which plans programs, and a funding system that gives money to principal recipients, who in turn distribute it to sub-recipients, who distribute it to sub-sub recipients and so on. In this sense, the Global Fund initially causes interactions between participants, resulting in changes in relationships, at least at the beginning of the process. However, the relationships and environment are influenced by different types of rules and after the establishment of initial interactions, this study claims that the interactions result in change, though they may not necessarily be attributed to the Global Fund. The theoretical framework understands that there are external influences on the action arena, including material conditions, attributes of the community and rules of interaction that

affect the participants and the situations. It does not expect participants to remain the same, but to change over time.

The question remains, did the Global Fund create an action arena and affect the relationships between participants, which in turn affect the public health and foreign aid arenas. This question was addressed in two ways in this study. First, it took into account the history of interactions between participants within Thailand. To do this, the study used multiple data sources, including external evaluations, annual reports of organizations and interview data, and was able to establish the interactions of these groups directly prior to the Global Fund involvement in Thailand.

The second way this study attempts to understand whether the Global Fund affected these two systems is to conduct interviews with those participating in the process. To ensure that selection bias did not occur, the interview subjects occupied all roles within the process, including those who were principal recipients of funds, those who helped plan programs, those who implemented the programs and those who offer technical assistance. The interview subjects had been involved with the Global Fund process for a variety of time periods, with some in the same positions the entire nine years of Global Fund involvement in Thailand, and others new to the process. In addition, some interview subjects occupied different Global Fund roles over time, and worked with different organizations that worked within this process. Those providing technical assistance in this system as well as CCM members do not receive funding from the Global Fund. The variety of opinions and roles occupied by the interview subjects ensured that selection bias was reduced. However, interview subjects were selected during an analysis of Global Fund proposals, so no non-Global Fund subjects were interviewed, posing a possible bias.

3.5.3 External Validity

External validity is the extent to which research findings can be generalized to other settings, times, persons, and treatment variations (Cook and Campbell 1979, Shadish, Cook, and Campbell 2003). The results of this study are threatened by issues of external validity, specifically whether the sample of subjects that provided data were representative of the Global Fund action arena in Thailand. The interview subjects represented all levels of the Global Fund process and represented experts in all three diseases. The semi-structured interview questions focus on two district areas of focus. The first is common across all interview subjects and focus on historical information, opinions of the Global Fund process, organizational collaboration and how these have changed over time. The second area of focus asked subjects to report on their specific role in the Global Fund process, examining resource transfers, communication patterns and knowledge exchange. Organizing the interview protocol in this way ensured that the analysis was representative of the Global Fund process in Thailand as a whole.

There are three major threats to external validity – people, places and times. If a researcher talks to different people or organizations or at a different period of time, he or she might get different results. The ability to generalize the results of this study to other country contexts is problematic. The study will help illuminate how a bridging action arena can influence two others, but the interactions are unique to Thailand. Every country will have different interactions and different histories (different exogenous variables even if the action arenas are similar – also different outcomes, which affect the variables and arenas). Therefore, the lessons to be learned from this study are focused more structure than on substance and its main relevance is in the area of theory building.

3.5.4 General Issues of Reliability

Reliability has to do with the quality of measurement. In its everyday sense, reliability is the "consistency" or "repeatability" of your measures. Questions about reliability consider the extent to which the methods and instruments employed by the study generate results that are dependable, lack distortion, or are free of measurement error (Kerlinger and Lee 2000). This study attempts to combat issues of reliability by focusing on a mixed method design and gathering data from a variety of sources. However, there still remain issues with the documents, semi-structured interview instrument, and network data.

3.5.4.1 Documents

The process of collecting document data was bounded by the Global Fund process. For example, though it is assumed that these participants might attend meetings or events outside of the Global Fund process, only Global Fund sponsored meetings and corresponding minutes were used in the analysis. The Global Fund proposals were used to identify key stakeholders, who were then approached to be interviewed. In order to eliminate bias, both funded and unfunded proposals from Thailand were used in the analysis and external reviews of the process and programs were incorporated. By using documents from multiple sources, bias is minimized.

After conducting semi-structured interviews, additional document data was gathered from information emerging from the interviews. Also, interview subjects provided documented evidence, including internal reviews and program evaluations, which were collected at the interviews. This multi-prong approach allowed for a more comprehensive understanding of participants in the Global Fund process and for the formal interactions that occurred.

3.5.4.2 Semi-Structured Interview Instrument

A threat to reliability is related to being an outsider trying to understand insider behavior. As an American researcher not involved in the Thai Global Fund process, the ability to gain access to key stakeholders and to garner honest answers from them is a challenge. This research attempted to combat this threat in a variety of ways. First, I was a visiting scholar at Thammasat University in Bangkok, a well-known and well-regarded institution throughout Thailand. This affiliation and Thammasat scholars introduction of me to those I identified as interview subjects, assisted in gaining access and in achieving honest and thoughtful answers from them.

In addition because the Global Fund process is conducted in English, all interviews were also conducted in English (though they had the option of an interview conducted in Thai with a translator. No subjects opted for this). Information about the process and subject opinions of the process were gathered by asking questions in a variety of ways to ensure there was no language barriers and cultural barriers to certain questions. If there was confusion during an interview, (e.g. the subject had difficulty understanding a question). I would restate the question using a predetermined set of substitute words. If I had difficulty understanding a subject's response, I would request clarification. Throughout the entire interview process, I would probe the subject to "provide validation of the meaning of meaning of [words and concepts]" (Marshall and While 1994, p. 568).

Outside of language barriers, there also exist cultural barriers between an outsider researcher asking questions of insider behavior. In Thailand, there are cultural issues regarding the concept of 'face' where interview subjects may be reticent to respond in ways that would reflect badly on themselves or their organizations. In addition, they may be unwilling to criticize the Global Fund or government functions given the strict social structure that exists in Thai

culture. In order to combat this, I tried to ask opinion neutral questions and ask them to critique the process in abstract ways (e.g. what are some positive and negative aspects of the Global Fund process?) This allowed interview subjects to express their opinions while maintaining 'face'.

3.5.4.3 Network Data

There also issues of reliability surrounding network data. First, there is a question of whether the data collected is representative of the actual network or just the perceived network. This is part of a larger problem of reliability when collecting data from interviews, leading to missing or inaccurate data. In particular, data related to historical interactions may be inaccurate given people's inability to recall or remember correctly. In order to combat this issue, I collected data from numerous sources, including Global Fund documents, external and internal reviews and Global Fund meeting minutes and materials. In addition, the interaction information that emerged from the interview data was cross checked with other documents to ensure validity.

3.6 LINKING METHODS TO THE RESEARCH QUESTION

The Global Fund process in Thailand is an action arena that overlaps both the local public health system and the foreign aid system in Thailand. In order to address how the interactions of organizations within that process result in change within the Global Fund action arena and change within both the foreign aid and public health systems, this research utilizes a mixed method approach, including network analysis and qualitative analysis. The unit of analysis is the organizations involved within this process and the unit of observation is the interactions between these groups. By observed the interactions, which include resource transfers, both financial and

technical, and information knowledge exchange, the structure of the network by round and over time is examined. Finally, using interview data and data detailing program goals, activities and outcomes, the substantive changes in this process are revealed. This data analysis process reveals the structural and substantive changes that inform whether adaptation and change is occurring within the public health and foreign aid systems.

4.0 THE SYSTEM PRIOR TO THE GLOBAL FUND

The public health and foreign aid systems in Thailand gradually changed over the last 25 years. The public health system has become more inclusive and decentralized, while economic development in Thailand has altered relationships between it and its donors, with funding focused on infrastructure creation, human capital development and on assisting marginalized and poor populations (Muscat 1990). Within the public health system, despite the variety of organizations involved, immediately prior to the Global Fund's introduction in Thailand, the central Thai government was still in control of programs and policy making, often with little input from implementers and beneficiaries. There were many international donors working in public health, but they were not well integrated into the local system. Aid provided by international organizations tended to be short term and project based, rather than focusing on national agenda setting or creating system improvement. In addition, the importance of international organizations decreased within the system as per capita income increased throughout the 1980s and 1990s (Salamon and Anheier 1998). Nonetheless, their presence is still important within the health system, particularly in working with programs for populations the Thai government cannot or will not serve, such as migrants, drug users, sex workers and men who have sex with men (MSM).

In addition to changing relationships within the two systems, the scale and scope of the diseases over the last 25 years has increased. Thailand experienced and is still experiencing a

severe HIV/AIDS epidemic, exacerbated by the size of their sex tourism industry and the number of migrant workers who cross the borders from Cambodia, Laos and Myanmar. In addition, Thailand sits in a highly malaria endemic area, where virulent, drug-resistant strains often arise and most affect those living along the borders, who are often migrant, non-Thai workers, not covered within the Thai health system. Finally, tuberculosis is contagious and requires a heavy load of drugs over multi-weeks and sometimes months. This is problematic for treatment given the large amount of poor and migratory people who are affected, making adherence to the regime difficult. TB is also a co-infectious disease with HIV/AIDs, so treatment programs need to be collaborative and informed by an understanding of the other disease, a situation which does not often occur.

Prior to the first disbursement of funding from the Global Fund in 2002, there existed organizations working to combat these diseases in Thailand, organizations that were clustered in groups based on funding sources (e.g. organizations working on USAID's programs), region and disease. Organizations within the Thai public health system were clustered in groups around disease and funding sources as well, and were dominated by large, bureaucratic government ministries (mostly the Ministry of Public Health). Within and between these systems, there were few knowledge transfer or resource exchange interactions between organizations and clusters of organizations. The result was a lack of coordination and collaboration and inefficient and ineffective programs at times. Organizations possess areas of specialization and exclusive knowledge, with organizations working with specific populations (e.g. migrants, sex workers) interacting with one another, but failing to connect to organizations with other areas of expertise, such as the Ministry of Labor or the Ministry of Interior. Because of the nature of the three

diseases and the populations most affected by them, programs without adequate input from the organizations that possess a variety of areas of expertise will not be successful.

Within both systems, there were few resource and knowledge exchange interactions between communities, resulting in lack of collaboration. Communities of organizations were also segregated by sector, with civil society and international organizations not forming groups with public ones. Given that the Thai public sector is mostly responsible for care and treatment of diseases while civil society mostly enacts prevention programs with marginalized populations, the lack of connection between these groups poses problems for the system as whole. This chapter presents a picture of the foreign aid and local public health organizations working on these three diseases (and their relationships) immediately prior to the Global Fund introduction into Thailand. It establishes a baseline from which to determine how the interactions of organizations within the Global Fund process changed relationships, affected coordination and collaboration, and helped adaptation over time within the Global Fund process and within these two systems.

4.1 HISTORY OF FOREIGN AID IN THAILAND

Thailand has a long history with foreign aid and assistance, with the modern era stretching back more than 50 years. For many years Thailand was an aid recipient country though in recent years, particularly since 2000, Thailand has stressed it roles as a development partner with international donors, as opposed to a recipient, and as a foreign aid donor itself, particularly within their region (UN Thailand 2011). United States foreign aid policy toward Thailand has experienced a number of iterations, with a focus on nation building in the 1950s, a focus on

counterinsurgency and development in the sixties and seventies (as a result of the Vietnam war), a focus on eradication of poverty in the seventies and eighties and a focus on economic development through private sector development in the eighties and nineties (Muscat 1990). For the last twenty years, foreign aid from bilateral and multilateral donors to the Thailand has focused mostly on improving infrastructure and human capital, while foreign aid from international NGOs focused on assistance for marginalized populations (Muscat 1990). Nonetheless, foreign aid actors within Thailand were not well integrated into large public health programs or setting of agendas. They formed their agendas outside of Thailand and created programs and communities of organizations to enact them that had little input from local organizations.

4.2 HEALTH POLICIES

Through a universal health insurance scheme exists in Thailand, there are concerns over equity and access (Kachondham and Chunharas 1993), with richer, more urban citizens receiving quality care while poor, rural residents are left without. This is problemmatic in addressing infectious disesases, which often disproportiately affect rural, poor and marginalized populations. In order to access the health insurance, people must be registered with the government, either as a Thai citizen or as a registered migrant. Without this legal status, they are not eligible for health insurance. For most, costs are prohibitively high and fear of resprisals from the government limits their visits to health facilities. In addition to migrants, the government deems some of those most vulnerable to HIV/AIDs (e.g. intraveneous drug users, sex workers) as criminals and does not address treatment and prevention needs in regards to

these groups.

The Thai government policies toward marginalized populations have often been criticized for human rights violations (Amnesty International 2003). In February 2003, the Thai government initiated a large-scale law enforcement operation directed at the country's drug users and dealers, later called the 'Clean and Seal Campaign' (Respondent 5 6 June 2010, Respondent 15 22 June 2010, Amnesty International 2003). "What is cleaning and sealing a community? It means you go in, and you arrest all the drug traffickers. Then you put all the drug users into forced detention camps. Then you have cleaned the community, you will seal it so no more bad elements will come in" (Respondent 5 6 June 2010). This campaign resulted in thousands of extrajudicial killings of alleged drug dealers and the incarceration of an estimated 50,000 suspected drug users, many of whom were sent to military treatment camps (Amnesty International 2003). This criminalization of drug use, and the severe consequences of being labeled a 'drug user', resulted in barriers to providing health care for these groups, though it is estimated that at least 50% of intravenous drug users are infected with the HIV virus (Barrett et al. 2010).

4.3 ACTORS IN THE SYSTEM

Prior to the introduction of the Global Fund into Thailand, over 80% of the organizations working on these diseases were public (Appendix H, Organizations by network, Sector and Disease, H.1 Pre Global Fund Network). There was organizational overlap, with organizations like hospitals and prisons treating all three diseases. The majority of these public organizations worked to implement programs, with the implementation network (N=593) much larger in size

than the planning network (N=154). Local government bodies like provincial health offices were primarily responsible for implementing programs, while there was little involvement from international agencies or local nonprofit organizations. These organizations tended to work with marginalized populations in specific regions.

In contrast to the implementation network, only about 25% of the organizations working in the planning networks were Thai public organizations and 50% were international organizations (Appendix I). International funding was rarely used for broad care and treatment programs, instead focusing on research or programs that had donor driven agendas. Interaction between these organizations and the rest of the Thai public health system was vital to creating and implementing effective programs, especially given the importance of incorporating new information and knowledge into program planning. In addition, research is important in Thailand because it is an area where new strains of malaria emerge.

> The Thai-Cambodia border, in the past, is the worldwide center for drug resistance. (The malaria strains were drug) resistant in 1960, and it spread to Africa... It resists, the virulent strain resists and within 5 years and it has spread to Africa again...If we cannot control the Thai-Cambodian border, the eastern part of Thailand, even though the cases are low in that area, it will spread. The pattern of spread is from Thai-Cambodia to Thai-Myanmar within a year and then to the rest of the world (Respondent 23 7 July 2010).

Without linkages between organizations conducting research, and discovering new strains and treatment strategies, and those treating the diseases, TB and malaria cannot be contained, threatening not just populations in Thailand, but throughout the region and, ultimately, the world.

Within the planning network the most visible public organization is the Ministry of Public Health (MOPH), which is primarily responsible for the healthcare of Thai citizens. It is divided into four main clusters of organizations that focus on administrative issues, care and treatment, prevention, and research and system strengthening. Because of the structural

organization of the ministry, a silo effect occurred between departments that resulted in differing departments, though under the same Ministry, not exchanging information or knowledge. In addition, there were few interactions around these diseases between different government ministries.

Nonprofit organizations were mostly absent from malaria and TB networks, though they composed a third of all planning organizations within the AIDs network. In Thailand, the first civil society organizations that became active in HIV/AIDS related issues were those working on family planning and community development (Ainsworth et al. 2003). Because of the large sex industry that exists in Thailand, and the resultant vulnerability to AIDS, nonprofit organizations emerged in the 1980s that worked with sex workers on HIV/AIDS prevention. Also Thai nonprofits work with communities to decrease stigma and increase knowledge about AIDS. In 1989, 18 NGOs founded the Thai NGO Coalition on AIDS (TNCA) to improve service delivery and advocate for policy changes (Pongsapich 2003). The TNCA, with the Ministry of Public Health, helped to form the Thai National AIDS Foundation (TNAF) in 1999, which works as a go-between for NGOs and the Ministry, particularly in regards to funding (TNAF 1999). In addition, there were a number of organizations composed of people living with HIV/AIDS (PLWHA) that emerged in the 1990s to advocate for fair and just treatment options.

Decentralization of many programs and policies in Thailand and an increase in the number of networks and associations of organizations around specific diseases or groups of people occurred throughout the 1990s. However, there remain key actors in all three disease networks that work in prevention, in care and treatment, in advocacy, in research and in strengthening the system through training and sharing of knowledge. Their relationships among

other organizations within their area of work as well as across fields illuminates how effective these networks were at addressing these diseases and the people affected by them.

4.4 ACTION ARENAS AND NESTED SETS

The organizations that existed in Thailand to work on these three diseases were connected in a variety of ways. The public health system in Thailand is an action arena in which there are connections between organizations, outcomes from programs, positive and negative adaptation of programs and historic interactions that color the entire process. Within this system, there exist nested sets of organizations that plan programs and those that implement them. Organizations working on these three diseases within the foreign aid system action arena in Thailand operated next to the public health action arena, with few international organizations truly incorporated into the local system. At times local public health and international organizations worked together, but it was on a project by project basis and there was no formal mechanism to ensure this overlap continued.

4.4.1 Thai Public Health Action Arena

The Thai public health system consists of organizations with different knowledge bases, different areas of expertise that operate in different places and perform different roles. These include central government ministries, local health offices, hospitals, universities, nonprofit organizations and research institutes. The goal of any well functioning system is to have interactions between these organizations that facilitate information and knowledge exchange and

help provide resources where they are needed. Ultimately these interactions should improve program performance and effectiveness. This dissertation examines the Thai public health system as two different nested sets of organizations – ones that design programs and ones that implement them. As a whole, the most central task for organizations within this action arena was to provide care and treatment services (Appendix E, Pre Global Fund Tables, E.2 Program Data). This is usually the main role of most national governments within the public health sector, highlighting the reasons it is important to partner and collaborate with international organizations that focus more on prevention, system strengthening, research and advocacy activities (Appendix E, Pre Global Fund Tables, E.2 Program Data).

4.4.1.1 Nested Set: Thai Program Designing Organizations

Within the public health system in Thailand, there were organizations that helped to create policies and programs and those that implemented those plans. The Ministry of Public Health was the principal organization responsible for planning public health programs in Thailand, specifically in creating TB, AIDS and malaria national plans and programs. Figure 4 displays the planning network of Thai organizations prior to the Global Fund involvement. This figure displays the resource linkages (which include technical assistance, funding and knowledge exchange) between these planning organizations.

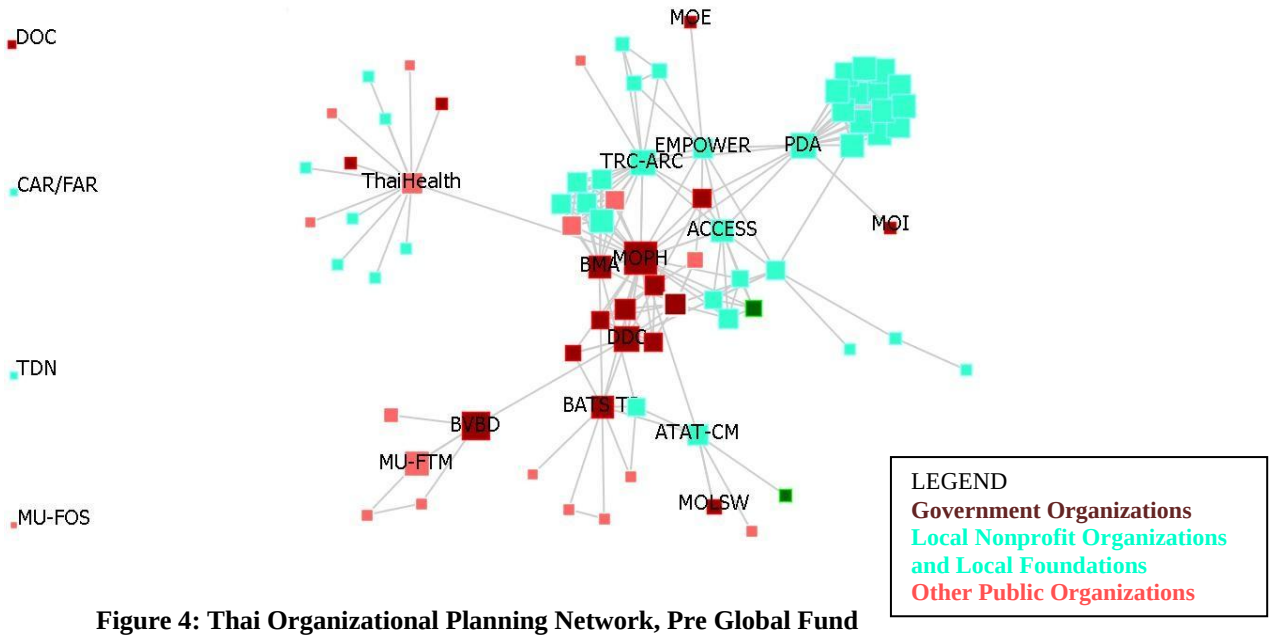

Figure 4: Thai Organizational Planning Network, Pre Global Fund

Figure 4 shows the interactions between organizations as well as those that are isolated from others within the network. This network is not dense (0.04) (Appendix E, Pre Global Fund Tables, Table E.1, Whole Network Measures), indicating that there were missing linkages between Thai organizations that work on these three diseases in the public health system, though it had a low level of fragmentation (0.16). This means that though organizations were not directly connected to one another (indicating missing linkages and resulting in a smaller density score), there were indirect connections though organizations like the Ministry of Public Health. Nonetheless, there still existed isolated organizations that had an interest in the programs and were stakeholders yet were not connected to those planning to programs (e.g. Ministry of Labor and Social Welfare, Ministry of Education).

The most visible organizations in this network were central government ministries, specifically departments within the Ministry of Public Health (Government organizations are seen in Dark Red in Figure 4). Other public organizations that played a role in this network included universities, hospitals and foundations. These public organizations were connected to

various types of organizations and were less central to the network than central government organizations. As a result, they operated as connectors to disconnected groups and could be utilized to spread ideas and information and transfer knowledge throughout the network. Local nonprofit organizations and foundations, were also involved in the planning process in Thailand, though for the most part were clustered together and not well connected to the central ministries, who most controlled this network.

Besides the Ministry of Public Health, other central government ministries were not central in this network prior to the introduction of the Global Fund. The Ministry of Interior, Ministry of Labor, Ministry of Education, and the Department of Corrections did not directly interact with the Ministry of Public Health, indicating the lack of information and resource exchange that was occurring within the Thai government. The Department of Corrections, in charge of the prison health system in Thailand, was not connected to this network at all, while .the Ministries of Education, Interior and Labor and Social Welfare were only connected through one civil society organization. These ministries were not central in planning these three disease public health programs, though they had a stake in the outcomes and could inhibit a program's success. This was problematic given the nature of these diseases and those most affected by them. For example, only migrants registered with the Ministry of Labor are entitled to the 30 baht scheme, so those not registered (estimated to be more than half of the estimated 2 million migrants in Thailand) (Panichpakdi 2009) avoided medical testing and treatment for fear of reprisals (e.g. deportation, imprisonment, fines) and due to prohibitive costs. Those that did seek treatment could not pay, resulting in local hospitals shouldering the financial burden. If the Ministry of Labor and Ministry of Public Health worked together they could have come up with

a scheme that was more cost effective and enabled and encouraged those who needed treatment to seek it.

Though the Ministry of Public Health creates policies for all three diseases, the departments responsible for each disease were different and often did not exchange information or knowledge. The Bureau of Vector Borne Disease is responsible for malaria control programs in Thailand, the Bureau of AIDS for AIDS, and the Bureau of TB for TB. As Figure 4 displays, these organizations were not directly connected to one another, nor were organizations connected that focus on the different diseases. The organizations that span the diseases were at the top of the hierarchy (Department of Disease Control and the Ministry of Public Health), which inhibited knowledge exchange. AIDs and TB are co-infectious diseases, and those populations who are vulnerable to malaria are often vulnerable to the other two diseases (e.g. rural, border populations, migrant workers, etc.), so the lack of interactions between organizations resulted in duplication of programs, inefficient use of resources and inhibited transfer of knowledge.

Key actors within the Thai planning network include the central ministries and local universities. The Ministry of Public Health was the most central actor within the networks, was connected to other highly connected organizations and connected disconnected groups. No planning process for these three diseases can be successful without the inclusion of the Ministry of Public Health, though they were perhaps *too* central and dominated the process, making it difficult for other voices to be heard. Some voices that should be included in the planning process were those that possess knowledge that relatively few others possess. Within the planning network this includes local nonprofit organizations that work with marginalized populations. These organizations know things and have experience in areas that others do not

and therefore can lend a new perspective to the planning process that will help improve programs effectiveness.

Prior to the Global Fund, programs for these three diseases in Thailand focused on strengthening organizational capacity, delivering programs for urban poor (particularly in Bangkok), providing services for local populations and establishing health care for prisoners (Appendix E, Pre Global Fund Tables, E.2 Program Data). These programs were focused on strengthening the public health system (hence the focus on organizational capacity) and on care and treatment programs. They were least concerned with advocacy and training and evaluation. This network would benefit from a greater variety of organizations that perform different tasks as well as connections between those already in the network (e.g. between the Ministry of Education and the Ministry of Public Health).

4.4.1.2 Nested Set: Thai Implementing Organizations

The network of implementing organizations within the Thai public health action arena on these three diseases was not well connected (density=0.00) (Appendix E, Pre Global Fund Tables, E.1 Whole Network Measures) and was slightly fragmented (0.24), indicating the presence of structural holes in this network (Burt 1992). Like the planning network, the most central organizations in the implementation network were the Ministry of Public Health and the Department of Corrections. Those organizations that possess exclusive knowledge and expertise included regional disease control offices, the national pharmaceutical association, and nonprofits composed of those affected by the diseases.

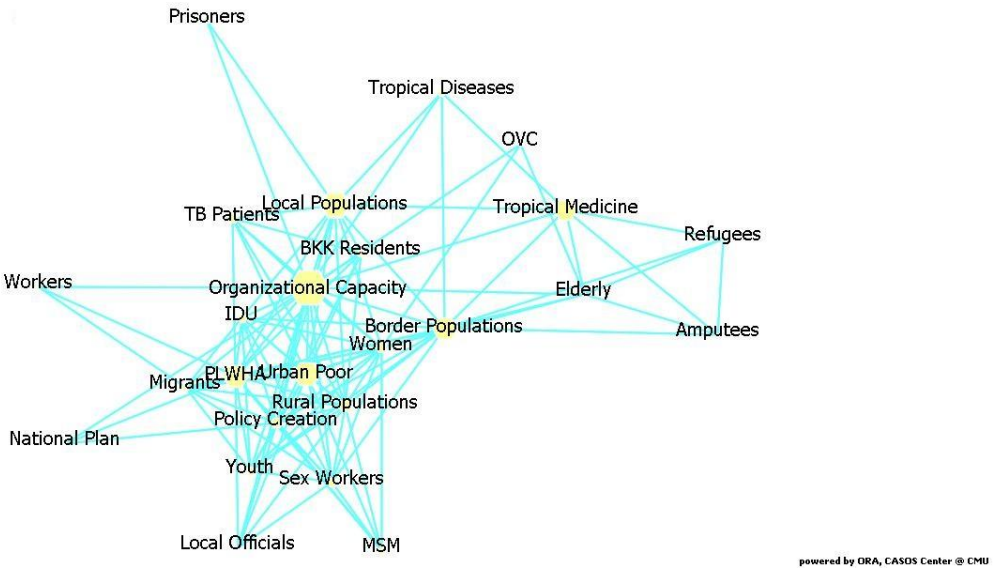

Figure 5: Focus of Implemented Programs, Connected by Shared Organization

Within the implementation network, programs focused on local populations, with activities focused on care and treatment. Figure 5 displays the pre-Global Fund task network for Thai implementing organizations. Connections exist between nodes in this network if the programs share an organization. Programs focused on marginalized groups, such as refugees or amputees, tended to have common organizations, but programs with this subject matter were relegated to the periphery of the network. In addition, when examining the knowledge network of these organizations, those with areas of expertise about vulnerable populations were not central to the network (Appendix E, Pre Global Fund Tables, E.2 Program Data). The programs with the most organizations working on them included those that worked with organizational capacity and with the urban poor (mostly located in Bangkok). Those organizations working on programs focused on tropical medicine and diseases (e.g. malaria) were not well connected to those working on other programs indicating a segregation of malaria from the other two diseases.

4.4.2 International Action Arena

International organizations have a long history in Thailand though, because of Thailand's income level, have been decreasing in importance over the last 20 years. The roles that international organizations in Thailand play were changing over this period as well, transitioning from implementing organizations to funding ones and ones that offer technical assistance. Figure 6 shows the resource linkages, including technical assistance and funding transfers, between international organizations that were working in Thailand directly before the Global Fund, colored by the diseases in which they specialize. The nodes are sized by total degree centrality.

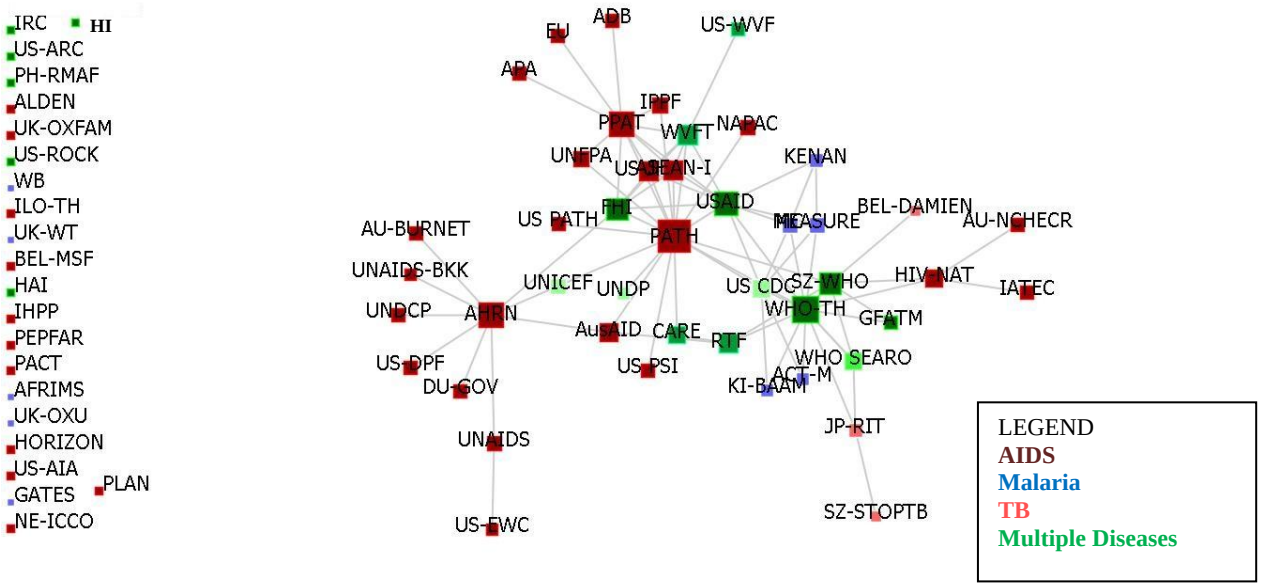

Figure 6: International Organizations in Thailand, By Disease and Total Degree Centrality

*Red Indicates an organizations working on AIDS, Blue is Malaria, Pink is TB, Green organizations work on multiple diseases

The left side of Figure 6 displays those international organizations working with these three diseases that were not connected to any other international organizations. These organizations had their own agendas and were working with other organizations outside of this system. They created their own nested sets that were not linked to the larger network of

organizations working on these three diseases, often resulting in duplication of services and inefficient use of resources.

Within the international organizational network, the most central task was prevention (1.00), followed by system strengthening (0.34), which encompassed infrastructure development and programs to improve collaboration and information sharing, and research (0.32). The least central is care and treatment (0.03), which means that the international organizations in Thailand were not treating patients who had AIDS, malaria or TB, a task for which Thai implementing organizations, mostly local government organizations, were responsible (Appendix E, Pre Global Fund Tables, E.2 Program Data). The large donor organizations did not interaction with each other to share information and knowledge, and were only connected through the organizations they funded. Funded organizations had to fulfill the requirements of the grants for each donor, with little harmonization occurring between the donors. The result was a system where organizations duplicated work, were continually reporting on programs rather than running them and were inhibited by what they could do by a foreign organization with little understanding of the context in which they were operating. .

4.5 COLLABORATIONS

The public health planning and implementation networks in Thailand were dominated by the Ministry of Public Health, though there also existed many different communities of organizations that were clustered around area of work, disease and sector of organization. These communities were not well connected to other communities, limiting their ability to collaborate and create more holistic programs. In addition, international organizations created their own

communities that were not well connected to Thai government organizations. Because these organizations tended to perform different tasks (e.g. International organizations running prevention and research programs while Thai public health organizations provided care and treatment), the lack of collaboration across these sectors was a missed opportunity to create programs that better served the populations within Thailand.

4.5.1 The Program Design Network: Interaction in Program Planning

The interaction between the Thai program designing organizational nested set and international organizations formed a network that provides an overview of who was talking to whom, who were the controlling agencies, who connected groups, who had exclusive knowledge, who were the leaders, what types of programs they planed and who benefited from these programs. The entire network is not dense (0.02) and not fragmented (0.10) (Appendix E, Pre Global Fund Tables, E.1 Whole Network Measures).

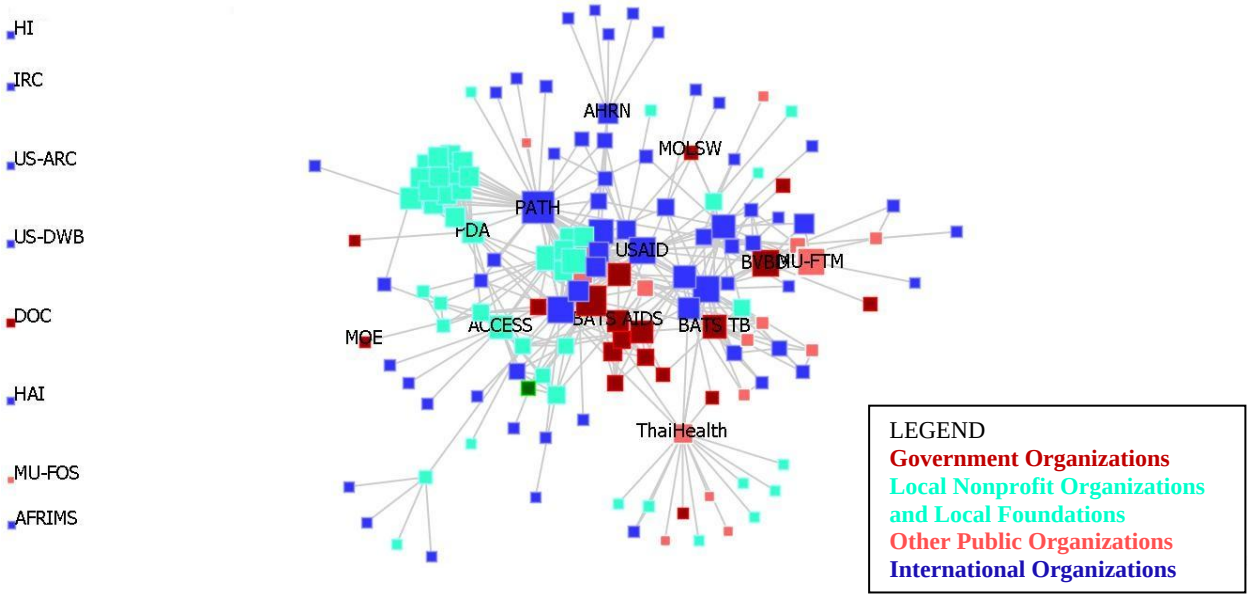

Figure 7: Interaction between IO and Thai Planning Organizations

Figure 7 shows the resource transfer interactions within the planning network for these three diseases between Thai and international organizations. Though Thai government organizations were central, they were clustered together and were not connected to many international and local nonprofit organizations. In addition, besides the Ministry of Public Health, other Thai government ministries (Ministry of Education (MOE) and Ministry of Labor (MOLSW)) were not well connected within this network. Some international organizations created their own clusters of organizations that enacted their agendas (e.g. PATH, AHRN), though their subsidiaries were not well connected to other international organizations or to each other. Finally, there still existed isolated organizations that were not connected to other organizations within this network. These organizations worked with marginalized populations (US-ARC, IRC with refugees, HI and HAI with handicapped people) and performed unique tasks (Doctors without Borders (US-DWB), Armed Services Research Institute of Medical Sciences (AFRIMS), and Mahidol University Faculty of Sciences (MU-FOS)). These organizations possessed unique knowledge that could inform the planning network and create better programs if interactions occurred between them and others within the network.

4.5.1.1 Communities of Organizations within the Program Design Network

This network had 16 unique communities with an average of 10 members per community. Over half of these groups were made up of only one sector of organizations, with 5 of the 16 all international organizations and three all public organizations. These groups were also organized around area of expertise, with a quarter of the groups having only organizations with an expertise of working with vulnerable populations (Appendix G). This grouping by expertise allowed for exchange of information around subjects like vulnerable populations but, because of a lack of diversity of expertise, limited the broader solutions that might have been

found to the problems faced by these populations. These clusters of organizations showed that this network had multiple communities that were organized around sector and field of expertise, which limited exchange of knowledge and this network's ability to introduce new ideas into the planning process.

The programs planned by organizations in this network focused on improving organizational capacity, servicing the urban poor (mostly in Bangkok), and carrying out national care and treatment plans for the three diseases (Appendix E, Pre Global Fund Tables, E.2 Program Data). There were fewer organizations working to plan programs for border populations and drug users, though these populations were and are some of the most vulnerable to all three diseases. In addition, few number of organizations worked in advocacy (usually fighting for human rights of those affected by these diseases) or in training and evaluation. Interactions between organizations that do work in these areas, which are mostly local nonprofits groups and international organizations, and those that plan national agendas should be facilitated given their unique experience and knowledge around the needs of marginalized peoples and the technical know-how of monitoring and evaluation.

4.5.2 The Implementation Network: Interaction in Program Enactment

The overlap between international organizations and those implementing programs for these three diseases in Thailand was somewhat fragmented (0.21), though the network was not dense (Appendix E, Pre Global Fund Tables, E.1 Whole Network Measures). Like the planning network, the most visible organizations within the implementation network are the central government ministries. Unlike the planning networks, where research institutes were the organizations that connected different groups of organizations, local health facilities connected

organizations within the implementation network. These organizations receive funding from central government ministries, but often work with local government offices and local nonprofit organizations to deliver services.

Organizations within this network were predominantly enacting national programs that focused on providing prevention, care and treatment services to Thai citizens. They worked at the local level and rarely exchanged information or resources between local areas, illustrated by the fact that there were many more communities of organizations in the implementing network than in the planning one. There were 65 separate communities, averaging 9 organizations per group as compared to the 16 in the planning network (Appendix G). The communities consisted of organizations that specialized in certain geographic areas (e.g. local provincial health offices and district health offices) and were almost all composed of organizations from the public sector. Implementation was localized and organizations enacting these programs were only connected though centralized, large government ministries, making it much more difficult to learn from other organization's successes and failures. The focus of implementation was on care and treatment of these diseases, with very little focus on training or evaluation of the programs, further inhibiting organizational learning.

4.5.3 Planning and Implementation Networks: Whole Network Measures

Both the planning and implementation networks of organizations prior to the Global Fund were sparsely connected and fragmented (Table 4). Implementation networks tended to be more fragmented (10% of the pairs of nodes are not connected within the planning network versus

21% within the implementation network) [2]. Within these networks, local level government organizations were responsible for their populations and local nonprofit organizations tended to operate in specific regions and areas (e.g. border areas), with geographic and program focus barriers limiting interactions. The TB and malaria planning networks were the most fragmented networks, which meant that almost half of the pairs of nodes within those networks were not interacting with one another. These networks lacked a clear national agenda to combat these diseases as a result. In addition, the TB planning network had the largest average eigenvector score. An organization has a high eigenvector score if it is connected to other highly connected organizations. The high eigenvector values and high fragmentation in the TB planning network implies that power and influence were concentrated in a subset of organizations, with many organizations not connected, resulting in information and knowledge gaps.

Table 4: Core Network Measures for Pre Global Fund, by Disease and Type of Network

Disease	Network	Density	Fragmentation	Power and Influence (Eigenvector)
All Pre Global Fund	Total (N=676)	0.00	0.19	0.02
	Planning (N=154)	0.04	0.10	0.24
	Implementation (N=593)	0.00	0.21	0.07
AIDS	Planning (N=123)	0.04	0.09	0.19
	Implementation (N-469)	0.01	0.26	0.07
Malaria	Planning (N=42)	0.09	0.43	0.21
	Implementation (N=341)	0.01	0.35	0.06
TB	Planning (N=43)	0.10	0.45	0.40
	Implementation (N=354)	0.01	0.34	0.09

The most prominent actors (highest degree centrality) within this entire action arena were the Ministry of Public Health and the Department of Corrections (Appendix E, Pre Global Fund Tables, Table E.1, Whole Network Measures). These organizations were the most visible and

[2]"The degree of fragmentation F of the network is defined as the ratio between the number of pairs of nodes that are not connected in the fragmented network to the possible number of pairs in the original fully connected network" (Y. Chen et al. 2007).

most connected within these networks. The Department of Corrections is solely responsible for healthcare within the prison system, which is often completely separate from the rest of the Thai public health system. Healthcare facilities are set up in prisons to deal with most health issues, and consultations are used with local hospitals for more serious conditions. Because HIV/AIDS is a huge problem in prisons (due to unsafe sex practices and large prevalence of IDUs) and because the Department of Corrections solely funds and runs this extensive system, it has a key role in prevention, care and treatment.

Foundations and research organizations were also leaders in these networks, particularly as connectors of disconnected groups and as possessors of exclusive knowledge, which means they worked with populations or on areas others do not (Appendix E, Pre Global Fund Tables, E.1). These organizations should be included in policy making, program design and implementation, particularly in communication, information transfer and trainings. They often connect different sectors, linking Thai government organizations to local nonprofit groups, and can provide technical assistance in planning and implementation for these diseases.

The interactions between organizations in the whole network mostly focused on local populations, organizational capacity and the urban poor (Appendix E, Pre Global Fund Tables, E.2, Program Data). The interactions about the local population were predominantly resource transfers for the national AIDS, TB and malaria plans, connecting the Ministry of Public Health to the provincial and local health offices, while organizational capacity interactions included creation of organizational networks (e.g. formation of the Thai NGO Coalition on AIDS) and provision of technical assistance to organizations. There were fewer organizations knowledgeable are those working with specific populations (e.g. people living with AIDS, border populations, youth, and drug users) involved in these networks, yet these populations are

often the ones most vulnerable to these diseases. It becomes important for the Global Fund process to include those with this knowledge into policy and program planning and implementation.

The most central task within the entire network prior to the Global Fund was care and treatment, meaning that the most common interaction between organizations was about care and treatment. The focus of the national programs for these three diseases was care and treatment, with prevention slightly less central, though still an important component of programs around these diseases (Appendix E, Pre Global Fund Tables, E.2, Program Data). Important to note is the relative few organizations working on advocacy and training and evaluation, with international organizations accounting for 61% of those working on advocacy and 39% working on training and evaluation.

4.6 THE ROLES AND RELATIONSHIPS OF CIVIL SOCIETY ORGANIZATIONS

Prior to the Global fund the Thai government funded local nonprofit organizations, but "it (was) very difficult to be in a committee and collaborating on a project because the government has many layers of how they do the process, down to the communities. And the attitude of the people in the government, they listen to the top rather than to the bottom" (Respondent 18 7 July 2010). The main actors knew each other, but did not collaborate. They often met in international arenas, at an international conference where "it is fine. We sit at the same table" (Respondent 18 7 July 2010). But once they returned to Thailand, the programs and policies remain top down with little input from beneficiaries or non-governmental organizations. The government funded local nonprofit organizations but did not work together with them

(Respondent 18 7 July 2010, Respondent 19 7 July 2010, Respondent 20 8 July 2010). In addition, there was a sometimes contentious relationship between local nonprofit organizations and government, with many nonprofits advocating for change (Respondent 20 8 July 2010, Respondent 15 22 June 2010) to improve human rights and ensure equitable treatment for all, a role that sometimes caused conflict with Thai government agencies.

Nonprofit organizations in Thailand mostly worked with specific populations or in specific areas. These organizations sometimes had long standing relationships with provincial and local government in the areas they work. Many nonprofit organizations are concentrated along the borders, particularly the Thai-Burma border, so research institutes and local nonprofits work closely with provincial health offices in places like Tak and Chiang Mai, and less so in the interior regions of Thailand. Border areas have stronger relationships between local nonprofit organizations, international organizations and government. However, these organizations did not interact outside of their geographic areas, causing a localization of knowledge and relationships, which limited the broad exchange of information and the use of it to improve programs on a national basis.

Thailand's civil society sector grew by over 100% between the early 1990s and early 2000s as a result of increases in income, increases in inequality and increases in decentralization of programs (Salamon and Anheier 1998, Anheier et al. 2004). Most of the local nonprofit organizations working on these three diseases emerged in the 1980s and 1990s to educate the populace, to advocate for policy change, and to treat those affected. However, within these three disease networks, there was not much cross sector or even intra-sector collaboration. The pre Global Fund implementation network was dominated by public organizations (almost 90% of all organizations involved were public) (Appendix H Organizations by Network, Sector and

Disease, H.1 Pre Global Fund Network), though local nonprofit organizations had a larger role in the planning network, making up almost a quarter of all organizations involved.

4.7 ACTION SITUATIONS: DISEASE SUB-NETWORKS

All three disease networks were not densely connected (between 0.03 and 0.05), though the malaria and TB networks are both highly fragmented (0.43 and 0.45 respectively) (Appendix E, Pre Global Fund Tables, E.1 Whole Network Measures). There were structural holes within these networks, implying that there were opportunities for organizations to enter these networks and fill important gaps in knowledge exchange and resource transfer.

4.7.1 Action Situation: AIDs Sub-Network

In contrast to the other two diseases, the AIDs network included different types of organizations. Figure 8 displays the resource exchange interactions (financial and technical assistance exchanges) between local nonprofit groups and international organizations within the AIDS network directly before the introduction of the Global Fund. The size of the nodes indicates total degree centrality, while color displays its Newman group (modularity=0.6). Organizations are clustered in seven main groups, with isolates listed on the left side of the figure.

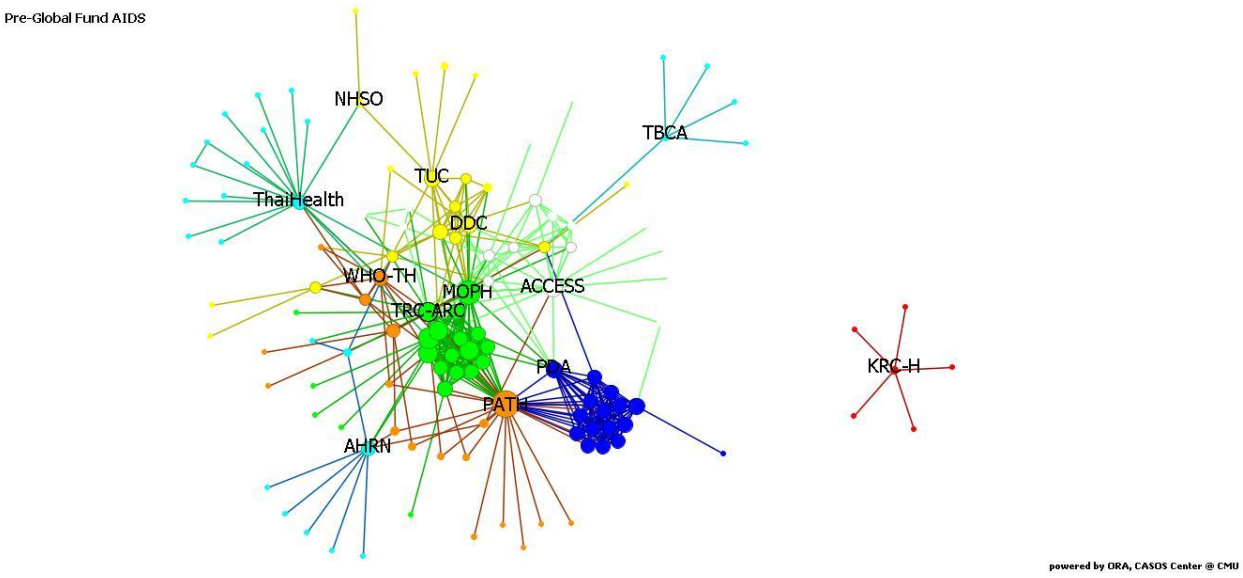

Figure 8: AIDS Planning Network, Resource Transfer Interactions, By Community and Centrality, 2000

The AIDS network had nine different communities, with an average of 14 organizations per group (Figure 8 and Appendix G). The majority of the groups had either vulnerable populations or research as the majority area of expertise of its organizational members. In addition, though there was a mix of sectors within the groups, unlike the other disease networks, the majority of organizations in 90% of the groups were international or Thai nonprofits, with only 10% having a majority that was public. This illustrates the greater variety of organizations that were involved in the AIDS network as well as the relative smaller degree of power that public organizations possessed to influence policy in the AIDS planning network.

Many of the most central organizations within this network were the receivers of funding and technical assistance (PATH, Asian Harm Reduction Network (AHRN), the ACCESS Foundation, and Population Development Association (PDA)). However, these organizations were receiving funding and technical assistance from a variety of different funders, each with their own reporting requirements and program goals. The communities that emerged were not based on field of work or geographic location, but were dictated by the funding stream, with

organizations working with USAID programs (most of those in the center of Figure 8) in a community, while those who funded AHRN (left side of Figure in blue) creating a community. The lack of connections between the funders was problematic for efficient and effective program design and implementation. Key organizations to be included in any planning or implementation process that seeks to create collaboration and coordination are the ones that span groups, which include the World Health Organization, PATH, and PDA. The Kwai River Christian Hospital (KRC-H) community is composed of organizations with unique areas of expertise, but has no interactions with the rest of the network in order share that knowledge and information. These organizations often have unique knowledge about their field of work that should be included in the network to improve policy implementation and planning.

Within the AIDs network, local nonprofit organizations worked on programs and with beneficiaries that the government would not cover, particularly with migrant workers, drug users and sex workers and also worked with local communities to educate the populace on prevention measures. They were advocates for equal protection for these groups, engaging and communicating with government, but not closely working with them for policy and program creation. Though nonprofit organizations working on similar problems and with similar populations knew each other, such as those working with migrant populations, they did not fund one another nor exchange technical assistance and knowledge. International funders created cliques around issues and agendas they deemed important. In addition, there were few organizations working with certain populations, like the IDUs who were criminalized by the Thai government for many years. The introduction of Global Fund programs for these groups created new relationships (Mr. L 7 July 2010).

The 1990s saw an increase in the number of nonprofit organizational networks within Thailand. These networks work on specific issues and with specific populations, but are often narrowly focused (Respondent 18 7 July 2010). The Thai NGO Coalition on AIDS works to bring together organizations and exchange ideas. However, one person interviewed claimed:

> In Thailand we have a very fancy network for HIV/AIDS. It is very perfect – multi-sector collaboration with all types of organizations. But when it comes to the broader issues, I don't see any. We have the Thai NGO Coalition on AIDs but I haven't heard about the Thai NGO network coalition that is not only on HIV. So it means that other sectors still need to be strengthened (Respondent 11 17 June 2010).

4.7.2 Action Situation: TB Sub-Network

The tuberculosis network had the largest number of organizational groups (13), with an average of 3 organizations per group (Appendix G). These groups tended to be composed of organizations with the same area of expertise and in the same sector and this network was the most segregated of the disease networks in terms of groups and the organizational characteristics of the members of those groups. The groups consisted of organizations that were experts on local development as well as on care and treatment (e.g. hospitals and health clinics). Hospitals played a much larger role in the TB network than in the other two disease networks, most likely a result of the importance of the strict regime of treatment that occurs with the infection of TB. Often patients need to be quarantined and are forced to spend long periods of time in a hospital setting, making it imperative that the hospitals are included in implementing these programs.

There are few nonprofit organizations working on TB in the planning or implementation networks. Non-public organizations working on TB were not well connected to the organizations creating and carrying out the national plan. A few research hospitals, universities,

and the TB zonal offices linked international organizations to Thai public ones, though international organizations and local nonprofits were working with marginalized populations and focus on research, advocacy and evaluation rather than on prevention, care and treatment.

4.7.3 Action Situation: Malaria Sub-Network

The malaria planning network had few communities with fewer members than the other two disease planning networks (Appendix G). These groups had organizational members with a variety of knowledge bases; though there were fewer knowledge bases represented within the groups (i.e. AIDS had organizations with 25 different areas of expertise whereas malaria has only 14 different ones). These groups, like the AIDS groups, had a mix of public, international and local nonprofit organizations within the groups.

Malaria programs were planned through the Ministry of Public Health implemented by provincial and district health offices and managed by regional vector control offices. Thai nonprofit organizations and international organizations had little connection to this system. Those that were involved were working with marginalized groups in Thailand, including border populations and migrants, and predominantly performing research and advocacy, leaving prevention, care and treatment to Thai public organizations.

The malaria implementation network consisted of 76 unique communities, with an average of 4 organizations per group (Appendix G). These groups primarily consisted of local public organizations, with international organizations and Thai nonprofit organizations grouped together. There were few interactions between international organizations and local government, though these organizations were often the barriers to or facilitators of program success. In addition, few local nonprofit organizations are focused on malaria. International organizations

working on malaria are often focused on research, including Oxford University, WHO and the Gates Foundation, which helped to fund the Thai Malaria Initiative in 2001, seeking to improve diagnosis and treatment of malaria along the borders. The lack of diversity of actors within this network limited innovation and the lack of advocacy organizations decreased the likelihood of policy change to better address the needs to those most affected by these diseases (e.g. migrants).

4.8 CREATION OF THE GLOBAL FUND: THAILAND'S ROLE

Thailand had an important role in the creation of the Global Fund. During the planning stage to create the Global Fund,

> (The Thai government) were worried that the Global Fund would only be for Africa and they would not include Asia from this Global Fund. Not just Thailand was concerned about this. Japan, who are the co-conveners and hosts the G8 are also concerned about this. So that is why they turned to Thailand to be a part of this TWG (transitional working group). So Thailand was invited by India, who is also the big country and they have problems in terms of TB, one of biggest countries who has problems with TB, were also invited to be part of the TWG. So, the start up of the Global Fund was uncertain and it could turn out to be any structure, so (they) needed someone who was very active and knew how to negotiate (Respondent 8 10 June 2010).

The Global Fund board consists of representatives from the developing world, with each region having a seat. For Asia, the seat rotates between member states, though the Thai delegate always attends the meetings (Respondent 7 10 June 2010). This Global Fund Thai delegate has been a member of the country coordinating mechanism (CCM) since the inception of the Global Fund in Thailand. As a result, she shares information and assists the Thai CCM about new regulations and decisions made by the Global Fund board in Geneva. The Global Fund process and their regulations evolve and organizations working within the process need to adapt in order to keep

and attract funding. The changing paperwork and regulations make it difficult for local organizations and the role of the Thai delegate and the Global Fund personnel (who are based in Switzerland but visit Thailand) is provide information and knowledge to the CCM and those who are writing program proposals.

4.9 GAPS AND MISSING PIECES IN THE ACTION ARENAS

Prior to the Global Fund the organizations attempting to eradicate these three diseases in Thailand encountered barriers to success. Government policy towards some vulnerable populations inhibited prevention, care and treatment of these three diseases. This policy resulted from lack of information and knowledge about how best to combat these diseases within these populations (e.g. drug users). The purpose of the Global Fund process within Thailand is provide situations where organizations can interact and share information, knowledge and resources to create better policies to treat these three disease. Ultimately, this process aims to improve the public health system within Thailand by strengthening the system and improving capacity and improve the foreign aid system by encouraging collaboration and harmonization.

4.9.1 Thai Policy and Attitudes

Thai policy and attitudes inhibited organizations ability to prevent, care and treat these three diseases. Prior to the Global Fund, non-Thai citizens were not able to access the 30 baht health insurance scheme. In addition, Thai citizens have identity cards which list their place of birth and could only use their health insurance at hospitals located where they were born. Thai

citizens could not access this health insurance when they migrated to work. This was especially problematic for the rural poor and sex workers who are at high risk of HIV/AIDs, TB and malaria and usually highly mobile. In addition, there was and is little public health service in Myanmar, so many people come across the border to receive treatment (especially for malaria) from nonprofit organizations and local health clinics, putting a large burden on their resources. The Thai government does not fund treatment for non-Thai citizens – funds are dispersed to hospitals on a provincial and district per capita basis so those areas with many migrants result in severely overburdened hospitals and clinics that lack resources. The hospitals still treat the migrants, but do not receive funding from them (nor can they pay). In addition, many migrants did not even go to hospitals for fear of being sent to their countries of origin.

Treatment of these diseases was often difficult as well. The malaria virus is constantly adapting and morphing, making it very difficult to treat, with strains emerging that are drug resistant. The Thai-Cambodia border is known as the drug-resistant center of the world, where strains emerge and then spread throughout the globe. In addition, to treat tuberculosis medicine must be administered several times a day for a period of several months (Respondent 13 22 June 2010, Respondent 14 22 June 2010). For migrant workers who move around a lot, this was a difficult regime to follow and they often failed to properly treat their TB, spreading it to others, creating a cycle of disease that sometimes resulted in death. The stigma attached to HIV/AIDs, that it was a foreign disease or a disease for gay men (Respondent 18 7 July 2010), limited prevention measures and treatment was delayed, limiting effectiveness. Changing these attitudes is difficult and time consuming.

4.9.2 Lack of Interaction

There were few interactions between local government institutions, including between provincial and district health offices, and hospitals. Offices in different geographic regions did not share information or knowledge, communication which could improve the planning and implementation of these programs. In addition, there were missing linkages between those organizations that were highly specialized and between highly specialized organizations and government organizations. For example, those organizations working with sex workers did not speak to those working with rural, poor populations. Regional and local government offices did not communicate with one another and national Ministries were missing communication linkages between each other, particularly between the Ministry of Public Health and the Ministry of Labor and Social Welfare (MOLSW). The MOLSW should be included in the planning and implementation process for these three diseases, especially because they are responsible for registration of migrants (who are highly affected by these diseases) and because prevention programs in the workplace are often the best way to reach much of the population.

When implementing programs, nonprofit and international organizations worked in specific provinces or districts, so they were rarely connected to more than two provincial health offices, limiting their ability to share their knowledge and experience. International organizations did not share resources or knowledge with one another, instead were only connected to other international organizations through those they funded. In addition, there was little evidence of collaboration and coordination of programs between local nonprofit organizations, which were only connected through their donors. By directly interacting and sharing resources and information, they could improve planning of programs (collaboration) and implementation (coordination), increasingly overall effectiveness.

The malaria disease networks displayed the lack of diversity of actors, both in terms of sector and type, but also in terms of the work they performed. The majority of actors work in care and treatment of malaria victims. However, because of the nature of the virus, the only way to combat this disease is through research and creation of new drugs and prevention strategies. Pre-Global Fund, the malaria networks lacked diversity, possibly leading to a lack of innovative ideas. The research organizations that did exist were rare, not centrally located and did not interact with one another or with those providing care and treatment services.

The tuberculosis disease network lacked a clear leader in their national program (Respondent 17 29 June 2010). There were many different communities and organizations were connected to other well connected organizations, indicating that there were clusters of dense organizations and not many connections across communities. TB programs were funded through different government departments, though there is no evidence that these organizations work together and the few nonprofit and international organizations that work on this issue (WVFT, RTF, DPF) were not connected through resource transfer to the network. It was dispersed with no clear center of power. In addition, the focus of the TB programs was on care and treatment, not research or prevention, which limited high quality long term strategies to combat this disease.

The national programs to combat these diseases were specific and rarely overlapped. However, these diseases affected populations because of a variety of factors, including poverty levels, migration, lack of education, or membership in a disadvantaged group, and the failure to address the root causes of these diseases affected Thailand's ability to combat them. More comprehensive programs would be more effective in preventing these diseases in the long term. In addition, comprehensive programs would improve the entire public health system and not just

these three disease networks, by creating relationships and collaborations across sectors and fields.

4.10 GOALS OF THE GLOBAL FUND

The introduction of the Global Fund into Thailand in 2001, and the beginning of programs and funding in 2002, created interactions between these organizations that affected their relationships and the programs that were planned and enacted. It aimed to improve coordination and collaboration between organizations, hoping to improve the ability of the organizations within the networks to combat these diseases. The resource exchange and knowledge transfer interactions lead to program outcomes that affect future interactions. Ultimately, this process aims to improve the public health system by improving organizational, human and community capacity and improving coordination and collaboration between international organizations and between international organizations and the public health system. The next chapter will explore the ways in which the interactions occurring within the Global Fund process affected the relationships between the nested set of organizations working to plan programs and how, ultimately, it changed the types of programs being planned.

5.0 PLANNING AND POLICY MAKING IN THE GLOBAL FUND PROCESS

Prior to the introduction of the Global Fund into Thailand, programs and projects to combat AIDS, malaria and TB were rarely created through collaboration. Either central government offices or foreign donors identified broad agendas and local organizations were chosen to enact these programs and projects. These agendas were created separately and, in many cases, without consulting one other. Within the Thai central government, the Ministry of Public Health primarily, and usually solely, created the programs, with little discussion and input from other Thai government offices. There was little interaction between Thai government organizations and local nonprofit groups, who often worked with international organizations, and organizations formed communities around areas of expertise, with few connections between these clusters.

The goal of the Global Fund, in addition to combating these three diseases through the introduction of large sums of money into the local public health sector, is to make key stakeholders involved in the process plan programs and agendas together. This can help reduce redundancies and inefficiencies and help to improve agenda setting by including more voices and areas of expertise into the process. In creating country coordinating mechanisms that get key actors into the same room and set agendas to combat these three diseases, the Global Fund hopes to improve collaboration and coordination between organizations that will help identify current gaps in programming and strengthening the system where it needs it. This chapter examines the resource transfer and knowledge exchange interactions between actors within the planning and

policy making Global Fund process to understand who is interacting, in what ways, and how this affects the types of programs planned. In addition, the interactions between organizations will be examined over time to determine if and in what ways adaptation is occurring and how these interactions affect the public health and international aid systems in Thailand.

5.1.1 The Global Fund Program Creation Process in Thailand

Collaboration is a "process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited versions of what is possible" (Gray 1989, 5). There are different types of collaboration, from information sharing to program coordination and joint planning to integration of systems (Guo and Acar 2005). Collaboration can be understood in terms of content (e.g. service components, financing and planning activities) and level (national or local) (Wang et al. 2007). Within the process to determine who, what, where and how of the AIDS, malaria and TB programs, organizations within Thailand interact in a variety of ways. Firstly, the Global Fund has set up the country coordinating mechanism (CCM) that meets monthly throughout the proposal development and writing process. The CCM currently consists of 26 members, 9 government, 12 private and 3 international organizations. The public CCM members represent 5 different ministries (Ministry of Public Health, Ministry of Labor, Ministry of Education, Ministry of Foreign Affairs, Ministry of Social Development and Human Security), the Office of the National Economic and Social Development Board and the Bangkok provincial government. The private members include representatives of the national hospital association, the pharmaceutical association and a business coalition on AIDS, in addition to nonprofit organizations that serve those affected by the diseases. Other members include academics and representatives from UNAIDS, WHO and the

US government. The goals of this mechanism are to better plan and implement Global Fund programs.

In addition to regular CCM meetings, the Global Fund holds annual regional meetings (which include representatives from East and Southeast Asia and Global Fund representatives from Switzerland) and technical workshops that focus on proposal creation, monitoring and evaluation and the rules and regulations of the Global Fund. The interaction that occurs between actors within these contexts also influences how and if they chose to work together. Knowledge is shared at these meetings that allows for new ideas to be introduced into the proposals that improve existing programs.

The CCM in Thailand created three technical committees consisting of experts in each of the three diseases. These committees usually consist of less than ten people and include nonprofit, academic and government officials (Respondent 1 3 June 2010, Respondent 20 8 July 2010, Respondent 23 9 July 2010). The committees meet and interact with organizations who want to be principal recipients (PRs) of Global Fund monies to create proposals and then recommend the PR they feel is best to the CCM. International organizations often provide technical assistance to the proposal developers and have provided a native English proposal writer in the past (CCM Thailand *various years*). The interactions between the actors on the technical committees and PRs lead to changing program focuses and agendas.

Interactions between organizations from different sectors, with historical relationships, are affected by the power they hold within this process. In addition, the interactions change organizational power over time. Nonetheless, the chair of the CCM, who chooses the principal recipient of Global Fund monies each round, is a representative of the Ministry of Public Health, while one of the principal recipients in every funded round has been a department within the

Ministry of Public Health. The power that the Ministry of Public Health holds in this process may inhibit true collaboration.

Another aspect of the process which affects the power and interest organizations have in the process is the lack of funding for the CCM. Principal recipients sign contracts with the Global Fund and receive money directly from them. Members of the CCM are not compensated for their time (Respondent 1 3 June 2010, Respondent 16 24 June 2010, Respondent 20 8 July 2010, Respondent 22 9 July 2010). In addition,

> When the issues are happening, because these people are the high level people and they are quite busy and they don't have time to be looking at the detail of the Global Fund that we require and the standard format. They just come for the meeting and presenting and sometime they say they support the policy and then they forget, because it is not really their job" (Respondent 1 3 June 2010).

Therefore, those most likely to benefit from the Global Fund process are the ones most involved. CCM members like the Minister of Labor and Social Welfare attends the meetings, but is not heavily involved in other Global Fund process activities, though key stakeholders recognize the need for collaboration across government agencies (Respondent 11 17 June 2010, Respondent 16 24 June 2010). Programs designed by the Ministry of Public Health cannot be carried out properly without buy-in from other ministries. For example, designing programs to help combat malaria along the borders needs input from the Ministry of Labor given the large percentages of migrants that exist there. They are often illegal and fear reprisals from the government. Without a proper registration system that allows people to access health care, programs by the Ministry of Public Health to help this population will not succeed.

Between round 1 of the Global Fund process in Thailand in 2002 until round 10 in 2011, interactions between organizations have changed relationships and program focus, adapting to the needs of the affected populations, to the requirements of the Global Fund and to the

capabilities of the planning and implementing organizations. The goals and focus of the program proposals in all three diseases have changed over time, reflecting a greater understanding of the TB, malaria and AIDS problems in Thailand as well as the priorities of the Global Fund and the international community. Overall, adaptation is occurring within all three of the disease networks, though at varying rates and to varying degrees.

5.1.2 Key Stakeholder Opinions about the Global Fund Planning Process

Key stakeholders felt that some of the positive aspects of the Global Fund process were the large amount of funding and the length of the grant (Respondent 1 3 June 2010, Respondent 9 15 June 2010, Respondent 20 8 July 2010). Unlike grants of the past that were typically funded for 1-2 years, the Global Fund funds for five years, though after two years the performance of the grant is examined and funding allocated based on how well the grant performed. In Thailand, funded grants have been funded for all five years. In addition, the first AIDS grant was extended for an additional three years. However, the rules of the process are regularly changed, making it difficult for those writing the proposals to keep up (Respondent 10 17 June 2010, Respondent 11 17 June 2010, Respondent 18 7 July 2010). There is a lack of communication between the local organizations and the Global Fund with only the principal recipient organizations having regular contact with the Global Fund, while sub-recipients and those organizations under them do not have direct contact with the Swiss office.

5.2 STRUCTURE OF THE PLANNING NETWORK

The Global Fund action arena consists of organizations interacting by exchanging resources, providing technical assistance and in transferring knowledge and information in all three disease networks. This chapter focuses on the program planning nested set, which consists of the overlap between the Thai public health planning system and the foreign aid system. Interactions that occur within the Global Fund planning process form the networks and include financial transfers, technical assistance and reports of the program results, and knowledge and information exchange, which occurs at Global Fund sponsored meetings. These meetings include annual regional meetings, where results from programs are presented and shared, and workshops, where trainings in Global Fund rules and requirements are taught. The structure formed through these interactions is revealed through the examination of basis measures of the Global Fund network (and of the network directly prior to its introduction).

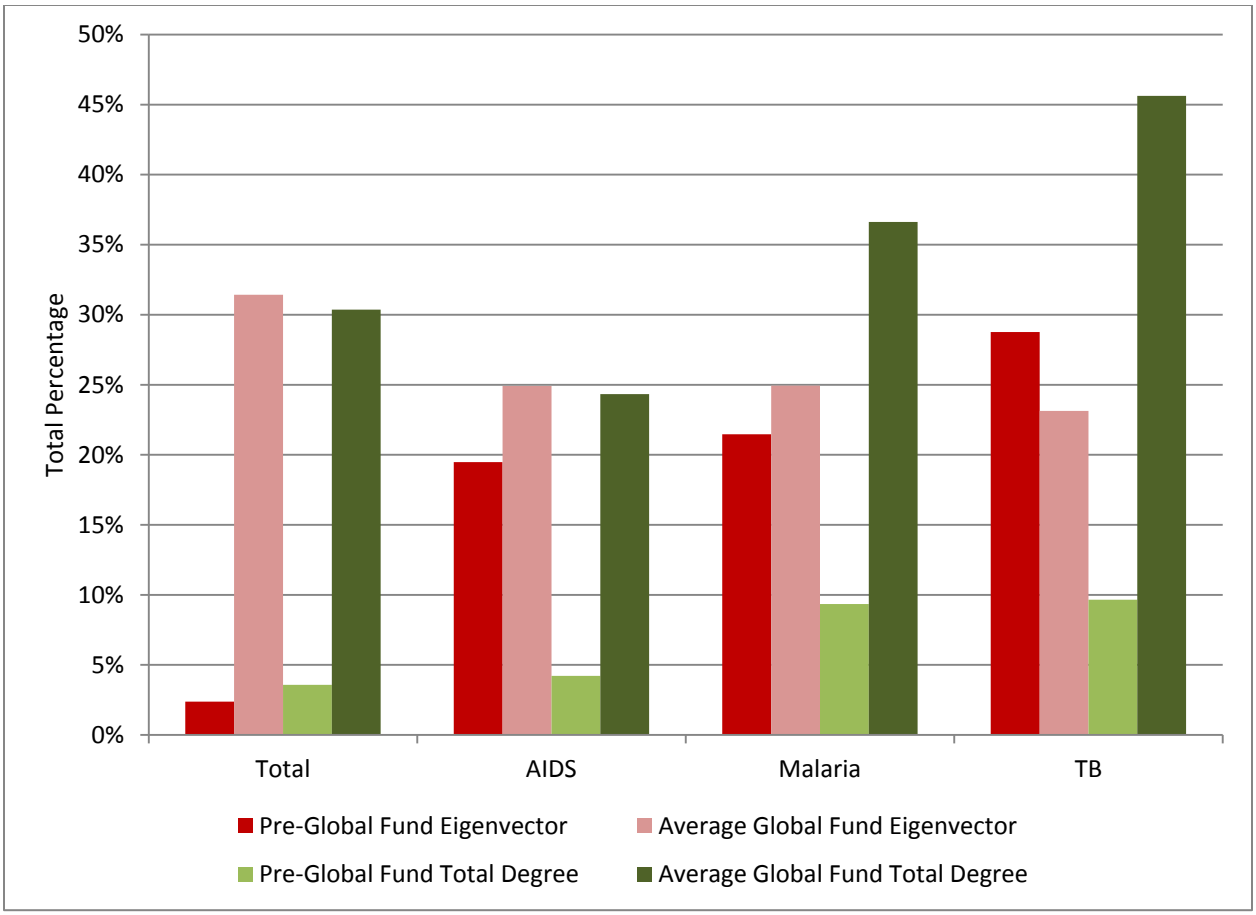

Figure 9: Average Centralities, Pre Global Fund and Global Fund, 2001-2010

Figure 9 displays average centralities of these disease networks pre-Global Fund and throughout the Global Fund period in Thailand (2002-2010), and by disease network. Total degree centrality (ratio of observed ties to total possible ties) reveals the density of the networks. The density of all three disease networks is relatively low prior to the Global Fund in Thailand. However, when examining the Eigenvector centralities by pre-Global Fund disease network, they are significantly larger (Appendix J, Eigenvector Centralities by Network). This indicates that many organizations were not well connected within the pre Global Fund network, but those that were connected were connected to others who were highly connected. Power was concentrated within a small group of organizational hands in all three diseases.

Both total degree and eigenvector centralities rise with the introduction of the Global Fund (the exception is average eigenvector centralities for TB organizations, discussed below) (Appendix J, Eigenvector Centrality by Network). The total disease network becomes more connected with the Global Fund process, with the total average degree centrality over 0.30, which means that almost thirty percent of the total connections possible are in existence. Total eigenvector centrality increases even more in both the total network and the AIDS network. Organizations are interacting with one another, and especially are interacting with key organizations, indicating that social capital is rising in these two networks. Within the TB and malaria networks, previously unconnected organizations are interacting, though they are not immediately interacting with the key organizations. In terms of organizations working in TB, eigenvector centrality has decreased with the introduction of the Global Fund, revealing that power is becoming more dispersed in this previously power concentrated network.

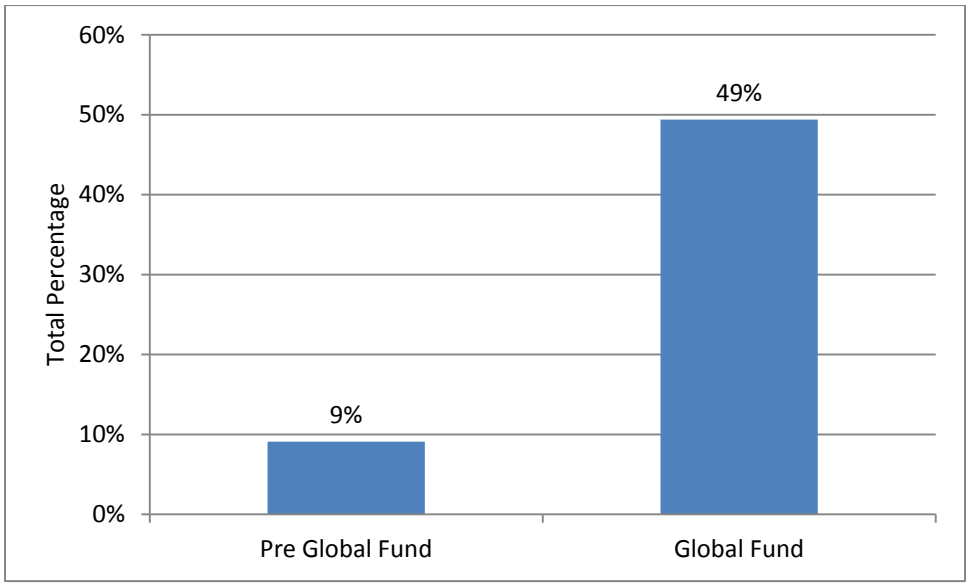

Figure 10: Percent of Organizations working in Multiple Disease Networks

Organizations working in the pre-Global Fund network rarely work in more than one disease area, which indicates that this network is segregated by disease area and helps to explain

why the total centralities are relatively low compared to those broken out by disease (Figure 9 and Figure 10). However, in the Global Fund process about half of the organizations are working on more than one disease, resulting in more communication and exchange of ideas across diseases. This can improve service delivery and program design, particularly along border areas where all three diseases are problematic and where resources are limited and when planning AIDS and TB programs, which are co-infectious diseases.

5.3 PLANNING NETWORK TRENDS OVER TIME

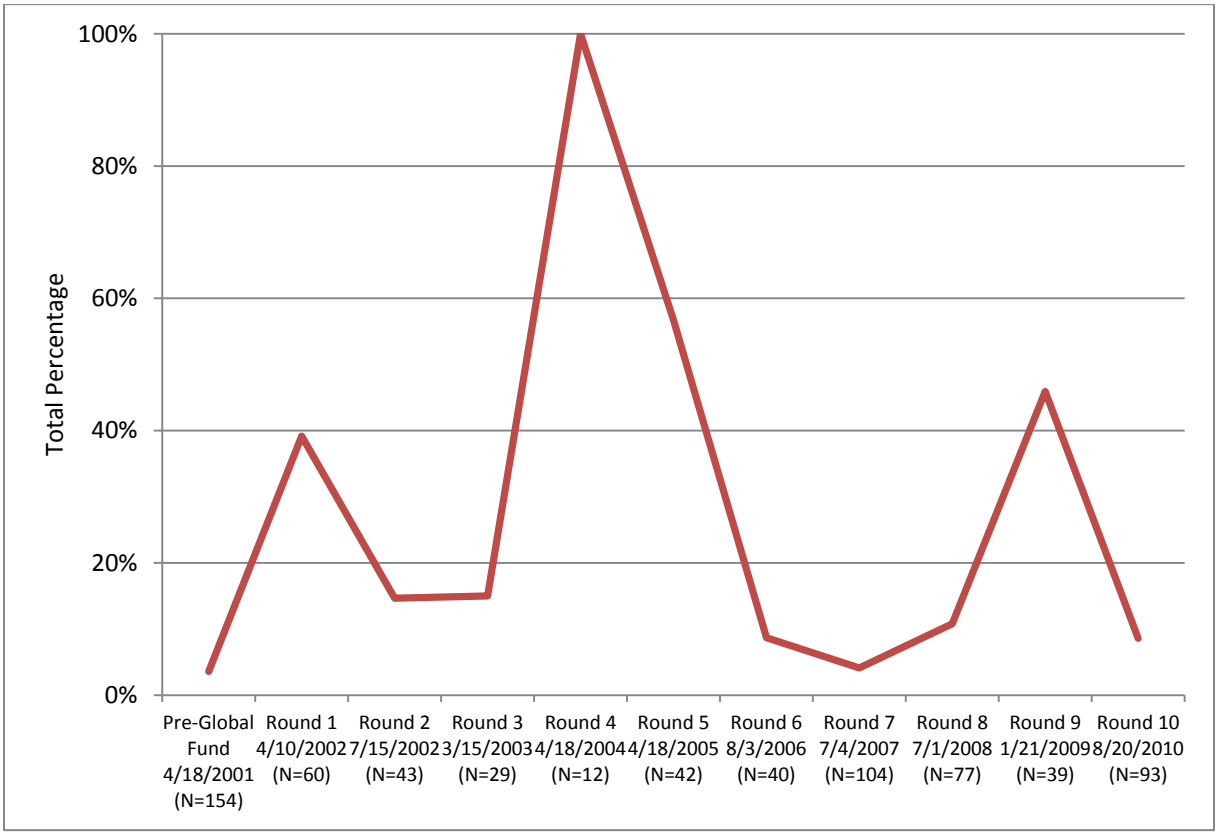

Figure 11: Organizational Density in the Planning Network, Global Fund Process in Thailand, 2001-2010

Figure 11 shows the average organizational density by round in Thailand in the Global Fund planning process. Prior to the introduction of the Global Fund, organizational density in all three disease networks was low, with organizations not interacting with one another. This is primarily a result of two factors – first, the Ministry of Public Health was the primary policy and program decision maker with little input from other organizations and second, international donors acted independently and were not well connected to other international donor programs or to the Thai government.

With the introduction of the Global Fund, the density within the planning network grew (Round 1 = 0.39). The increase in density between pre-Global Fund and Round 1 is a result of the creation of the CCM, a forum for actors to interact which meets at least four times a year to discuss proposal design and get updates from principal recipients. However, by round 2 there was more diversity of programming and types of organizations. Raks Thai Foundation (the Thai branch of CARE International) was the principal recipient for an AIDS prevention program focused on migrant workers and they created resource transfer ties between civil society organizations working throughout Thailand and incorporated them into the network. However, this community of organizations was not well connected to the government's AIDS program for round 2, which focused on infected mothers and children. Though incorporated into the networks, organizations from different sectors and areas of expertise still formed separate communities that did not regularly interact with different communities. In addition, the round 2 malaria program consisted of another community of organizations working to plan their program that did not interact with those organizations working on AIDS programming. This complexity resulted in a decline in overall network density in round 2.

The relatively low density of organizations in round 3 is a result of an anomaly in the Global Fund process in Thailand. In Round 3, Raks Thai Foundation led a group of civil society actors in Thailand to create a non-CCM proposal entitled "HIV Prevention, Care and Support for Injecting Drug Users," or "CASIDU," It is not the Global Fund's policy to fund non-CCM proposals, particularly in places where a stable and legitimate government exists. However, this group argued that most members of the CCM would not support any proposal that included prevention programs for injecting drug users. At the time, the Thai government had initiated a war on drugs which resulted in thousands of extra-judicial killings and had indicated an unwillingness to engage in harm reduction programs. However, though data were scarce, it is estimated that over half of IDUs in Thailand were HIV positive (Barrett et al. 2010), making this one of the most at-risks groups for contracting HIV/AIDS.

There were only a handful of organizations working on this non-CCM proposal that interacted to create and to implement this program, working closely with one another to the exclusion of everyone else in the network. This resulted in many problems for the success of the program due to lack of Thai governmental support and lack of clear leadership within the planning and implementation process. The Round 3 organizational density is a result of a highly democratic network where no organization took the lead, resulting in fighting over jurisdiction and power (Respondent 20 2010, Respondent 21 2010). They were connected within their small community of organizations but not to organizations outside of it, resulting in a stagnant network where little can be achieved. In addition, the results of the non-CCM proposal affected NGO relationships with the Ministry of Public Health.

> (The Ministry of Public Health) were very upset, not because it was IDU but because it was non-CCM… People kept coming up to (the PR) and saying, 'how could you do this to Thailand?' And they tried to block the project. And the program, it was very problematic. Everybody was learning…A long learning

> process and a lot of conflicts within the project… (PR) between SRs, SRs between SRs, everybody was fighting (Respondent 20 8 July 2010).

After Round 3, density is relatively low within funded rounds and higher in rounds that were not funded (but had meetings and workshops). In rounds 4, 5 and 9, no proposals were funded but organizations interacted with one another at Global Fund regional meetings, Global Fund workshops and trainings, resulting in a dense network given the attendance at these of most of the organizational network members. These interactions allowed organizations to exchange information and the outcomes of their programs with one another, resulting in knowledge and information exchange that informed later program planning.

The relatively low density in funded rounds (rounds 6, 7, 8 and 10) is a result of more diverse programming, expansion of geographic scope and incorporation of a greater variety of organizations within the process, resulting in the formation of sub-network structures. In addition, between round 6 and round 10, at least two of the three diseases were planned each round. Because some organizations work only on one disease, the result of multi-disease planning by round results in lower organizational density (e.g. TB organization are connected to other TB organizations but not to malaria organizations)[3]. In Round 7, 8 and 10, multiple proposals were funded and there existed a variety of principal recipients and sub-recipients involved in the planning process. In addition, multi-country proposals emerged in south-east Asia in Round 7 and again in Round 10. Figure 12 displays the planning network for Round 7.

[3] Average organizational density for the Global Fund rounds is 0.52, and average organizational density for Rounds 6-10 for all Global Fund rounds is 0.49. Average organizational density of all Global Fund rounds for AIDS (0.63), malaria (0.63) and TB (0.72) and for Rounds 6-10 for AIDS (0.65), malaria (0.71), and TB (0.67).

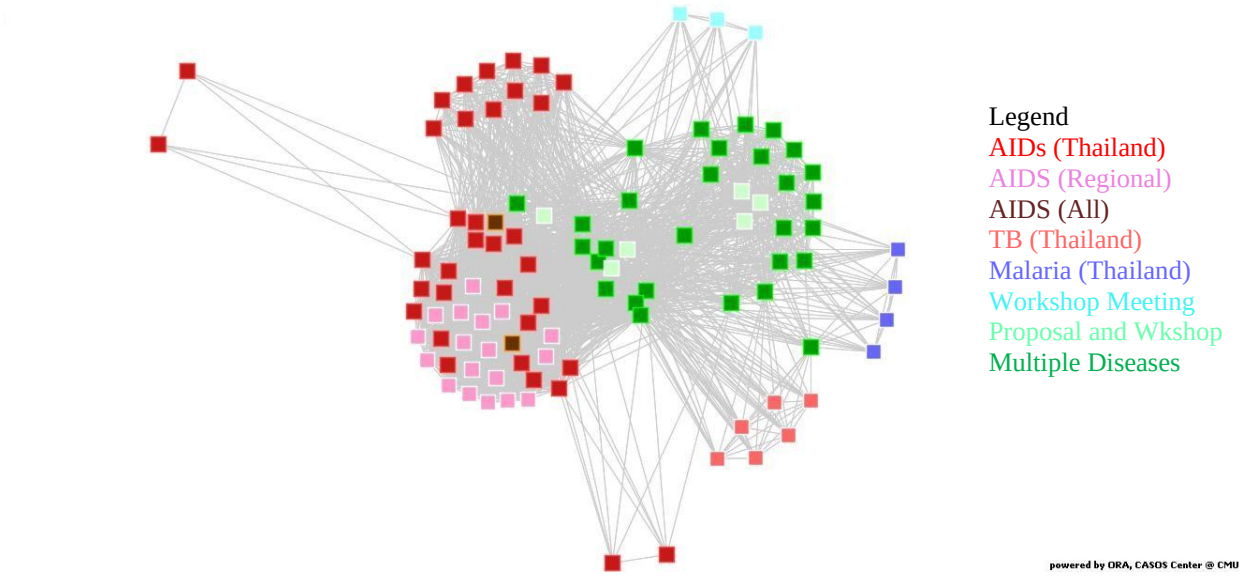

Figure 12: Thailand Round 7 Planning Network, Colored by Event

The network displays information and knowledge exchange interactions, which occurred at planning proposal meetings and Global Fund sponsored workshops. The figure displays the clusters of organizations that exist around diseases or events. There are communities that exist within the larger planning network, communities that are predominantly based on each individual proposal development process. The organizations at the center of this network are those that work in multiple disease areas and/or have attended both proposal meetings and Global Fund sponsored workshops. These workshops are predominantly for those implementing Global Fund programs, while those attending the proposal planning meetings are mostly members of the CCM. About 28% of the organizations work in more than one disease area in this round, and about 6% of them plan the proposals and attend Global Fund workshops (shown in shades of green in Figure 12). Though there is an opportunity for the Global Fund to help bridge the gap between planning and implementation with their workshops by including the planning organizations and those implementing the programs, this is not occurring in practice.

The clustering of organizations around these disease proposals helps to explain the decline in organizational density. Early rounds tended to focus on one or two disease proposals per round, whereas later rounds became more complex, with rounds including proposals for all three diseases, and sometimes regional and continuing proposals included as well. For example, in round 7, there were five proposals submitted, one for each of the three diseases as well as a proposal for the continuation of the AIDS round 1 program and a regional ASEAN AIDS proposal to work with mobile populations. This increase in complexity helps to explain the decrease in organizational density in funded rounds over time as those organizations working on each proposal tend to be clustered together, with only some overlap. This allows for the networks of organizations to create more effective policies as well as adapt to changing external conditions.

5.4 GLOBAL FUND PROGRAMS IN THAILAND

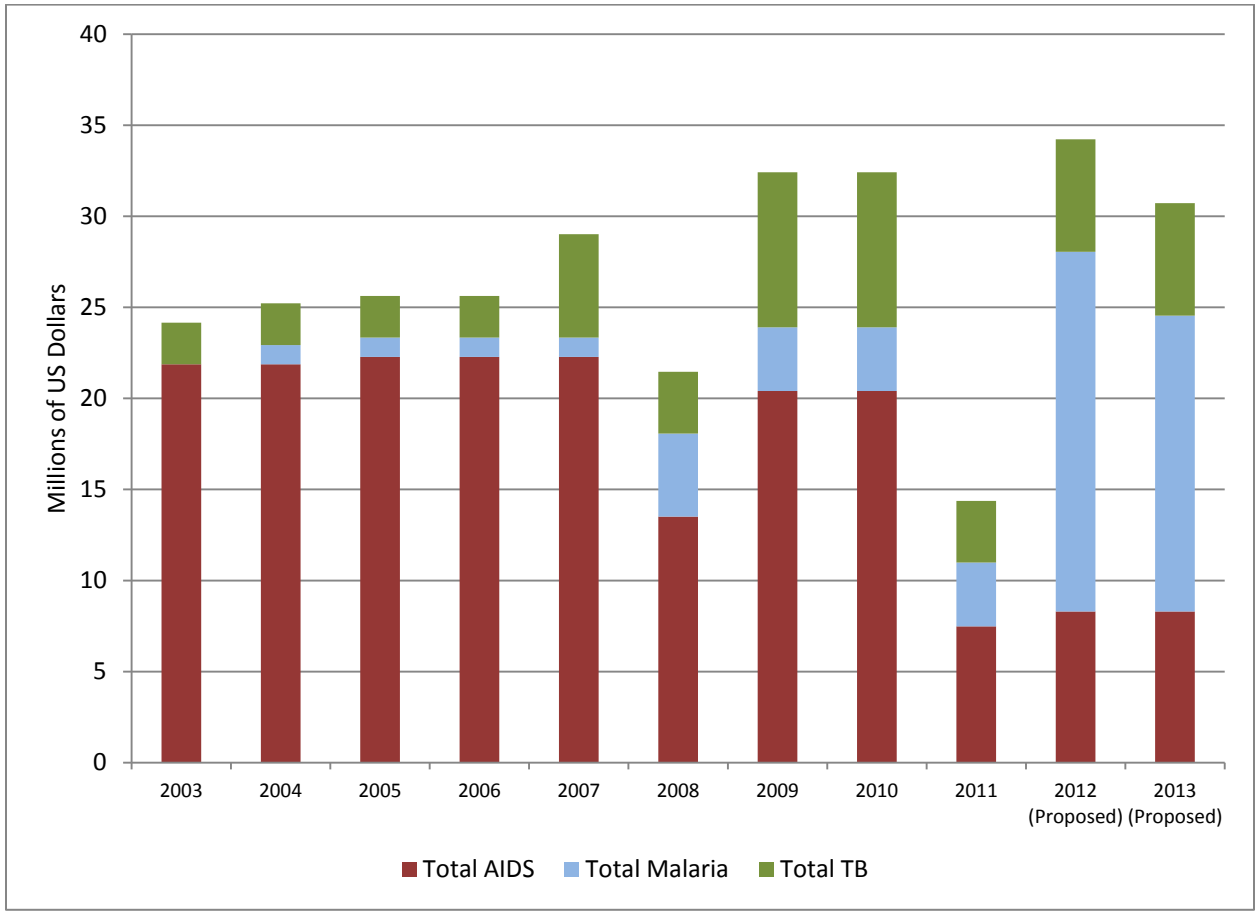

Figure 13: Total Global Fund monies to Thailand by Disease by Year, 2003-2013 (CCM *various years*, The Global Fund *various years*)

On average, Thailand receives about $30 million per year in Global Fund monies. Figure 13 shows total Global Fund monies to Thailand by disease. Overall, the trend in Global Fund monies to Thailand is increasing over time, with the exception of 2011 when some programs ended and others had not yet begun. The majority of funding in early rounds went towards AIDS related programming however, in the most recent round of funding malaria programs have the majority share of the total monies. This change reflects an increase in worldwide attention to the problem of malaria, a greater understanding of this problem in Thailand and how it, more than

the other two diseases, rapidly spreads across borders and affects people throughout the world (Respondent 23 9 July 2010).

The focus of the early rounds of funding for all three diseases focused on strengthening prevention and care and treatment services. Round 1 for AIDS and TB both focused on national programs that filled gaps in pre-existing programs, including gaps in border healthcare, gaps in youth programming and gaps in at-work programs (Appendix F, Thai grants, both funded and unfunded in Thailand). Malaria, unfunded in Round 1 but funded in Round 2, focused on improving prevention and care and treatment services in rural, high-risk villages, areas where access to healthcare is limited. As time progressed, proposals planned for all three diseases focused on programming for vulnerable populations rather than nationwide programming. This included working with border populations for all three diseases. In addition, AIDS programs focused on 'most at-risk populations', sex workers, men who have sex with men, migrants, and intravenous drug users. In Round 7, the malaria proposal expanded the round 2 proposal by increasing the number of rural, high-risk villages they worked in as well as including programs for those living in the conflict-affected southern region of Thailand. These villages found it difficult to access healthcare due to violence occurring between them and healthcare facilities (Respondent 23 9 July 2010). The most recent round of funding, Round 10, follows this trend, with the AIDS proposal focused on vulnerable children, and expands on it with the TB proposal, which addresses vulnerable populations but also seeks to harmonize the work of all TB health care providers in Bangkok. The malaria program targets high risk border areas but also seeks to create a better monitoring and evaluation system and improve communication between organizations within Thailand and those working across Thai borders, including Cambodian and Burmese organizations. These trends, from nationwide system strengthening to working with

small subsets of at-risk populations to increasing harmonization of treatment plans and improving monitoring and evaluations systems mirrors Global Fund's priorities and displays changing trends in program planning.

5.5 GLOBAL FUND PROGRAM DESCRIPTIONS

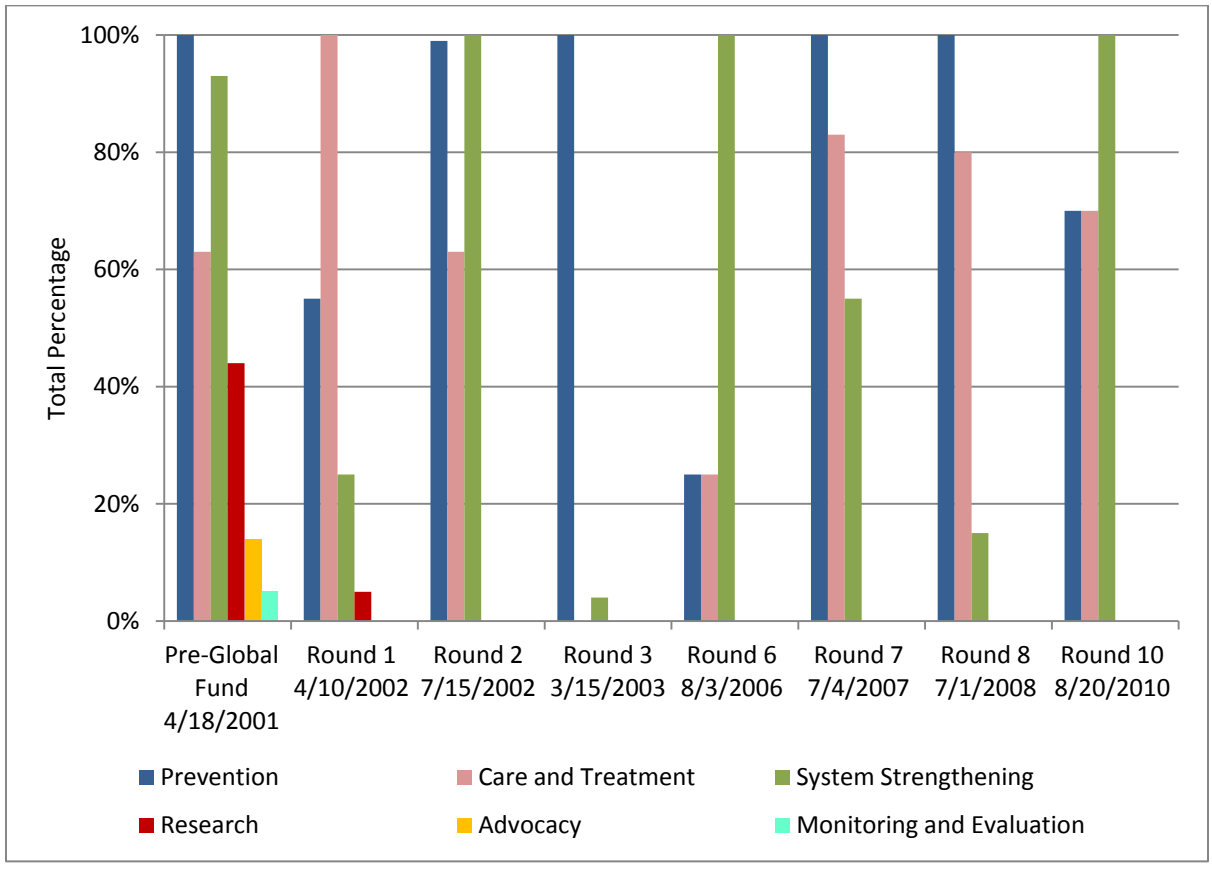

Figure 14: Main Function of Grant By Funded Round[4]

[4] Funded rounds are: AIDS – Round 1, Round 2, Round 3, Round 7 (continuation of Round 1), Round 8, Round 10, Malaria – Round 2, Round 7, Round 10, TB – Round 1, Round 6, Round 10

The types of programs planned, who they serve and what they seek to achieve has changed over time. Before the Global Fund, programs focused on six main areas of work –prevention, care and treatment, system strengthening, research, advocacy, and planning, training and evaluation. Figure 14 displays organization by task network centrality by Global Fund round. Only funded rounds are displayed given that this graph is illustrating the focus of the grants. The graph shows the centrality of functions of the grant by year. Organizations are connected to the grants they are working on, resulting in centrality measures for grant components (e.g. The grant in round 3 focused on prevention of AIDS in IDUs, so prevention is the central task for this grant).

Early rounds of Global Fund programs focused on care and treatment. These programs sought to fill gaps in care and treatment. For example, prior to the introduction of the Global Fund, TB had decreased in importance in the minds of health care professionals in Thailand despite remaining a large problem, particularly in border areas and among migrant populations. "Most people felt that TB was an 'old' disease…They are interested in high technology stuff and not in TB…This is why there is need for Global Fund programs" (Respondent 13 22 June 2010). The Round 1 TB program focused on training hospital workers and village health workers on how to diagnose TB and the proper care and treatment of the disease. Though there is no discernible pattern in the activities the programs are focused on, nonprofit organizations focus almost exclusively on prevention programs while care and treatment is performed through Thai public organizations, including hospitals, local health offices and clinics.

The focus of the Global Fund programs are on prevention, care and treatment, and system strengthening, whereas prior to the Global Fund there was a greater variety of program types. Though there are research and monitoring and evaluation components in these programs, there are no programs solely focused on these areas. Research and M&E are folded into the programs,

with the Global Fund controlling these processes in some ways. The Global Fund approves certain proposals that focus on areas they deem important. Research components for these proposals are related to these focus areas, heavily influenced by the Global Fund priorities. In addition, the Global Fund dictates the indicators that should be collected, with no input from those organizations implementing the programs (Respondent 4 3 June 2010, Respondent 6 8 June 2010, Respondent 10 17 June 2010, Respondent 15 22 June 2010, Respondent 21 8 July 2010). By identifying the data to collect, the Global Fund determines what are the important outputs and outcomes of these programs, though they might not be in practice. For example, the Global Fund collects data on the number of condoms given out to sex workers, though, if the goal of the program is to decrease the incidence of HIV/AIDS, the outcome to measure should be the increase in knowledge about HIV/AIDS prevention and the regular use of the condoms. This type of data is not collected by counting the number of condoms given out but by talking with the women and men to determine if their behavior has changed since the start of the program. These outcomes are more difficult to report on, but provide a more meaningful story, a story that the Global Fund does not place priority on telling (Respondent 18 7 July 2010, Respondent 19 7 July 2010).

5.5.1 Program Beneficiaries

The interaction between organizations within the Global Fund process, specifically between the Thai planning public health organizations and international organizations, results in changing program type and focus. The early grants (Round 1 and 2) focused primarily on strengthening the public health system, including training and improved testing across Thailand and its public health system. However, the focus shifted to working with vulnerable populations by round 3,

particularly those most at risk for HIV/AIDS, TB and malaria. These included migrant workers, sex workers, men who have sex with men, and drug users. This was a departure from the early rounds and can be attributed to the inclusion of a greater variety of actors into the public health planning sector, including international organizations and local nonprofit organizations who had worked with these vulnerable populations in the past.

The most recent round of funding, Round 10, follows the trend of focusing on vulnerable populations who have historically been left out of the public health system while also seeking to harmonize and establish standard operating procedure throughout the entire system. These trends, from nationwide system strengthening to working with small subsets of at-risk populations to harmonization of treatment plans and strengthening monitoring and evaluations systems display a process where the interactions between different types of organizations, including public, international and local civil society organizations, lead to adaptation of program type and focus.

5.5.2 The Changing Focus of AIDS Programs

Grants focused on HIV/AIDS have been funded by the Global Fund in Round 1, Round 2, Round 3, Round 8 and Round 10. In addition, the Round 1 grant was renewed in Round 7 for an additional three years. The changing focus of the AIDs program reflect increasing interactions between organizations from different sectors and with different areas of expertise, and show an opening up of the traditional public health planning system to new ideas, introduced through interactions with organizations from the international aid system. The first round of AIDS funding sought to create prevention programming for large segments of Thai society (e.g. youth, workers) that had recently been deemed at-risk and also to strengthen the system for people

living with HIV/AIDS. Funding for this program began in the first round and, after the 5 year grant term, was extended for three more years. After filling these large gaps in programming in the first round, subsequent rounds of funding focused on smaller segments of Thai society that were especially vulnerable to AIDS (Interview Data). These included the creation of a nonprofit collaborative network to plan and implement prevention programs for migrant workers and addressing the needs of 'most at risk populations' (MARPs), who include sex workers, men who have sex with men and intravenous drug users. The most recent round focuses on vulnerable children.

5.5.3 Strengthening the Malaria Public Health System

Malaria programs in Thailand have been funded in Rounds 2, 7 and 10. Unlike AIDS, interactions between organizations within the Global Fund planning process for malaria result in programs that focus predominantly on strengthening the system of diagnosis and treatment, specifically for migrant populations. Malaria is highly endemic along the border areas of Thailand, where migrant populations live making them the most at-risk populations for this disease. The second round Global Fund malaria program focused on building local capacity by training migrant health workers and village health workers who had basic knowledge of prevention, care and treatment and could assist members of their communities in 200 of the 800 most malaria affected villages (Respondent 23 9 July 2010). Round 7 extended this program to more villages and extended it to the southern border, where a violent conflict is on-going, making it difficult for villagers to travel long distances for diagnosis and treatment. With village health workers, they are able to get care and treatment without having to leave their communities. The most recent round of funding is the largest to date in for malaria in Thailand

and the most of all three diseases in round 10. The more consistent program focus within malaria programming, as opposed to AIDS and TB programs, is the result of fewer organizations working within the process and therefore fewer new organizations entering into the planning network. The organizations that worked on malaria from the first round interact with one another and form these programs but do not regularly interact with new organizations, resulting in the lack of new ideas and new types of programs.

5.5.4 The Variety of TB Program Activities

The Global Fund funded TB programs in Thailand in Rounds 1, 6, 8 and 10. All three rounds focus on ensuring proper diagnosis, care and treatment of TB in vulnerable populations. These include migrant populations, hill tribes, youth groups and urban poor, as well as research and programming for TB and HIV, co-infectious diseases. The interaction between organizations working within the TB planning network results a larger the variety of activities and focuses than exist within the other disease networks. From Round 1, TB program activities included care and treatment programs as well as attempting to strengthen the national system. Activities ranged from developing a national monitoring support structure to oversee treatment services for TB to institutionalizing an accreditation mechanism that certified NGOs and businesses that provide services for TB to empowering non-Thai communities to reduce their TB burden (The Global Fund 2002). The diversity of activities, and the broad goals of the TB proposals, results in confusion about who in charge and what are the ultimate goals of these programs (Respondent 17 29 June 2010).

5.5.5 Gaps in Understanding

A theme emerging from key stakeholder interviews was their discussion about gaps that existed in the planning process that resulted from lack of data about the populations being served and the failure to tie subsequent rounds of proposals together. These gaps in understanding are occurring within organizations working in Thailand and within the Global Fund. Organizations within the planning process in Thailand regularly interact with one another. However, these same organizations do not interact with the Global Fund, resulting in an information gap between the planning process in Thailand and the administrative process in Geneva. One main issue key stakeholders had with the process was a lack of an overall plan between rounds (Respondent 17 29 June 2010, Respondent 11 17 June 2010, Respondent 20 8 July 2010). They felt that each round of funding and proposal functioned separately from one another, which inhibited the creation of a large plan to eradicate and contain these diseases. In addition, there is a focus on prevention but not on care and treatment, and especially not on ensuring access to care and treatment in the long term. "(Organizations) have to get other programs because Global Fund does not have that part, you know, social access. People don't believe that – you join the Global Fund and you can't get long term care…They count on temporary activities, specifically on counting numbers of people" (Respondent 17 29 June 2010). The idea is that the local government should provide care and treatment in the long term, which the Thai government does, but the issue arises with at-risk populations who have limited access to this care. If they contract HIV/AIDS they need constant, consistent care, which is often missing. "The activities under Global Fund are all about prevention. Nothing about living with HIV, only preventing with condom, condom, condom" (Respondent 18 7 July 2010).

Another result of the lack of regularly interaction between the Global Fund in Geneva and those operating within local contexts are redundant activities. For example, "this week there will be a meeting of what they call the Stop TB partnership funded by Global Fund and exactly a week later there will be an event funded by someone else. It is the same people attending both meetings discussing the same issues. So, even though as much as they encourage us to integrate it is easier to not do so" (Respondent 17 29 June 2010). The lack of harmonization between international actors within Thailand results in inefficient use of resources. Those international organizations involved in the Global Fund process interact with one another but, those international organizations that exist outside of the Global Fund action arena still fail to harmonize their programs and activities.

Most of these proposals work with at-risk populations about which there is a lack of data making it difficult to plan effective programs when lacking a true understanding of the scale and scope of the problem. For example, there exists almost no data on the number of drug users in Thailand, especially by region, nor about their HIV status, so it is difficult knowing where to allocate funds and how to set benchmarks. It is also difficult tracking results given the lack of an initial benchmark. However, the interactions between organizations from different sectors that have different areas of expertise have helped to identify the gaps in information and data and have formed program activities to focus on this research. One component of the round 8 AIDS program is a consortium of research institutions and universities that are collecting data nationwide on drug users and their health, the first time this has occurred on this level (Respondent 12 21 June 2010, CCM Thailand 2008).

The Global Fund does not have an in-country presence and so relies on a contracted auditing agency to monitor and evaluate their programs. Because they use performance funding

(where funding is cut if organizations are not meeting their targets), these monitoring agencies have a key role in the process. In Thailand's case, KPMG regularly audits the principal recipient and sub-recipients. However, these auditors have no health care background and do not understand the complexities of delivering services in the environments in which these organizations work. KPMG's interaction with organizations working on Global Fund grants consists of examining their results, counting numbers and reporting back to the Global Fund, which uses KPMG's reports almost exclusively to make performance based funding decisions. These interactions are couched in mystery, with KPMG not accountable to the organizations they are auditing, to the people those organizations are serving or to the public at large (Respondent 10 17 June 2010, Respondent 17 29 June 2010, Respondent 18 7 July 2010, Respondent 20 8 July 2010). They do not publish their reports nor do they provide data about their process, which is problematic for the Global Fund, an organization that stresses transparency and accountability.

5.6 ACTORS AND ORGANIZATIONS IN THE PLANNING PROCESS

Table 5: Planning organizations by Type of Organization and by Disease

Percent of Total Organizations by Sector												
	Local Nonprofit			***IO***			***Public***			***Private (For Profit)***		
Pre-Global Fund	23.6			49.0			24.5			2.9		
Global Fund	20.6			25.1			47.3			7.0		
Percent of Total of Organization by Sector and Disease (Average)												
	AIDS				**TB**				**Malaria**			
	Local Nonprofit	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***
Pre-Global Fund	32.5	43.9	20.3	3.3	14.0	48.8	34.9	2.3	7.1	64.3	26.2	2.4
Global Fund	22.0	30.2	40.3	6.1	20.9	21.4	49.7	8.0	17.8	20.1	54.0	8.0

Prior to the introduction of the Global Fund, the majority of planning organizations within all three disease networks were international organizations (Table 5). This changed with the Global Fund process. Thai public organizations are the majority of the total network and the largest percent of organizations in all three diseases (AIDS=40.3%, TB=49.7% and Malaria=54.0%). Both local nonprofit organizations and international organizations have decreased in terms of number involved in the overall system. This is primarily a result of the individualized programs that international organizations ran through local nonprofits prior to the Global Fund. Though the local nonprofit organizations have decreased in terms of the share of total organizations, those that are involved in the Global Fund process interact more with public organizations and are more involved in setting national policy than in the past. In addition, for-profit organizations have increased in share of total organizations (from 2.9% pre-Global Fund to 7.0% during the Global Fund process). Finally, international organizations (which include international nonprofit organizations, multi-lateral and bilateral donors, institutes, and foundations that have a main office outside of Thailand) do not make up as a large of the percent of organizations working on these three diseases during the Global Fund process than they did pre-Global Fund.

When examining the types of organizations working on the three diseases, there are some differences in sector breakdown by disease. Prior to the Global Fund, over 60% of the organizations working on malaria in Thailand were international organizations (including the Gates Foundation, World Health Organization and Roll Back Malaria), with the introduction of the Global Fund leading to a large drop in the percent of total organizations that are international. These international organizations worked own their own research projects and had their own agendas prior to the Global Fund. With the Global Fund, the international organizations serve as technical assistants to the planning organizations, though they make up a smaller percentage of

total organizations involved. The Global Fund has seen an increase in public organizational participation within the planning process in all three disease networks. This is a result of greater participation of different ministries, including the representatives from the Ministry of Labor, the Ministry of Foreign Affairs and the Ministry of Education serving on the CCM.

5.6.1 Organizational Centrality by Sector and Disease

Table 6: Eigenvector Centralities by Type of Organization and Disease

Eigenvector Centrality by Type of Organization				
	Local Nonprofit	***IO***	***Public***	***Private***
Pre-Global Fund	0.23	0.24	0.25	0.04
Global Fund	0.32	0.28	0.40	0.40

Eigenvector Centrality by Type of Organization (Average)												
	AIDS				**TB**				**Malaria**			
	Local Nonprofit	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***
Pre-Global Fund	0.19	0.19	0.22	0.07	0.47	0.44	0.32	NA	0.27	0.20	0.27	0.02
Global Fund	0.25	0.27	0.27	0.33	0.40	0.39	0.48	0.44	0.31	0.19	0.35	0.39

Table 6 displays average eigenvector centralities by type of organization and disease, pre-Global Fund and during the Global Fund process. Grouped by sector of organization, all groups increased their eigenvector centrality on average. This means that, on average, organizations are more connected to other connected organizations than pre-Global Fund when clusters of organizations existed around international donor agendas. Less connected organizations were connected to more centralized ones (i.e. USAID, by virtue of its funded programs, was connected to many smaller, local NGOs who implemented their programs, but those small organizations were not well connected to other key organizations like the Ministry of Public Health).

Organizations are interacting with key organizations much more in the Global Fund process than they did in the past. Though this allows for greater collaboration, one of the downsides of these relationships for nonprofit organizations is, "once you're in a partnership with the Global Fund and CCM, NGOs take more to the meeting table, but there is no outside advocacy like there used to be. There used to be a lot of protesting, now, they go to the CCM and talk about it there" (Respondent 20 8 July 2010). The literature about nonprofit organizations and civil society in general argues whether this sector should collaborate with government or be a check on government powers (Foley and Edwards 1996, Gramsci 1971, Katz 2006). Sometimes confrontational behavior inspires greater and faster change than working within the system.

Private, for-profit organizations have become more powerful and connected within the Global Fund process in Thailand in all three diseases. Though interesting, it should be noted that there are still very few private organizations involved in the planning process (8% of organizations for both malaria and TB and 6% for AIDS), though the ones that are involved are highly connected. These include KPMG, who is in charge of monitoring and evaluation for all Global Fund projects, reporting back to the Global fund in Switzerland and pharmaceutical manufacturing organizations who work to improve programs in Thailand.

Though international organizations have decreased in terms of percent of total organizations, those included in the total Global Fund network and the AIDS network are more connected to key organizations (Tables 5 and 6). They became less connected to key organizations in malaria and TB networks, which have seen a jump in public and private organizations as connected to key stakeholders. Though local nonprofits have increased in terms of percent of total organizations participating in the TB network, those that are involved are less

connected to key stakeholders than prior to the Global Fund. These new local nonprofits are small organizations that work with very specific populations (e.g. TB/AIDS co-infections, patient rights, treatment of disadvantaged populations) and are not central to this network. Within the malaria network, local nonprofit organizations are more connected to key organizations than in the past, increasing their social capital and ability to affect program design and policy. The nonprofit organizations as percent of total organizations have decreased within both the AIDS and total networks, though those that remain are more important to the overall network. The Global Fund process increased the percent of total organizations that were public as well as the variety of public organizations participating in the planning process and their connectedness to other highly connected organizations.

5.6.2 Control of the Process

Within a network there is always a question of who is in control of what information, resources, and how they are able to use them to gain power and influence. Within this network, power is shared by different types of organizations (as evidenced by their eigenvector centralities). However, there are debates about who is really in control of the process, if genuine collaboration is occurring, and what the public sector role is within in this process.

The country coordinating mechanism in Thailand is chaired by a Ministry of Public Health official and government officials occupy key positions within the process. There is a perception among key stakeholders that the government priorities and goals for the programs do not always match up with the needs of the beneficiaries and the goals of private organizations. For example,

> In Round 8 because there are 3 PRs for different functions, (organizations) need to collaborate with the government…But…if the priorities of the government, if they are not on this program, they don't help. In Round 8, there is money to improve (programs) for all the MARPs (most at-risk populations), including migrants and drug users. But the government doesn't have much experience with these groups - they work only with sex workers and men who have sex with men before. They concentrate on that more than the other two so it is quite difficult. But in Round 2 organizations directly received Global Fund money and worked directly with provincial public health offices, so it is easier. When (organizations) work with the central level and the central level holds the money, they have to follow the policy of the national level and if they do not support it, it is kind of difficult to get the money from the central level to the field level to conduct the programs (Respondent 21 8 July 2010).

So even with though the interactions occurring within the CCM structure, which key stakeholders believed created more cross-sector collaboration, the Thai government still creates (or fails to create) policies and programs that can help or hinder the Global fund programs (Respondent 21 8 July 2010, Respondent 1 3 June 2010, Respondent 18 7 July 2010).

Though collaboration is needed, when interactions occur in environments that are too democratic and lack leadership, they can result in ineffective programs and processes (Provan and Milward 2001). In Thailand, particularly in the TB programs, the lack of leadership within the national program results in confusion about the long term goals and lack of focus in program planning (Respondent 13 22 June 2010, Respondent 14 22 June 2010, Respondent 3 3 June 2010). When interactions occur between many different types of organizations, with different priorities, a recognized leader can eliminate confusion and inefficient interactions and help guide the process and make difficult program and policy decisions.

The Global Fund uses performance based funding, in which grants are examined after two years and if they are not performing well enough, funding is cut or eliminated. Because of these large stakes, monitoring and evaluation become very important within this process. Within the planning process, measures and metrics are chosen to track results. However, because the

actors from the Global Fund in Geneva do not regularly interact with those organizations working in Thailand, recipients of funds have little input in the determination of metrics. As a result, the Global Fund in Geneva is indicating what the important results of these programs are and how the story should be told. This power over those organizations working in Thailand eliminates their ability to truly own their programs and to identify and present how these programs are changing people's lives.

5.7 THE ROLE OF INTERNATIONAL ORGANIZATIONS

International organizations interact with local organizations within the Global Fund process in Thailand in a variety of ways. These organizations include multilateral organizations like UN agencies that provide technical assistance, universities who perform research, and subsidiaries of international non-governmental organizations like World Vision Foundation of Thailand, that write proposals and serve as principal recipients for the programs. In fact, until the most recent round, every non-governmental principal recipient was a local subsidiary of an international non-governmental organization. In round 10, the Thai organization AIDS Access Foundation is principal recipient.

5.7.1 The Decreasing Importance of International Organizations

Figure 15 displays the connectedness of international organizations to key organizations by round in the Global Fund planning process in Thailand (their eigenvector centrality). The N in parentheses is the number of international organizations involved in that round of funding in

Thailand. As time has gone on, international organizations have become less important in the Global Fund process in Thailand. This is true for all types of IOs (including INGOs, multilateral organizations, universities, and foundations). This is the result of two trends – first, there is increasing country ownership of programs and, second, the roles international organizations are playing within the process are changing.

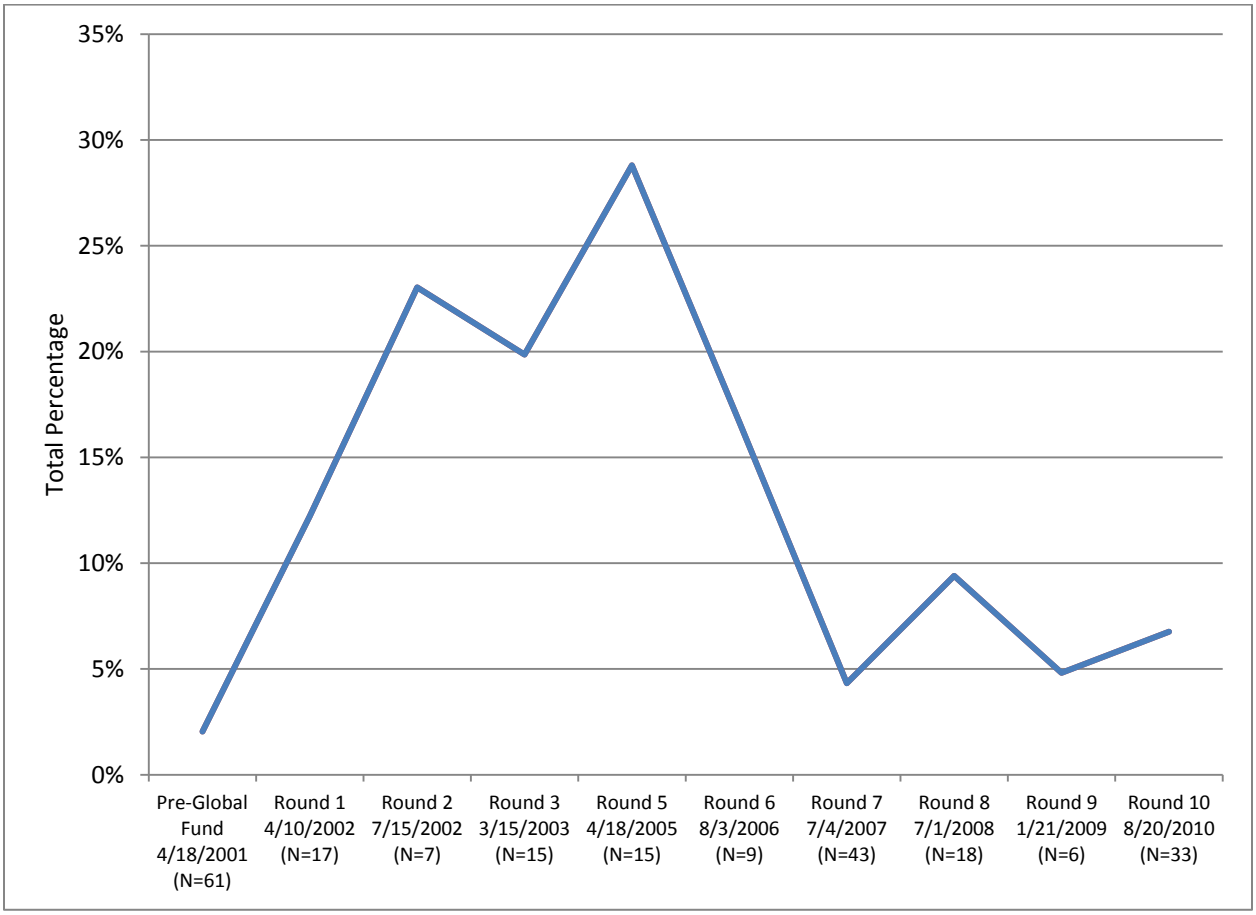

Figure 15: Average Eigenvector Centralities for International Organizations by Round

The Global Fund process in Thailand allowed for greater country ownership of programs (Respondent 1 3 June 2010, Respondent 17 29 June 2010, Respondent 16 24 June 2010, Respondent 22 9 July 2010). The governing structure of the CCM, under the leadership of the Ministry of Public Health and resulting in the interaction between local civil society groups,

international organizations and the Thai government, results in Global Fund grants emerging from the needs of the country, not from the agenda of a foreign organization. Nonetheless, because the CCM is primarily run by public institutions in Thailand, with input from other groups, the grants reflect government priorities. International organizations play less of a role in the creation of the programs, with public institutions taking center stage. The positives of this process are that the grants reflect the needs of the country and are supported by the public institutions, ensuring that implementation will be supported by government groups. However, some negatives are that, because of government policy, sometimes programs that are needed are not deemed a priority and do not get the attention they deserve.

The second reason for the decline in international organizational importance within this process is the changing roles of those IOs. Prior to the introduction of the Global Fund, IOs ran their own programs, created funding relationships and established their own agendas. With their inclusion into the Global Fund process, "there is this big new funding partner. And big new funding partners get attention and energy...And (IOs) role has really nothing to do with direct service delivery. It is technical…As Global Fund money has flowed in, the IOs have less influence" (Respondent 2 3 June 2010). The majority of IOs in the Global Fund process are providing technical assistance, both to government institutions and to large nonprofit organizations who run the programs. However, their agendas are no longer front and center and, because of the size of Global Fund monies, their ability to influence policy and agenda setting has diminished.

5.7.2 Technical Assistance and Capacity Building

International organizations, both international nongovernment and multilateral organizations, are providing technical assistance in this process, along with Thai public institutions (primarily universities and institutes) (Respondent 2 3 June 2010, Respondent 6 8 June 2010, Respondent 8 10 June 2010, Respondent 11 17 June 2010, Respondent 15 22 June 2010). The different types of international organizations provide different technical services within the process. INGOs provide almost no care and treatment services, instead focusing on prevention programs and capacity building. Their technical assistance takes the form of training of local service providers on the needs of special populations. Because the INGOs work in specific geographic areas, their technical assistance focuses on the organizations in those areas.

The other international organizations within this process, which include UN agencies, research institutes, universities, bilateral donors, and foundations, provide technical assistance work on a national level to help develop broad national agendas for the three diseases, to create monitoring and evaluation tools for these programs and to provide administrative assistance. They help to develop indicators and curricula for trainings. In addition, these groups provide proposal writers to actually draft the Thailand Global Fund proposals. Despite these provisions of technical assistance, there is still a feeling as though the Global Fund, like funding mechanisms of old, have failed to figure out how to properly incorporate technical assistance into the process (Respondent 1 3 June 2010). Proposals are created by the CCM, predominantly run by the Thai government, and, because of cultural and bureaucratic cultures, these groups often do not ask for the technical assistance they need.

5.8 BARRIERS TO PARTICIPATION IN THE PLANNING PROCESS

The CCM is designed to bring government ministries, private organizations and international actors together to improve public health programs and, tangentially, help create policies that support these programs, but, because of its structure and the interests of its members, often only those with the largest interest in the outcomes actively participate. In addition, there are geographic barriers to participation, with those organizations based outside of Bangkok having no say in the planning process. This will be discussed in more detail in chapter 6.

5.9 COMMUNITIES WITHIN THE PLANNING NETWORK

The modular structures in networks, also called communities or compartments understood to be large sub-graphs within the overall networks, can identify functionally important or closely related classes of nodes from interaction data (Newman 2003, Wasserman and Faust 1994). The detection procedure for determining community structure is to divide the network into non-overlapping groups. Newman and Girvan originally observed that real-world networks thought to contain modular structure generally have Q values in the range [0.3, 0.7], which is a rough guide of acceptable modularity values (2004).

Within the planning network, the existence of communities, their numbers and sizes, and the attributes of organizational members within the communities have changed over time. For all disease networks, there are fewer communities during the planning process than pre-Global Fund. In addition, the communities that exist have more organizational members than before the Global Fund process existed in Thailand (Appendix G). In the first round of the Global Fund

process no groups existed, a departure from the past when there existed sixteen communities with an average of 10 members within the network. The Global Fund process eliminated these identifiable clusters and created a network with no discernible groups. However, over time, communities have emerged within the total network as well as in the three individual disease networks, though there are still relatively few compared to the pre-Global Fund network, and those that do exist have a greater number of members per group than prior to the Global Fund.

Organizational communities are clustered around the individual grant proposals. Therefore, it is important to have a variety of areas of expertise when composing these grants, creating better proposals and programs. Attributes of organizational members by group have changed over time. In the early rounds of the total network, organizations within a group tended to be from one sector. For example, of the two communities from round 2, almost 70% of the organizations in one group were public, while about 65% of organizations in the other were civil society organizations. Over time, communities are composed of organizations from different sectors. Nonetheless, communities of organizations are clustered around the grant proposal they are involved in, though a small percentage of organizations that work on one disease are involved in communities that predominantly focus on another disease. These organizations can bridge information and knowledge gaps. Prior to the Global Fund, organizations within a community were focused on one area, such as working with vulnerable populations or performing research. With the Global Fund, organizations within communities possess a greater variety of areas of expertise, allowing for information and knowledge exchange to occur.

5.9.1 Planning Communities by Disease Network

Communities within the AIDs network follow many of the same patterns as the overall network. Over time the communities become more of a mix of public, nonprofit and international organizations, and have organizational members who possess a greater variety of knowledge bases. However, those communities that have a majority of civil society organizations tend to have members with a smaller variety of expertise, with organizations tending to work with vulnerable populations and people living with HIV/AIDS.

Within the malaria network, communities have evolved over time to include organizations from all four sectors (public, private, nonprofit and international) and to include a greater variety of areas of expertise. In round 2, there were organizations that had twelve different areas of expertise working the malaria network. By round 7, five years later, organizations working in the malaria network had 23 different areas of expertise, with new additions including organizations working on coordination, with health insurance and in reproductive health. Inclusion of this variety of organizations improves program design to better serve those most in need.

Communities do not exist within the TB network until round 5, three years after communities have already developed in the other two networks. This lack of structure may help explain why many of the organizations working in the TB network in Thailand feel as though there is no leader and confusion as to who is in charge of the national program (Interview Data). The communities that do develop in the more recent rounds of funding tend to be constructed around AIDS programs rather than TB ones. For example, some organizations work in both the TB and AIDS networks (they are co-infectious diseases), but are organized around the AIDS

proposal within the TB network rather than the TB one. This lack of focus further explains the confusion that exists by organizational members of the TB network.

5.10 ADAPTATION

In order to determine if the networks are adapting over time, it is important to examine the networks in relation to one another. A QAP analysis was run on the planning networks over time, using the first round network as the dependent variable.

Table 7: QAP Analysis for Planning Networks by Funded Round

Round of Global Fund	Correlation – Total Network	Correlation – AIDS	Correlation – Malaria	Correlation – TB
Pre-Global Fund Network	0.07***	0.10***	0.09***	0.18***
Round 2	0.23***	0.20***	0.25***	0.80***
Round 3	0.30***	0.30***	---	---
Round 6	0.13***	---	0.13***	0.12***
Round 7	0.07***	0.08***	0.08***	0.07***
Round 8	0.05***	0.17***	---	0.04*
Round 10	0.05***	0.05***	0.03**	0.04**

Dependent Network is Round 1 of the Global Fund – Only Funded Rounds displayed
*** Significant at a 1% level, ** Significant at a 5% level, * Significant at a 10% level

Table 7 displays the correlations between organizational networks by funded round. The correlation is significant between the overall networks by round, though the degree to which the networks are correlated is decreasing over time. The correlation of the Global Fund networks to the pre-Global Fund network is low, indicating that the Global Fund has created new interactions

between organizations, creating relationships, introducing new actors and changing the network structure.

Early round planning networks are more highly correlated than later ones, with the networks changing over time. These correlations indicate that the internal characteristics of the networks remained structurally similar, though they are diverging as time goes on. After further analysis, the similarity in structure in the early rounds is primarily a result of the country coordinating mechanism, which is composed of basically the same organizations who meet regularly in every round. However, as time goes on the networks are getting more complex, disrupting this grouping. There were five different proposals submitted in round 7, including one continuation of the AIDS round 1 proposal, revised AIDS and TB proposals focusing on vulnerable populations, a malaria proposal working with migrants and conflict zones and, finally, a regional ASEAN proposal working to scale up the regional response to combat AIDS in migrants and other mobile populations. The introduction of regional proposal planning is an adaptation that emerged over time with an understanding that these diseases do not recognize borders and that those most affected are often mobile and regularly move from one country to another (Respondent 16 24 June 2010, Respondent 22 9 July 2010). This planning process added new organizations and ideas into the process. The subsequent planning rounds kept this complexity, which helped to change the internal characteristics of the network.

The second proposal round for the TB network is more highly correlated to the first round than in the other disease networks. In addition, the first round is also more highly correlated to pre-Global Fund than the other networks. The TB network did not adapt as quickly as the other disease networks, though the correlation decreases as time goes on. Unlike the other two disease networks, the pre-Global Fund TB planning network had very similar actors to the

first few rounds of TB Global Fund planning. The international organizations that were included prior to the Global Fund for the most part were actors with the process as well. These included the World Health Organization and some of the large nonprofit organizations like Raks Thai Foundation and World Vision Foundation of Thailand. Both the AIDS and malaria networks prior to the Global Fund had a greater variety of actors than in the early rounds of funding than did TB, which help explain the smaller correlations between the first round of funding and pre-Global Fund networks for these diseases.

Besides the changing internal characteristics of the structures of these networks, there is further evidence of adaptation in the overall network trends, in changing types of organizations involved (and their roles), in the programs themselves, in the communities that emerge and in the role international organizations play throughout this process. At the beginning of this process the planning network for these three diseases was sparse and had communities of organizations clustered by sector or areas of expertise, without regular knowledge exchange between communities. With the Global Fund, density increased until 2003, when it gradually began to decline. The early rounds featured a highly connected network, where communities were segregated by sector and where there were the organizations involved had limited areas of expertise. However, over time, connectedness decreased, which allowed for a more flexible network, and the communities became more integrated with organizations with a greater variety of areas of expertise participating in the process. These trends are reflected in changing program focus, from nationwide system strengthening, which occurred in the early rounds, to working with most at-risk populations in more recent rounds, to the focus on harmonization, creating of oversight systems and monitoring and evaluation in the current round.

The roles that different organizations play has changed over time as well. The percent of organizations that are international organizations decreased with the introduction of the Global Fund (from 49% to 23% - Table 6), though their connectedness to other key organizations increased (from 0.24 to 0.28 – Table 7). International organizational roles within these disease networks have changed, from funders and creators of their own agendas, to providers of technical assistance and capacity building to local organizations. This is mirrored by the large increase in public organizations as a percent of total organizations working on these diseases. The variety of public organizations involved in the process increased, with more central ministries connected to one another, more universities involved and an attempt to create more connections to local public organizations (Appendix I, Types of Organizations). Despite these attempts, the power and influence still rests with the Ministry of Public Health, mostly due to the time it takes to work on these diseases and the mandates each organization holds. Nonetheless, public organizations within Thailand are more important to combating these three diseases than in the past, and hold more power within the process. They are connected to one another in ways they weren't in the past and are more aware of the cross ministerial issues that surround public health programs. In addition, local nonprofit organizations are now more connected to key organizations, allowing their voices to be included in the process, though they have decreased in terms of percent of total organizations involved. Those included are more powerful and connected, particularly to Thai government organizations.

5.10.1 Changing the Public Health Planning System

The interactions between organizations within the Global Fund process in Thailand results in adaptation of network structure and substance over time. In addition, this adaptation leads to

changes within the entire public health planning nested set in Thailand. The interactions between different government ministries results in greater understanding of the goals and agendas of other organizations and has resulted in greater collaboration both within the Global Fund process and on other public health projects (Respondent 16 24 June 2010, Respondent 22 9 July 2010).

The interactions between local civil society groups and central government ministries resulted in information and knowledge transfer that led to changing policies. Prior to the Global Fund, the Thai government criminalized drug use and provided virtually no public health services to this group, leaving it up to local civil society groups. The interactions between organizations as a result of the Global Fund process resulted in the Thai government having a greater understanding of the problem and working together with local civil society groups to create a harm reduction policy (Respondent 9 15 June 2010, Respondent 16 24 June 2010, Respondent 15 22 June 2010). The harm reduction policy recognizes the need to provide clean needles to intravenous drug users as a way to prevent transmission of HIV and, on a broader scale, recognizes that drug users need assistance rather than persecution. This policy would not have emerged without the interaction between organizations within the Global Fund process, leading to learning and change (Respondent 9 15 June 2010, Respondent 16 24 June 2010, Respondent 15 22 June 2010).

The Global Fund process also changed the geographic barriers to program planning. Over time, the interaction between organizations within this process resulted in a better understanding of the causes of public health problems and the need for international collaboration to combat them. Southeast Asian regional programs have been planned since 2007, resulting in learning and an increase in collaboration across borders. In the past there have

been contentious relationships between Thai and Burmese and Thai and Cambodian governments and planning programs together represents an important change within the public health system.

5.10.2 Changing the Foreign Aid System in Thailand

The participation of international organizations within the planning process has resulted in changes in their positions and roles within the process as well as changes in the foreign aid system in Thailand as a whole. The introduction of this large amount of money from the Global Fund has decreased the power of the rest of the foreign aid system (Respondent 2 3 June 2010). The ability of foreign aid actors to promote their individual agendas has decreased, though their role as providers of technical assistance is a more important one than ever (Respondent 2 3 June 2010, Respondent 5 7 June 2010, Respondent 20 8 July 2010).

Despite the decrease in system wide power, and the increase in importance of key organizations, there still exists lack of harmonization between foreign aid actors. Because there are powerful foreign aid actors who are not involved in the Global Fund process (like the World Bank, AusAID, Family Health International), there still exists duplication of work, an excess of paperwork and frustration from those within local systems about the lack of understanding from foreign actors (Respondent 1 3 June 2010, Respondent 10 17 June 2010, Respondent 17 28 June 2010). Because the agendas of these foreign aid actors are decided within other nested sets far away from Thailand, the ability of the Global Fund process within Thailand to change all foreign aid organizational behavior is limited.

Though this project does not focus on the Global Fund process in Switzerland, this process has resulted in changes within the foreign aid system as well. Over time, there is a trend

to funnel more bilateral health aid for these diseases through the Global Fund (McCoy et al. 2009). In addition, funding for health has increased dramatically, with the number of actors involved also increasing (McCoy et al. 2009). Though not all attributable to the Global Fund, the Global Fund, with its large amounts of funding (over $22 billion to date (The Global Fund 2011c) and focus on three diseases has had a profound effect on the ways in which foreign is delivered in the public health sector.

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6.0 IMPLEMENTATION IN THE GLOBAL FUND PROCESS

Since its inception in 2001, the Global Fund has funded 16 grants in Thailand, with 11 currently in progress (2 malaria, 3 TB and 6 AIDS), and disbursed $252 million dollars, with over 75% of that going towards AIDS programming. Though AIDS dominates in terms of funding, the dedicated funding the Global Fund brings to TB and malaria prevention, care and treatment is much more than in the past and has resulted in 42,000 new smear-positive TB cases detected and treated and 680,000 malaria nets distributed in Thailand (The Global Fund 2011). Funding is distributed to principal recipients within Thailand (usually the Ministry of Public Health), who interact with sub-recipients to implement programs. These sub-recipients often oversee 'sub sub-recipients' that work with beneficiaries on the ground to deliver services. The aim of the Global Fund is to fund proposals that fill the gaps in existing services and strengthen the system as a whole. Through the implementation of these grants, organizations interact to exchange resources and share information and knowledge, interactions that inform future implementation attempts. Though relationships between organizations are affected by the fact that power within this network is unevenly distributed, these interactions result in changing relationships and changing roles of the organizations involved, ultimately resulting in a changing power structure. The interactions within the networks created by the Global Fund process leads to changes within the public health and foreign aid systems in Thailand.

6.1 STRUCTURE OF THE NETWORK

The implementation network within the Global Fund process is much denser than the pre-Global Fund implementation network (Figure 16). This is primarily a result of working within a regimented process where organizations interact at trainings and share their results by submitting reports as per the regulations of the Global Fund. Prior to the Global Fund these organizations had a variety of funders and worked on many different types of programs, often not interacting with others who were implementing similar programs in Thailand. Foreign aid monies came from a variety of sources and created a sparsely connected network of organizations. However, the introduction of the Global Fund programs ensured these organizations would interact in planning programs, in implementation, at meetings to discuss results and meetings to provide trainings on Global Fund procedures and policies.

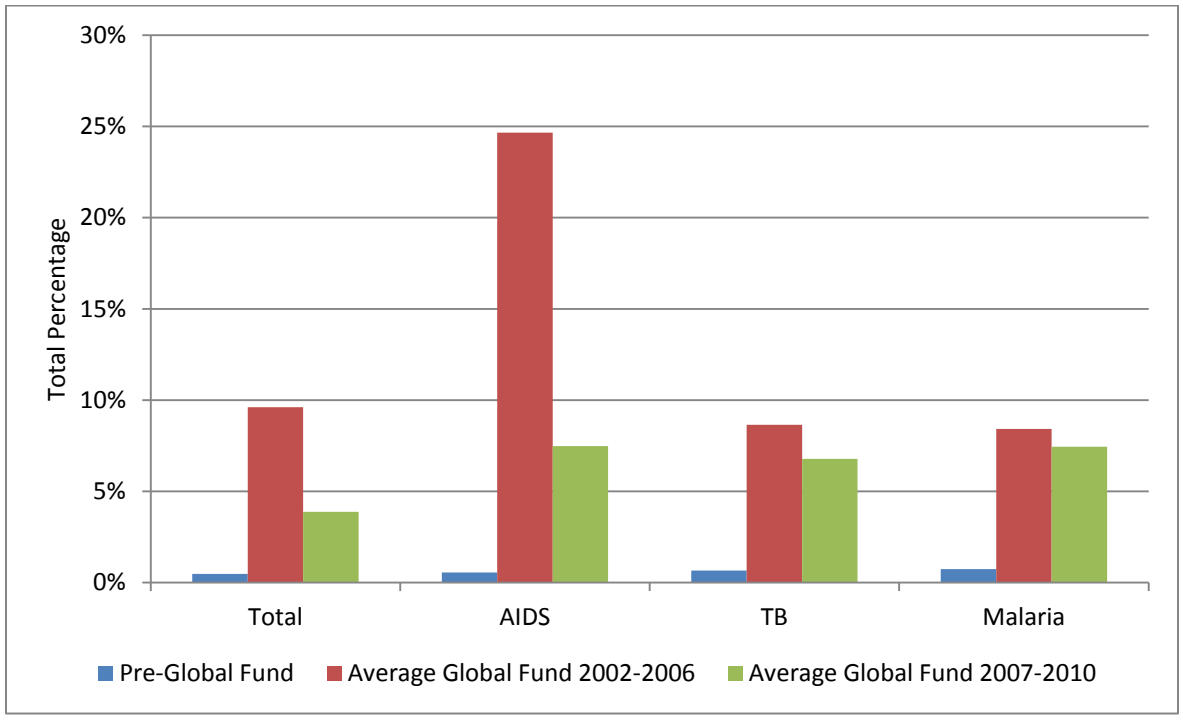

Figure 16: Average Organizational Density by Time Period and Disease

6.1.1 Total Density by Time Period and Disease

Organizational density rose within the implementation network with the introduction of the Global Fund, though has fallen since round 7 in all networks (Figure 16). This is primarily a result of an increase in complexity in the programs being planned, who they serve and where they operate. It is more difficult (and not as necessary) for organizations that are geographically segregated to regularly interact and coordinate activities. The geographic scope of programs in the most recent rounds, particularly in TB and malaria programs, expanded previous programs nationwide. This results in new and different organizations entering into the networks, organizations that tend to be geographically isolated and not well connected to Bangkok. This decrease in density, coupled with the inclusion of a greater variety of local organizations, is an indication that the network is becoming more decentralized. However, this decentralization makes it much more difficult for those organizations implementing the programs to exercise power over the planning of current and future policies and programs.

The average total organizational centrality in the early rounds of the Global Fund in Thailand was about 10%, falling by more than half that between rounds 7 and 10. Despite a network with higher density, prior to round 7 the Global Fund process in Thailand was relatively flexible (Respondent 17 29 June 2010, Respondent 21 8 July 2010) but new regulations and requirements have made the process much more rigid. These new regulations are reflected within the network in the increasing centrality of KPMG and the Global Fund as an actor within all networks.[5] KPMG monitors and evaluates the programs and is becoming more central over time, while the actors within the Global Fund are more active on the ground, regularly attending

[5] In the first round, both KPMG and the Global Fund have a total degree centrality score of 0.007. In Round 10 (the most recent round), KPMG's centrality was 0.12, and the Global Fund's was 0.08.

meetings and trainings. The decrease in density within these networks since 2007 is a result of decentralization, with power more disbursed throughout the network, as displayed in the average decrease in connections to key stakeholders[6]. Those implementing these programs are far from Bangkok and have little influence over policy and program planning. This, coupled with the increase in density of certain organizations that result from new Global Fund rules, make the process more rigid, with power resting in program planners rather than those implementing the programs (Respondent 1 3 June 2010, Respondent 17 29 June 2010, Respondent 20 8 July 2010). Organizations have less ability to change activities and reallocate funds based on the reality on the ground than in the past, making the programs less effective and responsive to community needs.

The AIDS network in the early rounds of the Global Fund had the highest density, though it has declined in recent rounds as a result of program focus on a most at-risk and vulnerable populations. In round 8 the AIDS program focus was MARPs (most at-risk populations), who include sex workers, migrants, men who have sex with men, and drug users. Organizations form communities around the populations they serve but do not work with those outside their communities. The decrease in density within the AIDS network is a result of program focus on specific, marginalized groups, of the formation of communities within the network structure (Appendix G) and of the increase in program activities enacted at the village level. The round 10 AIDS program works with local *tambon* administrative organizations in 29 provinces, organizations not well connected to the rest of the network. A *tambon* is a local government unit in Thailand below that the district level. These three factors help explain the decrease in density in the AIDS network in recent years.

[6] Average eigenvector centrality for implementing organizations was of 0.19 between rounds 1-6 and was 0.08 between rounds 7-10

TB differs from the other two diseases in a variety of ways, including who is affected by the disease, who treats it, and who is in charge of the national program. There is confusion among key stakeholders in the TB network of who is ultimately in charge of the National TB program, vacillating between the Department of Disease Control, the Bureau of TB, or even the regional offices of disease control and prevention. From 2002-2006, the TB network is relatively sparsely connected with no discernible community groups (Appendix G). Key organizational stakeholders felt that, "with the national TB program especially, usually somebody has to head the overall program but nobody is owning up to that. Meaning that the Department of Disease Control is overseeing the funding but the Bureau of TB is supposed to head it, but they are not saying that they are the head. So it is like, nobody is leading, so it is difficult" (Respondent 17 29 June 2010). The lack of a leader within the TB network results in a wide variety of activities and goals in the programs (e.g. Round 6 creates hospital networks, provides care and treatment for migrants and hill tribes, creates a national TB laboratory, etc.), making this network sparsely connected. Interactions between these different types of organizations could improve the functioning of the network and a clear leader who is in charge of the overall policy and programs of these diseases could improve program effectiveness.

Like the TB network, the malaria network is relatively unconnected, though for different reasons. The malaria programs focus almost exclusively on creating village level capacity to prevent, care and treat malaria by training local people. These localized programs do not share information or communicate with other villages, resulting in fewer interactions between implementing organizations. However, in recent years, the malaria network relative to the other diseases is the most connected, primarily a result of an increase in Bangkok based nonprofit and international organizational participation within the network.

6.1.1.1 The Effect of the Changing Process on Implementation

Prior to round 7, because of the proposal requirements, there was flexibility for organizations once they received Global Fund monies, where they could reallocate monies from one task to another based on need (Respondent 1 3 June 2010, Respondent 17 29 June 2010, Respondent 20 8 July 2010). However, changes in Global Fund rules and regulations since round 7 resulted in a more inflexible process. "The process for (proposal) approval takes quite a long time so by the time it is approved, (implementing organizations) can't really do anything about it because the money is already accounted for" (Respondent 17 29 June 2010). In addition, "the process is restrictive and rigid and there is lots of paper" (Respondent 18 7 July 2010).

Positive aspects of the Global Fund process include longer grant cycles. Prior to the Global Fund, grants were typically funded for 1-2 years, while the Global Fund funds for five years, allowing planners to create a longer term focus for programs. However, the Global Fund's performance based funding means that grant performance is examined after two years, and allows the Global Fund to decrease or eliminate the funding based on how well the grant performed. In Thailand, funded grants have been funded for all five years, with the exception of the first AIDS grant which was extended for an additional three years (totaling 8 years of funding). Overall, Thai programs have performed well and have mostly received ratings of adequate or above (Grant performance is discussed in more detail in section 6.3).

6.1.2 Network Trends over time

Figure 17: Implementation Network Centrality Over Time

The average organizational density over the Global Fund period is 0.07, which means 7% of all the possible connections are made within this implementation network. Density increased until 2006, when it fell, mostly due to an increase in types of projects being implemented and the variety of activities involved within these projects (Figure 17). For example, the round 8 AIDS project focused on prevention in vulnerable groups, identified as sex workers, men who have sex with men, intravenous drug users and migrants. Though there is some overlap between these groups, for the most part the organizations implementing these projects were not implementing

their programs together given the different populations they were serving, resulting in a less dense network than in the early Global Fund rounds.

The eigenvector centrality of this network follows a similar pattern to total density (average for the Global Fund period is 0.09) (Figure 17). Those organizations that are interacting with this network are interacting with key organizations. Because implementation tends to be highly local, there are few key national implementing organizations. The trend of increasing centralities in the early rounds of the Global Fund and decreasing since round 6 mirror the activities within the network, where early rounds focused on certain geographic areas and populations and more recent rounds have focused on building local capacity nationwide. This is displayed in the decreasing centrality of organizations, which can be necessary to implement programs but causes problems when trying to advocate for change or have a voice in the planning process.

6.2 PROGRAM SUBSTANCE OVER TIME

In order to achieve their goals, the Global Fund program activities in Thailand fall into seven categories – 1) care and treatment, 2) creation and enhancement of social capital, 3) creation and improvement of infrastructure, 4) education and training, 5) monitoring and evaluation, 6) building organizational and community capacity, and 7) information gathering, sharing and dissemination (CCM Thailand *various years*). Education and training and building organizational and community capacity have been activities in all seven rounds of funding in Thailand. The creation and improvement of infrastructure was an activity in rounds 2 and 3 but not since, whereas the creation and improvement of social capital is the makes up over 30% of

the activities planned in round 10. This indicates a shift in priorities from building physical capital to enhancing relationships and using peer groups and communities to help deliver programs. For example, the round 10 malaria program trains migrant health workers to work within their communities and to be liaisons between the migrant community and the organizations providing them with services.

Trainings are a key activity throughout all the grants, particularly training of hospital workers and local village health liaisons. Because of the indicators the Global Fund chooses to measure, it is difficult to determine if these trainings make a difference in service implementation. Nonetheless, training, education and capacity building have been key activities in all rounds of funding proposals, focusing on improving human capacity throughout the entire public health system.

Activities that create and improve social capital and those that provide education and training have increased over time. Also increasing are activities that build capacity and assist in information sharing (CCM Thailand *various years*). The increase in activities that focus on strengthening the system rather than solely treating the diseases is an adaptation that reflects the needs of Thailand as well as the changing priorities of the Global Fund. Since 2008, the Global Fund has instituted a National Strategy Application funding approach that seeks to create a more holistic approach that ties the different rounds of programs together rather than focusing on each round separately. This approach is reflected in the changing activities in the Thai programs, where more focus is paid to strengthening the overall system through training implementing organizations, creating social capital at the local level and creating information sharing technology systems to improve organizational communication.

6.2.1 Activity Differences by Disease

Activities differ by disease, with malaria programs the only ones that provide care and treatment services and the only ones that do not have monitoring and evaluation activities directly built into the programs. TB program activities focus primarily on building the capacity of organizations, of communities and of treatment facilities to prevent, care and treat tuberculosis. To this end, they focus on creating networks of organizations to share information and perform research on what is and what is not working. In contrast, AIDS programs focus on education and training within particular communities and on building capacity within social groups, such as migrant communities, sex workers and drug users (CCM Thailand *various years*).

The changing activities and trends in program focus result from the interactions between organizations within the implementation network. In addition, the different activities help explain network phenomena. The malaria network is predominantly composed of public organizations, mostly local government health offices that enact care and treatment programs. In contrast, the increase in local nonprofit participation in the TB network, the incorporation of private organizations connected to key organizations, and the decrease in network density between 2007 and 2010 (resulting in part from the incorporation of new organizations into the network) are direct reflections of the increase in interactions between organizations of different types to exchange information and improve the country wide national plan. Finally, the structure and organizational make-up of the AIDS network has changed since the pre-Global Fund period, with a relatively even split between types of organizations involved (public, local nonprofit and international organizations) and their connections to key organizations (Appendix H, Organization by Network, H.3 Implementation and Appendix J, Eigenvector Centrality, J.2 Implementation). The changing structure of the implementation network reflects the activities

being performed and the focus of the programs. Outcomes of the programs influence the ways in which organizations within these networks interact, changing relationships and resulting in adaptation of the network structure.

6.3 PROGRAM BENEFITS OVER TIME

There are 11 grants currently in progress in Thailand (2 malaria, 3 TB and 6 AIDS), with 16 grants awarded in all (3 malaria, 5 TB and 8 AIDS), totaling $416 million in approved funding (with $252 million dollars dispersed). Most of the funding goes to AIDS programming, though malaria funding is the largest percentage of the most recent round. The outcomes and benefits of these programs are numerous, including 42,000 new smear-positive TB cases detected and treated, 680,000 malaria nets distributed, and 7,000 people currently on ART (The Global Fund 2011). These programs have reached communities that had been ignored, and sometimes persecuted, by the Thai government in the past and have tried to strengthen the system by improving organizational capacity, creating networks to share information and providing time and funding to research these marginalized groups. However, the focus of the Global Fund on performance based funding, accountability and transparency sometimes blinds it to the realities on the ground, with the indicators collected by those implementing the programs dictated by the Global Fund and reflecting outputs rather than outcomes or impacts.

6.3.1 Benefits of the Programs

One of the top priorities of the Global Fund is to have transparent programs that show results. Their funding is predicated on performance and, though grants are five years in length, after two years there is a substantive review and the Global Fund can decrease or eliminate funding if the implementing organizations are not reaching their goals. The Global Fund, which has no in-country presence, sends the local fund agent (usually a large auditing firm – in Thailand's case KPMG) to check in on the principal recipient and sub-recipients on a quarterly basis. Using this data, they determine a rating (listed in Figure 18) that then determines the amount of funding the organizations will receive after their two year review. The ratings of individual proposals and the organizations involved in those proposals are used in future rounds of funding to determine the capacity of the key organizations in the proposal.

Grants are measured and rated against country-owned targets at each periodic disbursement of funds (every 3, 6, or 12 months). The grants are rated according to the table below:	
A1	Exceeds expectations
A2	Meets expectations
B1	Adequate
B2	Inadequate but potential demonstrated
C	Unacceptable

Figure 18: Global Fund Program Rating System

6.3.2 Thailand Grant Performance Ratings

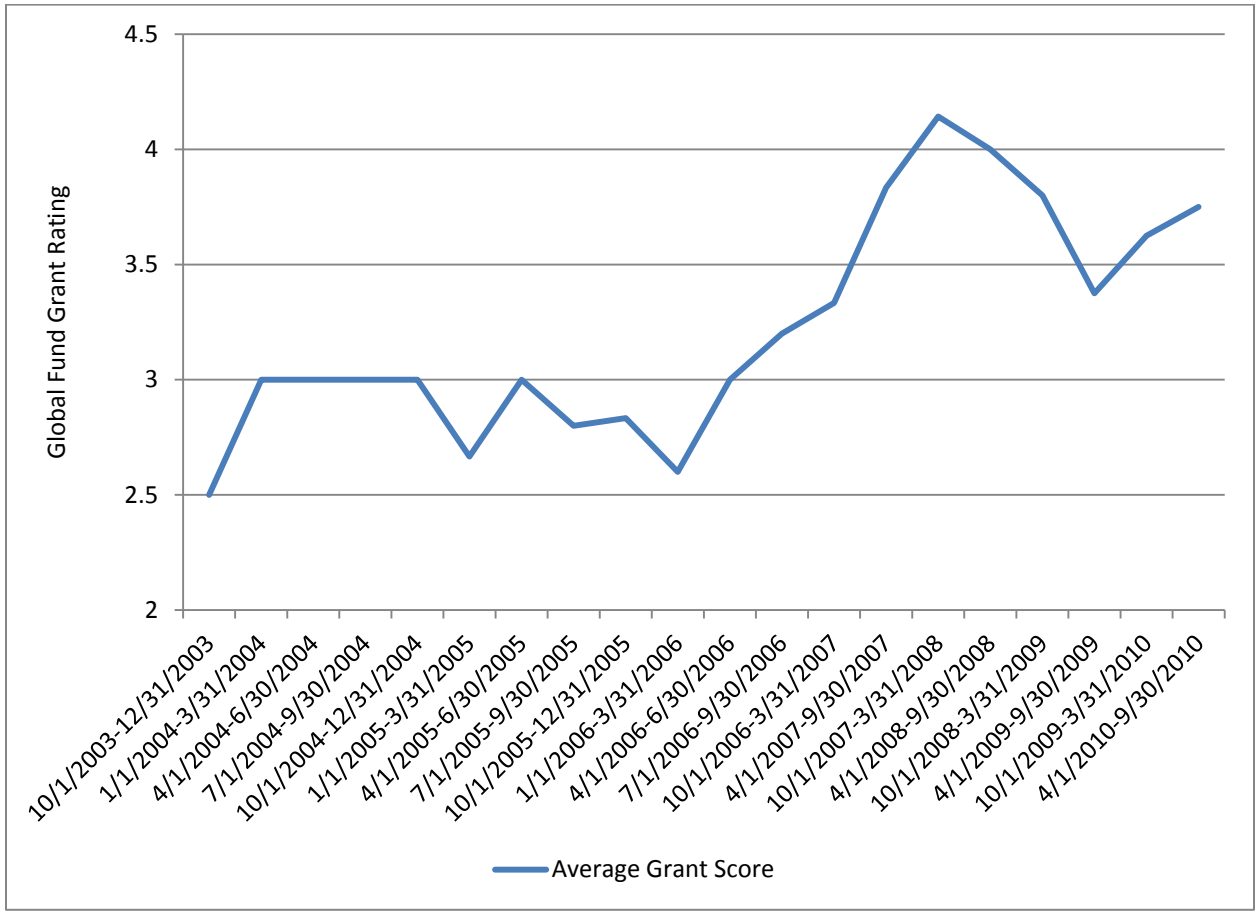

Figure 19: Average Grant Score over time (All Diseases)

*A1=5, A2=4, B1=3, B2=2, C=1

When examining how the Global Fund programs in Thailand performed (using the Global Fund's rating system), Figure 19 shows that early programs were deemed adequate but improved between 2006 and 2008 to meet expectations. There was a decline in performance in 2009, primarily as a result of the Round 8 AIDS programs that dealt with most at-risk populations and Round 7 malaria programs that experienced delays in procuring necessary materials. In the AIDS programs, access to vulnerable groups posed a problem, particularly intravenous drug users, and gaining their trust to deliver services was an issue, resulting in organizations inability

to provide services and failure in meeting Global Fund targets. With malaria, they were unable to meet targets for distribution of long lasting insecticidal nets because there were delays in getting them from the World Health Organization. Both issues show the danger in basing funding decisions solely on numbers and single metrics without understanding the context in which the organizations are working. Nonetheless, the increasingly positive outcomes of the programs since 2006 affect the interactions between organizations involved in this process, which in turn feeds back into the proposal development and program implementation process in the form of more trust and more positive interactions over time (Ostrom 2005).

6.3.2.1 Monitoring and Evaluation Requirements

Though key stakeholders recognized the importance of showing the results of their programs, they had some serious issues with the Global Fund monitoring and evaluation process, particularly with what they believed was an excess of paperwork, inappropriate metrics and measures, and a process that decreased their ability to provide services. The Global Fund requires quarterly reports from each of their principal recipients, who compile the information from their sub-recipient's quarterly reports. These reports require data collection, writing and formatting that is time consuming and takes time away from service delivery. In addition, implementers compile the data as per Global Fund instructions, but do not know what the Global Fund uses it for, nor do they use it to improve their programs (Respondent 4 3 June 2010, Respondent 6 8 June 2010, Respondent 10 17 June 2010, Respondent 21 8 July 2010). They collect data and report results only to receive a good Global Fund performance rating rather than to improve their own programs. The lack of interaction between organizations based in Thailand and the Global Fund in Geneva, particularly the lack of information and knowledge exchange from Thai organizations to the Global Fund, yields distrust.

Program goals are specified in the proposals, though the metrics to measure these goals are highly influenced, if not directly given, by the Global Fund (Respondent 4 3 June 2010, Respondent 10 17 June 2010, Respondent 11 17 June 2010, Respondent 15 22 June 2010). According to key stakeholders in Thailand, the Global Fund's focus on numbers meant that "there is no room to report on the really amazing things. There is no where to put them on the chart, really good things that happen, you can't put it on" (Respondent 19 7 July 2010). The focus on numbers and the process of collecting data can decrease an organization's ability to provide services and can miss the complexities that organizations deal with when working with these vulnerable populations (Respondent 18 7 July 2010, Respondent 19 7 July 2010, Respondent 21 9 July 2010). An organization working with sex workers claimed that, in the past, they allowed sex workers to anonymously take any condoms they needed, recording the total number of condoms distributed per month. The Global Fund requires that they record the number of condoms each sex worker takes, decreasing their condom distribution because of the time it takes to record that information and because some sex workers are uncomfortable allowing others to know how many condoms they need. The Global Fund focus on certain indicators does not take these issues into consideration nor do they communicate with the implementers to discuss whether the indicators are appropriate. This lack of positive interaction leads to an increasingly distrustful environment between those organizations working in Thailand and the Global Fund in Geneva, as indicated by the feeling that the process is becoming more inflexible over time and a feeling that country level ownership is decreasing as a result (Respondent 17 29 June 2010, Respondent 21 8 July 2010).

Collecting the data on these programs is time consuming and the burden is on those actually performing the services. The organizations with the smallest personnel, managerial and

technical capacity are usually the ones that have to collect the data. Given their sizes and expertise, these organizations hold a disproportionate share of the work burden, affecting their ability to actually deliver services, which is their main purpose within the process. Their lack of power within the planning network, and lack of interaction between them and key organizations, leads some to feel that the amount of work compared to the size of the grants is not worth the effort and they would decline future Global Fund funding (Respondent 10 17 June 2010, Respondent 11 17 June 2010).

The types of data collected is determined by the Global Fund, not used by the organizations to improve programs, and is usually output data, not outcome data. Output data counts whereas outcome data measures the changes which are occurring. Outcome data is more difficult to collect because is usually requires following beneficiaries after they receive a service to determine what the service has changed in their behaviors and lives. Nonetheless, output data, which is what the Global Fund programs in Thailand collect (e.g. Number of tests performed, Number of attendees, etc.), does not tell much about the success or failure of the programs.

The Global Fund does not have an in-country presence so relies on their local fund agents to monitor and evaluate the performance of their recipients. In Thailand, the local fund agent is KPMG, who regularly visits both the principal recipient and sub-recipient offices. However, unlike those implementing the programs, KPMG is not transparent in the way in which they collect data or in what is included in their reports, leading to distrust of them among implementing organizations (Respondent 1 3 June 2010, Respondent 5 7 June 2010, Respondent 17 29 June 2010, Respondent 20 8 July 2010). The process in which they collect data from the implementers and the way it is reported to the Global Fund is couched in mystery for those organizations implementing the programs in Thailand and for researchers studying the process.

In addition, because KPMG is an auditing firm, they are not experts in public health or any of these diseases, failing to understand the obstacles many of these organizations encounter when trying to deliver services. Unlike the rest of the network, KPMG actors are not consistent over time, with new personnel auditing the programs every 6 months (Respondent 17 29 June 2010. The interactions among implementing organizations and new KPMG agents, who often lack expertise and experience, result in an environment that inhibits learning over time.

6.4 RELATIONSHIPS AND ROLES OF ORGANIZATIONS

Like the planning networks, the implementation networks are composed of a variety of different types of organizations, with the networks mostly becoming more diverse as time progresses. However, public institutions dominated the implementation networks prior to the Global Fund, and continue to make up a majority of organizations within all except the AIDS network. Unlike the planning process, these public institutions are local government offices which are highly segregated and have limited interaction, resulting in little knowledge exchange between them. Those with the most power and influence in this network are centrally based, with limited opportunities for those not in Bangkok to play a substantive role in this network. The average eigenvector centrality for principal recipients, all of whom are located in Bangkok or close to Bangkok, is about 0.65 as compared to the average of the rest of the network which is below 0.10. The lack of interactions between rural implementing organizations and principal recipients leads to those implementing the programs unable to provide their knowledge and input into program design that they have gained from experience.

6.4.1 Types of Organizations and their Roles within the Process

The Ministry of Public Health is the principal recipient for the majority of the Global Fund programs and receives more than 85% of the total funding. Of the seven non-Ministry of Public Health principal recipients, five of them are for AIDS programs and two for TB programs. Until the most recent round of AIDS program when a local foundation was nominated and accepted as principal recipient all principal recipients have been international organizations. Malaria programs have never had a local civil society or international organization as principal recipient (Figure 20). Principal recipients act as grant administrators and disburse the Global Fund monies to those who will implement (called sub-recipients).

Over 27% of the sub-recipients and 15% of the sub sub-recipients within the process are from local civil society, while international organizations makeup 30% of sub recipients and less than 5% of sub sub-recipients. International organizations work at the central and regional levels, but are rarely the organizations implementing the programs on the ground. Public organizations make up the majority of implementing organizations, with over 75% of sub sub-recipients, composed of mainly provincial and district level government organizations and, as a sector, are the least connected to key organizations (Appendix J Eigenvector Centrality, J.2 Implementation).

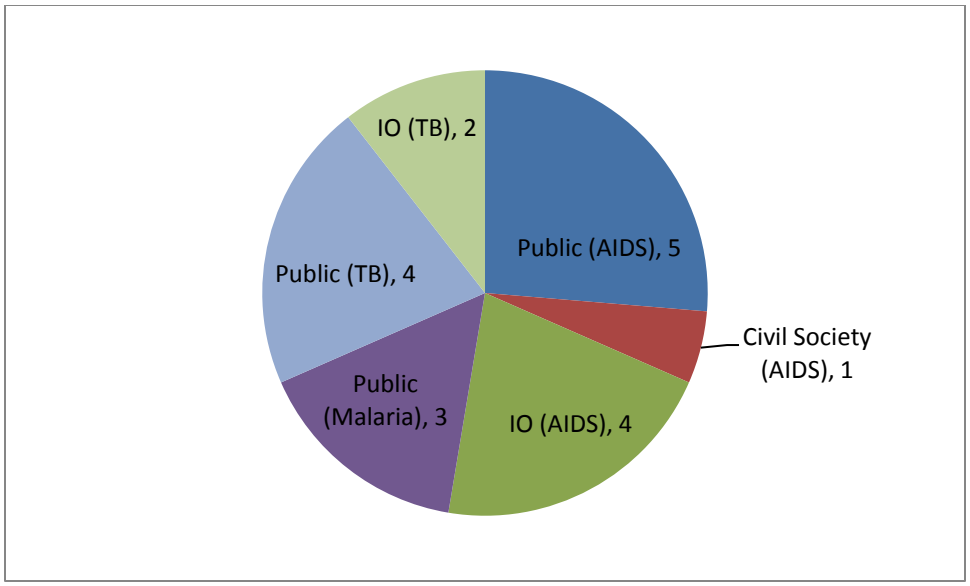

Figure 20: Principal Recipients by Disease and Sector

Grants differ by disease and round, but for the most part, sub-recipients are the implementing organizations whereas principal recipients are the grant administrators. The sub-recipients oversee sub sub-recipients (SSRs) that work on the ground. These SSRs are usually local organizations like provincial health offices or small local nonprofits, and rarely interact with SSRs not in their immediate geographic areas, nor do they interact with principal recipients, located in Bangkok. There are also organizations within the implementation network that provide technical assistance. This assistance takes three different forms – implementation assistance, such as local governments supporting local nonprofit organizations to reach minority groups, research and monitoring and evaluation assistance, and curricula development assistance. Technical assistance for research, monitoring and evaluation and curricula development is primarily provided by international organizations while Thai public organizations provide implementation assistance.

Unlike the planning network, the implementation network pre-Global Fund is almost entirely dominated by public institutions that are not connected to key organizations (Appendix

H, Organizations by Network, Appendix J, Eigenvector Centrality). All disease implementation networks see a greater variety of organizations with the Global Fund process, including an almost six fold increase in local nonprofit participation and doubling of international organizational participation between the pre-Global Fund network and the Global Fund total network for all diseases (Appendix H, Organization by Network, H.3 Implementation). In addition, on average, all organizations are becoming more connected to other connected organizations throughout the Global Fund process. This increase is a result of the types of programs being implemented, including programs designed to assist marginalized populations. Local nonprofit and international organizations are often in the best position to provide these services, having previously assisted these populations and having connections within these communities.

The AIDS implementation network illustrates this change, where 84% of organizations in the pre-Global Fund network were public, while less than 39% were public in the Global Fund era (Appendix H, Organization by Network, H.3 Implementation). The focus of AIDS programs on migrant workers, on vulnerable populations and on people living with the disease helps explain this phenomenon. However, public organizations constituted almost 70% of the all organizations in the most recent round of AIDS programming, reflecting a change in program priority from marginalized populations to system strengthening. It remains to be seen whether this trend will continue, though key stakeholders within the process felt it would, especially given the changing focus of the Global Fund in Switzerland from filling gaps to creating a more holistic approach to disease prevention and control (Respondent 11 17 June 2010, Respondent 20 8 July 2010).

6.5 RESPONSIBILITIES WITHIN THE PROCESS

Within the implementation process of the Global Fund in Thailand, organizations have different roles and responsibilities. The principal recipient acts as administrator of the grant (and sometimes as implementer); they mediate between the Global Fund and their sub-recipients, and report results to the CCM. The sub-recipients are responsible for meeting the program goals and for collecting the data for the indicators (chosen with little input from them), responsibilities often passed on to sub sub-recipients. Finally, the local fund agent (KPMG in Thailand) regularly audits the programs to check data collection and reporting.

The principal recipient signs the contract with the Global Fund making it ultimately responsible for delivering the results promised in the proposals. Of the various actors within this process, the PRs have the most contact with the Global Fund, often attending trainings and conferences to report on results. In addition, they act as intermediaries between the Global Fund and their sub-recipients if there are any issues. They usually wear more than one hat, being responsible for administering the grant and sometimes for implementing at least a piece of it (e.g. PSI operates drop-in centers for IDUs in three provinces) and have, in the past, also sat on the CCM, raising questions of conflicts of interest. Today there is no overlap in actors between the CCM and the implementers, though the actors sitting on the CCM and those running the programs are often employed by the same organizations. These organizations are also represented by actors that sit in the technical committees, and implement the programs, which may result in conflicts of interest and corruption.

Sub-recipients are responsible for tracking the outputs and outcomes of the programs they are implementing. Because they are often small and, at times, local, they lack capacity both in technical and manpower terms to perform this task. The burden of data collection falls on the

smaller, more localized organizations, with some feeling as though, even with the large amounts of money provided by the Global Fund, the work required was not worth the benefits (Respondent 10 17 June 2010). The PR is responsible for training their sub-recipients, but they train them on Global Fund systems, skills that might not be transferable to other aspects of their work.

6.6 GEOGRAPHIC BARRIERS TO PARTICIPATION AND POWER

Though the Global Fund process is supposed to encourage collaboration and exchange of ideas, there is an imbalance of power within the process that results from barriers to participation. There is little interaction between those implementing the programs on the ground and with those designing them, resulting in a lack of input from those organizations that have unique experiences and knowledge to offer. In addition, the implementing organizations have no direct contact with the Global Fund unless they are principal recipients (Respondent 13 22 June 2010, Respondent 14 22 June 2010, Respondent 10 17 June 2010, Respondent 12 21 June 2010).

PRs sign contracts with the Global Fund and, as such, are directly responsible to the Global Fund to meet the goals of the proposals. There are few interactions between the Global Fund in Geneva and the sub-recipients and "according to the contractual agreements it is not advised that (SRs) seek direct contact with the Global Fund. (SRs) contact the PR" (Respondent 15 22 June 2010). The burden of data collection and reporting falls to the SRs who, due to lack of interaction and knowledge exchange between them and the Global Fund, usually have no idea how their reports are used (Respondent 15 22 June 2010, Respondent 18 7 July 2010, Respondent 21 8 July 2010). The Global Fund determines the indicators that they collect, which

shapes the goals of the program. The lack of interaction between those implementing programs on the group and the Global Fund in Geneva leads to a distrustful environment where data collected is not used to improve programs or organizational capacity.

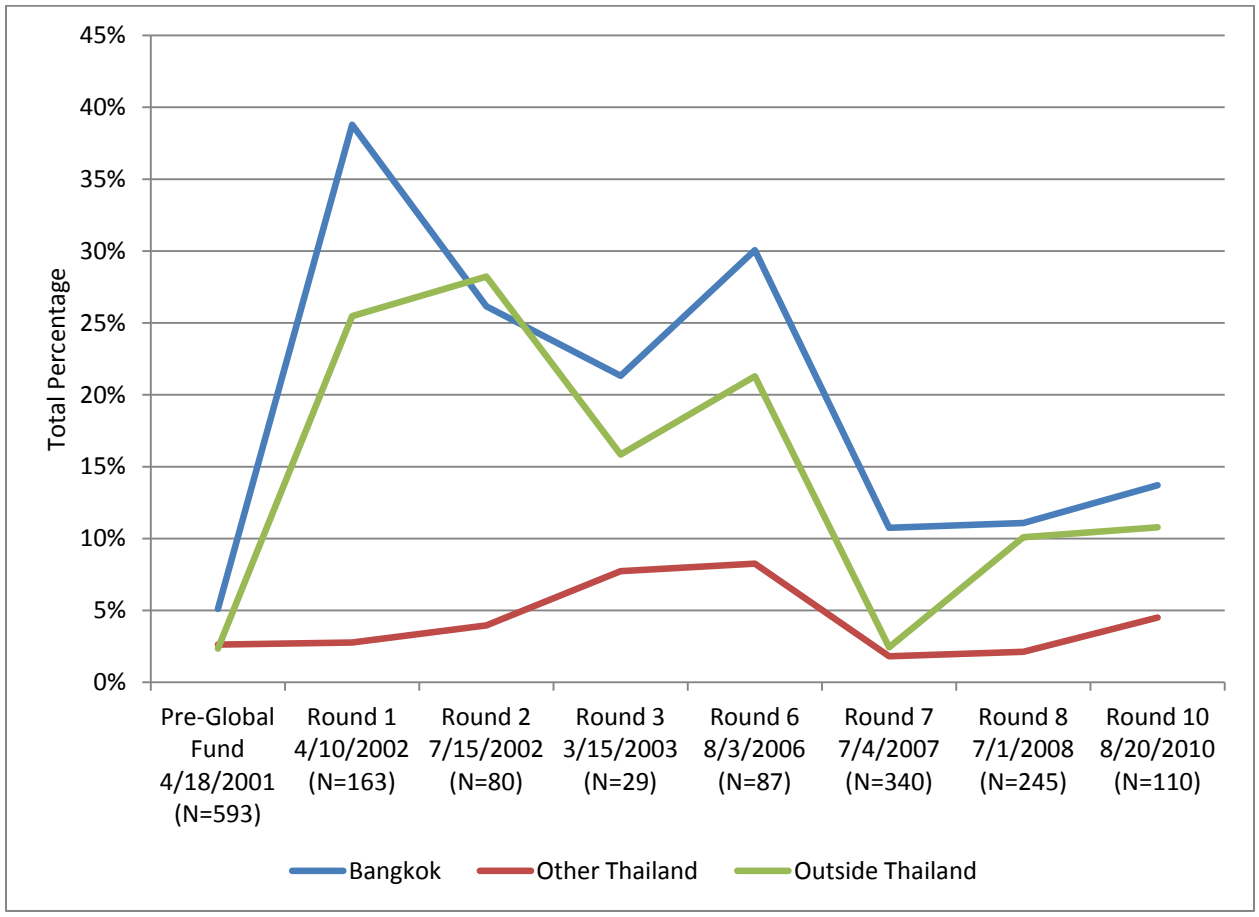

Figure 21: Eigenvector Centrality by Main Office Location

Power within this process is concentrated with Bangkok. "There is a way to add your voice (to the process) provided that you are close enough to be in all these meetings because there is no exclusion. (However) if you are sitting in the northeast, you probably won't be able to participate - there is the distance and you are probably not as familiar with the workings as somebody sitting in Bangkok" (Respondent 20 8 July 2010). Organizations with headquarters located in Thailand but outside of Bangkok have a consistently smaller average eigenvector

score, which measures how connected an organization is to other connected organizations (See Figure 21).

Those organizations operating within Thailand but outside of Bangkok are not well connected, and are not becoming more so over time. However, these organizations are often the ones that best understand the needs of vulnerable populations, as well as implementation issues that might arise in localized areas (e.g. conflicts between police and nonprofits working on migrant issues). The overall eigenvector centralities are decreasing since 2006 (Figure 16) and is reflected in both Bangkok based and internationally based organizational eigenvector centrality decline. Nonetheless, those organizations based in Bangkok are still the most connected to key organizations. Organizations with main offices based outside of Thailand have increased their connectedness to key organizations in the most recent rounds, primarily a result of an increase in international organizations providing technical assistance and performing research within the implementation process.

6.6.1 Organizational Size Barriers to Participation and Power

There are barriers to participation for some types of organizations. At the start of the proposal process the CCM issues a call for proposals for principal recipients. According to Global Fund rules, principal recipients (PR) must have demonstrated experience in working with the proposed populations as well as experience managing similar sized grants. Because of the size of the Global Fund monies, this limits principal recipients to government ministries or very large nonprofit organizations. In addition, the proposed PRs are also the organizations that write the proposals, detailing the beneficiaries, the activities, the ultimate goals and the indicators to be achieved. Smaller implementing organizations have little say in how the programs are designed.

They are chosen by the principal recipient to enact the program with minimal input into the program goals, activities or indicators (Respondent 15 22 June 2010, Respondent 18 7 July 2010, Respondent 21 8 July 2010).

6.6.2 Experience and Skills of the Organizations

Implementing organizations are chosen for their experience working with specific populations, in part because the Global Fund requires this of recipients (Respondent 21 8 July 2010) and in part because many of the proposals work with marginalized populations that few organizations understand. However, both PRs and sub-recipients often lack necessary managerial skills for such large programs. In addition, there can be organizational culture clash between these large, centralized principal recipient organizations and smaller, more localized sub-recipients.

The geographic gap between implementing organizations and principal recipients (based in Bangkok) results in few interactions between these organizations. This leads to distrust and a belief that the PRs do not truly understand what is happening on the ground, inhibiting their ability to properly manage the programs. "You have a PR sitting there too much as an authority with inadequate managerial capacity and inadequate technical skills and operating in a non-transparent manner. So, there you have all the ingredients for things to go wrong" (Respondent 15 22 June 2010). There is perhaps an inevitable feeling of disconnection between central, bureaucratic organizations and local, implementing ones. In addition, particularly among groups working with marginalized populations, there is a feeling that the processes implementers must go through at the bequest of the principal recipients reflect a lack of understanding about the needs of the beneficiaries (Respondent 5 7 June 2010, Respondent 10 17 June 2010, Respondent 15 22 June 2010, Respondent 20 8 July 2010). For example, when giving out condoms to sex

workers, the workers must sign out their name and number of condoms taken on a public sheet, a process many sex workers are uncomfortable doing and therefore take less condoms then they need (Respondent 18 7 July 2010, Respondent 19 7 July 2010).

The sub-recipients have different levels of technical capacity, particularly in data collecting and reporting. The principal recipient runs workshops for their sub-recipients to teach them how report for the Global Fund, but these skills may not transfer to overall learning. In addition, because these programs work with populations that are marginalized and there are few organizations that have any experience with these groups, those that have even a small amount end up working on the programs, though their experience may not be adequate to truly understand these populations. In a broader sense, nonprofit organizations often do not have the skills, resources or ability to provide care and treatment services and therefore must be able to work with government agencies, who have that capacity. Lack of coordination between these groups results in inefficient and inadequate programs for those most vulnerable to all three diseases.

6.7 RELATIONSHIPS BETWEEN IMPLEMENTING ORGANIZATIONS

The implementation of Global Fund grants occurs at the provincial, district and sub-district (*tambon*) levels. As a result of geography and history, there are few interactions between those organizations implementing programs in one area and those implementing in another area. In addition, the lack of interaction between those implementing these programs on the ground results in a lack of a standard operating procedure between them, resulting in confusion and inefficient and ineffective service delivery (Respondent 5 7 June 2010, Respondent 10 17 June

2010, Respondent 15 22 June 2010, Respondent 20 8 July 2010). The failure to have a standard operating procedure among organizations implementing programs within the same grant limits their ability to communicate and share knowledge and results in misunderstandings.

6.7.1 Communities of Implementing Organizations

The Global Fund process changes existing relationships and creates new ones between organizations. Prior to the introduction of the Global Fund, there were many small communities (with 65 different communities, averaging 9 organizational members) (Appendix G for more detail about groups) composed of mostly public organizations that focused on care and treatment and local development, displaying the localized implementation of public health programs in Thailand. Local nonprofit and international organizations were clustered into four groups and the public sector had little interaction with these communities (the other 61 groups were solely public organizations).

The introduction of the Global Fund reduced the numbers of groups and increased the average group size because of the increase in interactions between these organizations. However, there were no discernible communities within the implementation network until round 7, when communities emerged in the malaria network. The emergence of communities focusing on local development emphasizes the decentralization that is occurring, particularly within the public sector.

Over time, interaction between organizations within the Global Fund process has resulted in changes and reformation of communities within this network. The areas of expertise of organizational members within communities have expanded to include in a greater diversity of knowledge. For example, one group in Round 2 was made up of over 80% local public

organizations and over 90% of the organizations were experts in local development, while the other community was composed of over 70% local nonprofit and international organizations that were experts in vulnerable populations. By Rounds 8 and 10, there was no clear majority of expertise, instead having groups with members who are knowledgeable about vulnerable populations and research and local development, which informs programs and improves the effectiveness of implementation. However, these organizations were still geographically segregated and had little communication with organizations outside of their immediate areas.

Within the planning process organizations working on the three different diseases interact and form communities. In the implementation network there is almost complete community segregation by disease. This lack of coordination on the ground between the disease results in redundant programs. In addition, it results in programs that are inefficient, with organizations working in the same geographic areas, often with similar populations (e.g. migrants) are not talking or exchanging information.

6.7.2 Diversification of Knowledge in the AIDS Network

There are differences between the disease networks in terms of groups across time. For those organizations within the AIDS disease network, over time the interaction between organizations results in a diversification of knowledge within the communities. For example, in the early rounds organizations involved were knowledgeable about general AIDS information and about research, but by Round 10, organizations with knowledge of labor, of education, or vulnerable populations, were included in the communities. This diversification is reflected in the types of programs and activities that are being enacted, including education and training programs within the workplace and programs working with migrants and other vulnerable populations. The

changes in communities members, and their areas of expertise, allows them to interact with one another, leading to better implemented programs and greater understanding of the challenges that exist in implementing programs in certain geographic areas and for certain marginalized populations.

6.7.3 Increase in Civil Society Participation in the Malaria Network

Though most organizations working on malaria in the early rounds are public and focused on local development (including pre-Global fund groups), there is a trend to include organizations with a greater variety of knowledge as well as an increase in civil society participation (up to 10% of organizations by Round 10). Prior to the Global Fund's introduction into Thailand there were virtually no local nonprofit organizations in Thailand working on malaria, but this has changed with the Global Fund. In addition, the majority of public organizations that work in malaria are local, provincial health offices and vector borne control units rather than central government groups or international organizations (Appendix I). The increase in implementation of malaria programs by local level organizations and organizations with specialized knowledge results in a better understanding of the needs of those the programs seek to help, but their low social capital (i.e. their eigenvector centrality scores – Appendix J, Eigenvector Centrality, J.2 Implementation) inhibits their ability to effectively influence policy and program creation.

6.7.4 Lack of Leadership within the TB Network

Organizations working on TB programs are grouped in different ways than the other disease prior to the Global Fund. There are no statistically significant communities within the TB

networks and prior to the Global Fund the TB network had almost half the number of communities than existed in the other two disease networks (Appendix G). This lack of network sub-structure illustrates a lack of leadership within the national TB program, with no organizations forming community members to enact programs. In addition, it also reflects the diversity of activities that are occurring within the TB programs, activities that combined do not form a common program goal. This lack of program focus and lack of organizational leadership are reflected in the lack of community formation within the TB network over time.

6.8 ROLE OF INTERNATIONAL ORGANIZATIONS IN IMPLEMENTATION

There are fewer international organizations involved in implementation in the Global Fund process in Thailand than in the planning process (5-10 percent of all organizations versus 15-60 percent in the planning process), but those organizations involved in implementation are much more connected and influential (with a range of 0.13-0.51 eigenvector centralities versus 0.04-0.29 for IO organizations involved in planning). However, in both cases there was an increase in influence between pre-Global Fund levels and the Global Fund process for those IO organizations participating in the Global Fund process (Figure 21 and Chapter 5, Figure 14). This is primarily due to the increase in influence of INGOs, who are the principal recipients in 5 of 18 funded grants (many rounds have multiple grants).

The percent of international organizations remains somewhat constant over time with the exception of round 3 in the Global Fund process when a non-CCM proposal was submitted. Because this proposal had no input from Thai public organizations and the implementation process involved much fewer organizations than the others (29 in total compared to an average

of 170 organizations involved in other rounds), international organizations make up a larger percentage of total organizations (Figure 21). This is an anomaly in the Global Fund process.

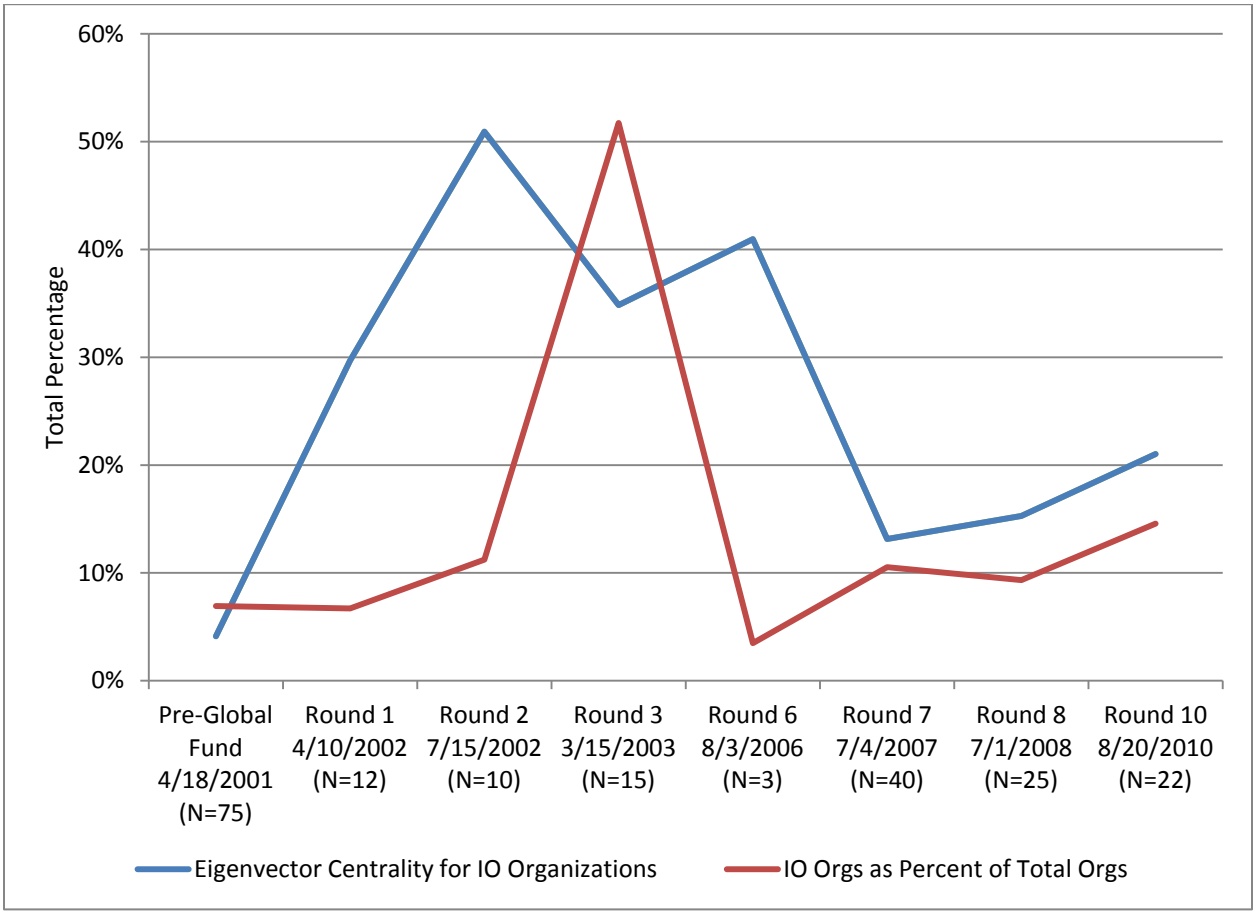

Figure 22: IO Organizations in the Implementation Network N=No. of IOs in that Round

In the early rounds of Global Fund process IOs interacted with other connected and powerful organizations, with average eigenvector centralities between 0.30-0.51, whereas those interactions declined in recent rounds, resulting in a sector that is less influential and powerful. The increase in the early rounds is primarily a result of the steep learning curve that existed with the introduction of this new funding mechanism which required implementing organizations to collect data, work in different ways and with new populations and in different geographic areas. As a result, international organizations provided a greater amount of technical assistance, increasing their connectedness to key organizations within the early rounds of this process.

However, over time, implementing organizations learn how to operate in the Global Fund world and need less assistance from the IOs.

Another reason for the decline in power of international organizations is that they, particularly INGOs, tend to be experts on vulnerable and marginalized populations, while the most recent rounds of funding focus on strengthening existing systems and creating new entities to help disadvantaged people throughout all of Thailand. These changes have resulted in a greater presence of public institutions, particularly local public organizations like the provincial and district health offices, *tambon* administrative organizations and new organizations like the provincial coordinating mechanisms. The provincial coordinating mechanisms are groups created by the Global Fund process that encourages key stakeholders involved in public health in provinces to regularly meet to establish trust, encourage coordination and collaboration and better identify areas which need work. As a result, the power and influence in implementation for international organizations, which pre-Global Fund was relatively low, after a rise in early rounds has decreased to around 0.20.

International organizations occupy different roles within the Global Fund process than they did prior to its introduction in Thailand. Though international organizations dominated the pre-Global Fund planning network in terms of percent of total organizations, they only accounted for about 7% of the implementing organizations. They worked with local nonprofit organization to implement their agendas, but for the most part not as implementing agencies themselves. Interactions with Thai public and local nonprofit organizations within the Global Fund process changed this, with international organizations making up over 15% of the total organizations within the Global Fund process and occupying two unique roles – provision of technical assistance to local nonprofits and as grant managers and administrators. Because international

organization tend to be most knowledgeable about marginalized, minority populations (whereas governments understand the majority), within the Global Fund process they provide technical assistance to sub-recipients in the form of curricula development, information technology training, and provide overall research and monitoring and evaluation services to those implementing programs.

In addition to technical assistance, primarily carried out by multilateral institutions like the United Nation organizations or by bilateral institutions like the U.S. CDC, international organizations manage some of the Global Fund grants. These international organizations are INGOs and serve as principal recipients for all but one of the non-publically run grants in Thailand (CCM Thailand *various years*, The Global Fund *various years*). Unlike some of the local nonprofit organizations, these INGOs have the technical and managerial capabilities to run grants of the Global Fund magnitude and have experience with large grants. In addition, the INGOs are based in Bangkok and have experience working with the Thai government and with the other main planning organizations. The INGOs bring their previous organizational partners into the process as implementing agencies, partners who are usually local nonprofit organizations. However, local organizational power and influence remains relatively low compared to international and public organizations.

6.9 ADAPTATION

Most of the local nonprofit and international organizations involved in the Global Fund process work with similar populations both pre and post Global Fund, though the Global Fund has allowed for program expansion (Respondent 1 3 June 2010, Respondent 6 8 June 2010,

Respondent 19 7 July 2010). One organization spoke about the introduction of The Global Fund to their program, saying:

> (The program) was going before and it will go forever...We got to be VIP for 5 years and then it is over. So we go back to economy class, so it is ok. But during the 5 years we saw a great opportunity to build leaders because the extra resources we had, we could really build up the capacity of our leadership, especially amongst the migrant sex workers (Respondent 19 7 July 2010).

The Global Fund process allows organizations to improve their capacity and the capacity of local populations, resulting in improvement in the public health system as whole. The process fosters geographic expansion as well, allowing some programs like the ones that provided villages with migrant health workers to expand nationwide (Respondent 23 9 July 2010). In addition to the expansion of current programs, the Global Fund process allows for the creation of new programs that work with previously ignored populations, like drug users. This is building up the capacity of those organizations working with these new populations, though there is a steep learning curve and the process is not always smooth.

Table 8: QAP Analysis for Implementation Networks by Funded Round

Round of Global Fund	Correlation – Total Network	Correlation – AIDS	Correlation – Malaria	Correlation – TB
Pre-Global Fund Network	0.02***	0.02***	0.01***	0.03***
Round 2	0.22***	0.28***	---	---
Round 3	0.28***	0.28***	---	---
Round 6	0.13***	---	---	0.16***
Round 7	0.21***	0.20***	0.04***	---
Round 8	0.11***	0.21***	---	0.08***
Round 10	0.18***	0.22***	0.05***	0.17***

Dependent Network is Round 1 of the Global Fund for Total Network, AIDS Network and TB network.
Dependent Network is Round 2 for Malaria Network – Only Funded Rounds displayed
*** Significant at a 1% level

Table 8 displays correlations between organizational networks by funded round, with the dependent network the first round that was funded by the Global Fund in Thailand. For both AIDS and TB that is round 1, while malaria was not funded until round 2. The networks are significantly related to one another, though their correlation remains between 0.1 and 0.2 throughout the rounds. These correlations indicate that the internal characteristics of the networks remained structurally similar, and, unlike the planning network, they remain relatively constant over time. The implementation network is slower than the planning network to structurally change. Adaptation is more geographically and culturally inhibited in the implementation network, where organizations are spread out throughout the country and are dealing with locally specific issues that might not translate to other areas of the country.

6.9.1 Changing the Public Health Implementation System

Despite slower structural adaptation in the implementation network, there is evidence that interaction between organizations within this network is improving the public health system as a whole. In every round of funding, trainings, education and social capital creation are central activities. This process has formed organizational communities in recent rounds that consist of a diverse set of organizations that possess different areas of expertise and specialties. This is improving implementation at a local level, though there still remains geographic segregation in information and knowledge exchange. In addition, those that are not located in Bangkok have little power and influence over the planning process, though they possess exclusive knowledge as local implementers.

6.9.2 Changing the Foreign Aid System in Thailand

The foreign aid system in Thailand is adapting as a result of the Global Fund process as well. As a group of organizations, the increase in their power and influence between the pre-Global Fund and Global Fund process results in a greater ability to influence policies, agendas and implementation practices within the process. However, their power to create their own agendas and the influence they have as separate entities (rather than as nodes within the Global Fund process) has decreased. Because of the size of the Global Fund grants, their influence through other forms of aid has diminished. They play two main types of roles in the Global Fund process, assisting implementing organizations in creating curricula, monitoring and evaluation and providing research for the planning organizations. In addition, they also serve as grant administrators, working both with previous implementing partners and with new ones.

The Global Fund aims to increase harmonization among international donors by trying to funnel much of the previous international funding for these three diseases through the Global Fund. In some ways this is a success, with much of the EU's health aid now being given to the Global Fund rather than directly to countries. However, there is still an issue of harmonization of procedures and reporting on the ground. Many organizations implementing Global Fund programs receive funding from a variety of sources, with each requiring a different reporting mechanism. Even more complex are those INGOs who have offices in Bangkok but are subsidiaries of larger international organizations. They are involved as principal and sub-recipients, but still must report back to their home organizations in formats that often do not match the Global Fund format and sometimes are in conflict with them (Respondent 4 3 June 2010). This results in extra work for the organizations and in less efficient programs.

Adaptation is occurring within both these systems as a result of the Global Fund process, though there are missing connections between local areas and between the local, implementing organizations and the central, planning ones. Without these linkages, change and adaptation occur more slowly, as evidenced by the constant correlations over time. Nonetheless, this process changed the roles and relationships between organizations and is improving the overall public health system from the ground up.

7.0 CONCLUSION

Foreign aid and public health systems are both complex and adaptive, consisting of a large number of parts that have a variety of different interactions. Understanding and examining them as complex adaptive systems helps to harness that complexity and identify the levers for change. Foreign aid organizations interaction with developing world organizations has been examined at the global level, at the individual donor level, and at the sectoral level (i.e. the interaction between bilateral aid and NGOs), yet never as whole system interactions. Redefining the problem as one of conflicting systems can help lead to better and more effective solutions to developing world problems. Changing the perception of how these systems function and interact with one another can improve foreign aid's efficiency and effectiveness in combating local social and economic problems.

Foreign aid organizations interact (or fail to interact) with local actors in a variety of ways, affecting how their programs are designed and implemented. The Global Fund as a new type of foreign aid seeks to change and improve these interactions, changes that ultimately lead to more and different interactions among organizations within and between local systems and the foreign aid system. If organizations operating within this larger action domain can change and recognize the ways in which they interact, and how those interactions result in changing agendas, programs can be better designed and more effectively implemented. Organizations that understand that they are part of a larger system can affect change that results in more efficient

use of resources, more and better collaborations and greater transfer of knowledge, improving overall program design and implementation.

7.1.1 Resolving the Conflict between Systems

There is a fundamental conflict between foreign aid and local systems, with actors having competing agendas that operate independently of one another and with actors failing to communicate and share knowledge. This poses a problem given the growing understanding that complex problems can only be addressed through collaboration and coordination between differentiated organizations that focus on all aspects of the problem. To address complex global health problems, actors from the foreign aid system, which possesses the resources and technical expertise, and from the local public health system, which is accountable to local populations and best understands their needs, need to collaborate. The Global Fund is a new form of foreign aid addresses the conflict between the systems by creating new structures that allow organizations within both to interact, exchange resources and share knowledge. The interactions among organizations within the Global Fund process ultimately result in changes in relationships between actors within the process as well as within and across both systems.

7.1.2 Redefining the Problem

Elinor Ostrom's institutional analysis and development framework is useful in framing the theoretical problem and helping to answer the question of whether interactions between organizations within the Global Fund result in adaptation within the process and adaptation in the two systems it overlaps. Understanding the Global Fund as an overlapping action arena that

creates situations in which participants interact, leading to outcomes that feed back into the process shapes how this question will be addressed. Network analysis allows the structure of the interactions to be revealed, as well as how that structure changes over time. In addition, the rich qualitative data gathered from key stakeholders in the process help illuminate what that structure means for organizational power and influence and for program design and implementation. This mixed method approach and data analysis process reveals the structural and substantive changes that reveal that adaptation and change are occurring within the public health and foreign aid systems.

Using this framework, the Global Fund process in Thailand can be seen as a bridge between the local Thai public health and the foreign aid action arenas working within Thailand. Organizations interact within this process that, over time, results in adaptation within the process and change in both these systems. Adaptation within the Global Fund process takes the form of the roles in which organizations play, the types of programs that are being planned, the capacity of organizations to implement programs and serve local populations and the relationships between organizations. The structures of the networks, including the individual disease networks and the total network, are adapting to these substantive changes and the substantive changes help facilitate structural change, resulting in system adaptation. The changing relationships between organizations within the Global Fund process, leading to changing program substance, results in improved human, organizational and community capacity within the public health system and changing power dynamics and influence within the international aid system.

This study makes important contributions to the fields of complexity and systems, organizational collaboration and network theory. It examines the Global Fund as a bridging action arena between two systems that creates and enhances relationships between organizations

within and between these systems, helping garner positive adaptation in both. The Global Fund process introduces new participants and creates new and different types of interactions between them, helping to improve program outcomes through the changing of the material conditions of the action arena, the attributes of the community involved, and the rules under which they function.

The results of this study raise theoretical questions relating to the role of organizational composition in leading to positive adaptation within networks, to the patterns of development of networks, to the role of network structure in creating positive adaptation and to the connection between certain types of interactions and certain types of outcomes. In order to address these theoretical questions, future research includes comparisons of regional differences within the Thai case study, extending the study to other Global Fund contexts, and examining different types of overlapping systems to determine if similar results emerge.

7.2 ADAPTATION OF NETWORK STRUCTURE

Prior to the Global Fund, the organizations working on these three diseases in Thailand were not well connected and were fragmented into communities based on areas of work and expertise, with few interactions between these communities. The programs planned were smaller in size and scope, but therefore focused on a wider variety of issues, including programs working solely on research, on advocacy and on monitoring and evaluation. These individual programs were segregated from one another and formed around the agendas of individual donors. Donors were mostly international organizations, whose agendas were based on their own national self-interests, and who did not exchange knowledge or share resources with one another or with the

Thai public sector. The international organizations formed communities around their programs with local nonprofit organizations, with few interactions between these communities.

With the introduction of the Global Fund, organizational density increased in all networks. Increased resource exchange and knowledge transfer interactions occurred between the organizations in the early rounds of planning and implementation. Organizations that planned programs formed a planning body that met at least four times a year (and sometimes as much as 12 times a year), resulting in the creation and expansion of relationships between these groups. In addition, interactions increased between organizations implementing programs in the early rounds of the Global Fund, primarily as a result of the creation of programs that worked with specific populations in a small number of geographic areas. For example, interactions occurred between local hospitals, between nonprofit organizations working with migrant workers, and between local communities as a result of the TB program in the first round that focused on working with poor TB patients in northern Thailand.

Over time, both the planning and implementation networks become less dense and form communities composed of a greater variety of organizational actors. The trend in the planning network is towards more diverse programs, including programs that are planned and implemented with the other nations in Southeast Asia, ones that work with a greater variety of marginalized communities and towards planning programs for all three diseases every round. This diversity leads to unique planning communities, communities that over time consist of a greater variety of organizations with different areas of expertise. This leads to interactions that yield knowledge exchange and lead to the creation of better programs.

The implementation network also experienced a decline in density over time, resulting from a gradual nationwide expansion of programs, programs that are increasingly operated at the

most local level. The most recent round of funding works with *tambon* administrative organizations, which operates at the village level and is the smallest government level in the country. Decentralization resulted in a decrease in overall density within the implementation network, though power still remains concentrated in Bangkok, with those enacting programs having little influence over how they are designed.

The structure of both the planning and implementation networks adapted over time. The pre-Global Fund networks are significantly correlated to the Global Fund networks, though that correlation is small, recognizing that the Global Fund created new relationships, introduced new actors, and altered network structure, though certain internal characteristics remained. Within the planning network, correlation is significant between the overall networks by round, though the degree to which the networks are correlated is decreasing over time. Some internal characteristics of the networks remained structurally similar, though they are diverging as time goes on. After further analysis, the similarity in structure in the early rounds is primarily a result of the country coordinating mechanism, which is composed of basically the same organizations who meet regularly in every round. However, over time the networks become more complex, disrupting these groupings and adding new organizations and ideas into the process and helping to change the internal characteristics of the network.

Adaptation is slower within implementation network than in the planning network. The networks are correlated to one another and that correlation is relatively constant over time, indicating that the internal characteristics of the network structure are remaining relatively constant. Adaptation is more geographically and culturally inhibited within the implementation network, given the inability of organizational members to regularly meet in person, to attend the same trainings and to exchange ideas and results of their programs. The organizations are spread

out throughout the country and are dealing with locally specific issues that might not translate to other areas of the country. Programs are changing, geographical coverage is expanding, and new beneficiaries are being included, yet the implementation network remains relatively sparse and only regionally connected, helping to explain the stable correlations over time.

7.2.1 The Changing Role of Public Organizations

With the introduction of the Global Fund, interactions between organizations within the planning process resulted in the formation of new relationships, changes in existing ones, and shifting roles for the organizations. Public organizations, particularly central government agencies, increased as a percent of total organizations working on these diseases. The variety of public organizations involved in the process increased, with central ministries interacting with one another, more universities involved and an attempt to create more connections to local public organizations. Despite these attempts, power and influence still rests with the Ministry of Public Health, mostly due to the time it takes to work on these proposals and the mandates each organization holds. The organizations with the most interest in the process end up being central within it. Nonetheless, public organizations within Thailand in general are more important to combating these three diseases than in the past, and hold more power within the process. They interact with one another in ways they weren't in the past and are more aware of the cross ministerial issues that surround public health programs. The increase in public organizational participation in these networks, as well as the increase in local nonprofit organizational participation displays an increase in country ownership rather than having an outside entity determine broad agendas and initiatives.

7.2.2 Decentralization to Local Public Organizations

Prior to the Global Fund, local government organizations dominated all three disease networks. Though they remain key actors within the networks, the introduction of the Global Fund enabled a greater variety of organizations to be included in the process, like local nonprofit and international organizations. Overall, these organizations are more connected to one another and more connected to key organizations, though the most recent programs have shown a trend toward extreme decentralization, with little connections between these localities. The results is a less connected network with power disbursed throughout, making it difficult for implementing agencies to affect the process as a whole. Implementing organizations are segregated by geographic area and also by disease, with few organizations working on more than one disease, despite working with very similar populations and the fact that TB and AIDS are co-infectious diseases.

7.2.3 The Increase in Private Participation

Local nonprofit organizations are now more connected to key organizations, allowing their voices to be included in the process, though they have decreased in terms of percent of total organizations involved. Those included are more powerful and connected, particularly to Thai government organizations. The inclusion of these organizations results in some unanticipated consequences, including a decrease in their ability to advocate for change from the outside the process. In the past they were able to protest government policies they deemed inadequate or inappropriate, garnering local and international attention to the issues. With their inclusion into the Global Fund process, because they were working with the government, they can no longer

protest from the outside but work to change from the inside, change that is often slow in coming and change that sometimes needs pressure on the government in order for it to occur.

The inclusion of private, for-profit organizations into both the planning and implementation networks is a new phenomenon with the public health world. These organizations see an increase in terms of percent of total organizations involved and in terms of their connections to key organizations, resulting in an increase in their power as a group to influence policy, program design and implementation. There are prevention programs occurring within the workplace, inclusion of pharmaceutical organizations into the process, and increase in professionalized monitoring and evaluation. Overall, this trend shows an increasing understanding that public health and economic growth are inexorably tied together.

7.2.4 Structural Differences by Disease Networks

Within the planning network, the malaria and AIDs networks follows similar structural patterns, with the Global Fund's introduction resulting in an increase in organizational density, an increase in overall connectedness to key organizations, the emergence of communities and a diversification of the types of organizations involved and their areas of expertise. The TB network develops in different ways, mostly due to the lack of a clear leader within the process. This lack manifests itself through slower adaptation of network structure and slower emergence of communities (which are indicators of network sub-structure). The lack of a clear organizational leader in this process results in the decreased ability of the network to adapt to changing conditions.

The implementation networks are dominated by public institutions prior to the Global Fund, and in the malaria and TB networks throughout the Global Fund process. This overall

network is slower to adapt than the planning one and it takes longer for network sub-structures to develop. The AIDS network is different from the other two in the increase in diversity of organizations that emerges with the Global Fund process. The AIDS network has a larger percentage of local nonprofits and international organizations participating, primarily as a result of the diversity of populations and programs they are implementing. Organizations within this network are also increasingly interacting with key organizations, allowing for organizations working with very different populations to share knowledge and resources, resulting in the increase in social capital. Nonetheless, the social capital within the implementation network still remains less than that within the planning network, implying that face-to-face interactions on a regular basis are key components to improving relationships.

7.3 ADAPTATION OF NETWORK SUBSTANCE

The change in networks structure over time leads to the changes in the substance of the programs planned and how they are implemented. In turn, the outcomes of the programs reshape the structure of the network by encouraging and discouraging certain interactions based on program results. Interactions between organizations increased with the introduction of the Global Fund. Over time, networks changed and adapted, with density decreasing overall as a result of a greater variety of programs. At the same time sub-structures that formed within the network were populated by organizations with a greater variety of areas of expertise and knowledge, organized around program proposals. This diversity in knowledge based helped to improve program design and lead to improved program outcomes and benefits.

Within the planning network, a result of the changing network structure is a shift in large agendas and priorities. In the early Global Fund rounds, programs sought to strengthen pre-existing public health structures and personnel. Over time programs have shifted to fill gaps in public health systems by creating programs around most at-risk and vulnerable populations. In the most recent round the programs seek to create new structures and systems that improve information sharing and harmonization of prevention, care and treatment services through the use of information technology and organizational networks.

Prior to the Global Fund, international organizations operated their own programs with little input from or interaction with local Thai government organizations. The Ministry of Public Health dominated agenda setting, with few interactions with other central government organizations. Few local nonprofit organizations played a central role in this network, though these organizations often possess exclusive knowledge and unique areas of expertise that would inform the planning process. The incorporation of different actors into this process and the interaction between actors with different experiences helps to explain the changing program planning agendas.

The changing planning network helps to explain changing implementation network structure. This changing structure leads to improved outcomes that feed back into the planning process. Early rounds of Global Fund programs in Thailand tended to implement programs focused on certain regions like the border areas or in Bangkok. With the success of some of these programs, they were expanded nationwide. The structural result of the expansion is the decrease in organizational density within the implementation network given the geographic barriers to interaction that exist within a country.

At the same time as programs were being expanded nationwide, the organizational composition of the implementation network was becoming more diverse. Prior to the Global Fund more than 80% of all organizations involved in implementation were local public health offices. The increase in participation by local civil society groups and international organizations leads to changing program activities. These organizational areas of expertise provided trainings for local health personnel, creation of networks of migrants and other vulnerable groups, and creation of community groups to support those affected by these diseases. The substantial change in activities was facilitated by the structural change in the implementation networks, specifically the inclusion of local civil society and international organizational groups.

7.3.1 Substantive Differences by Disease

The adaptation of the structure of these disease networks can be seen in the adaptation of its substance. Prior to the Global Fund, local nonprofits constituted over a quarter of the planning organizations within the AIDS network. However, compared to the other two diseases, local nonprofit organizations within the AIDS network were not well connected to key organizations, working instead on unique, marginalized populations that were not included within the national agenda. The increase in organizational connectedness to key organizations within the AIDS network, as well as the increase in diversity of actors, directly reflects changing program focus, from national programs to focusing on marginalized populations.

The lack of leadership within the TB network was manifested by slow network adaptation and the slow emergence network sub-structures, results in a lack of a cohesive national plan. This is illustrated through the diversity of activities within the TB programs, ranging from the care and treatment of migrant and rural populations to developing a national

monitoring support structure to oversee treatment services for TB to institutionalizing an accreditation mechanism that certifies NGOs and businesses that provide services for TB to empowering non-Thai communities to reduce their TB burden. The diversity of activities, and the broad goals of the TB proposals, results from and results in confusion about whom in charge and what are the ultimate goals of these programs.

7.4 THE ACTION DOMAIN

7.4.1 Effect of the Global Fund on the Foreign Aid Action Arena

The roles that international organizations play within both of these networks changed over time. The adaptation of the Global Fund process results in changes within the larger foreign aid action arena. This is a result of the size of Global Fund grants and the creation of new relationships and roles for international organizations within this process. The size of the Global Fund grants, which far surpasses other foreign aid donor amounts, decreases all international organizational power within the system. In Geneva, the Global Fund process has opened up a dialogue about foreign aid funding, with some purporting to eliminate bilateral funding in favor of new financing mechanism like the Global Fund. The EU is funneling most of their foreign aid for these three diseases through the Global Fund, helping reshape the foreign aid action arena within Thailand and throughout the world.

Within the Global Fund process in Thailand, international organizational roles changed as a result of the increase in country ownership over the programs and as an increase in international organizational provision of technical assistance. Their power within the networks

is decreasing, though their roles and positions as possessors of unique knowledge and occupying key roles is increasing. International organizations have changed from funders and creators of their own agendas, to providers of technical assistance and capacity building to local organizations. As a whole, the shift has been from donor organizations to technical assistance providers, with their power to create and enact their own agendas decreasing but their power to influence policy and programs within the Thai public health system increasing. At the national level, multi-lateral and bilateral international organizations help plan programs and design standard operating procedures, while international nonprofit organizations provide organizational capacity building at the local level, which includes training in information technology, education on best practices and creation of organizational networks.

At the implementation level, their increase in participation results from an increase in their provision of technical assistance, including research, monitoring and evaluation services and curricula development, and in their roles as grant implementers. International organizations did not have a large role in implementation prior to the Global fund, instead relying on local nonprofits to implement their agendas. However, the Global Fund process changed this, with international organizations making up over 15% of the total organizations within the implementation process and occupying two unique roles – provision of technical assistance to local nonprofits and as grant managers and administrators. They help create curricula for programs, provide baseline research and monitor and evaluate the program as it is enacted. In addition, they administer six of the seven non-governmental grants, making up about 14% of the total funding to Thailand. The influence and power of international organizations is declining in the most recent years, primarily a result of the steep learning curve for some organizations, and therefore their need for technical assistance, and the increasing focus of these programs on

system strengthening. International organizations have more expertise and knowledge in working with marginalized populations and so have less to contribute to programs that focus on strengthening the Thai public health system as a whole.

The Global Fund process is changing the roles and power of international organizations within Thailand and its public health arena, but there remain international organizations not participating in this process. These international organizations form their agendas and policies outside of Thailand and therefore the Global Fund process within Thailand has less influence on their actions and interactions. The result is the failure of the international aid system to harmonize their policies and procedures which lead to inefficient programs. One of the rationalizations of the Global Fund as a new funding mechanism is to reduce donor program redundancies and harmonize funding towards larger program agendas and goals. This is occurring when bilateral and multilateral donors are using the Global Fund as the tool to deliver their aid for these three diseases. However, there are foreign aid actors that are operating in Thailand outside of the Global Fund process who are not interacting with organizations within the process, resulting in redundant programs, lack of harmonization of reporting and inefficient programs and policies.

7.4.2 Effect of the Global Fund on the Thai Public Health Action Arena

The Global Fund affects the Thai public health action arena in a variety of ways, including the creation and improvement of relationships between different actors, including interactions between central government ministries, collaborations between the Thai public sector and local civil society groups, and the creation of cross-border program collaborations. These interactions resulted in learning throughout the network that led to substantive policy change. In addition,

the interactions between organizations within the Global Fund process led to programs that created an increase in human, organizational and community capacity within the public health system as a whole. This capacity included an increase in human resource development, particularly with an expansion of information technology skills, and the creation of closer community ties, ultimately improving the overall public health system.

The increase in interactions between public organizations, between public, civil society groups and international organizations also results in better policies throughout the public health system. In addition, in round 7 (and round 10), organizations throughout Southeast Asia collaborated to submit a proposal to the Global Fund. The ability of these countries to collaborate across borders is necessary given the global nature of public health problems. The interactions between these organizations results in an increase in trust and in more effective program planning.

The activities that result from interactions between organizations within this process result in positive adaptation within the entire public health system. The program focus has changed from nationwide system strengthening, which occurred in the early rounds, to working with most at-risk populations in more recent rounds, to the focus on harmonization, including the creation of oversight systems and monitoring and evaluation in the current round. Key components of these programs include trainings, educations and social capital building, resulting in an increase in human capacity, in organizational capacity and in community capacity. The increase in capacity improves the overall public health system by improving the skills of health care workers, improving the social capital within communities, and improving the ability of organizations to manage their programs and effective share information and knowledge with organizations throughout Thailand.

The Global Fund programs have not only improved overall capacity within the public health arena by creating hospital networks, information sharing between research laboratories, and improving organizational capacity through trainings, but they have created programs that serve previous underserved and marginalized populations, ultimately resulting in nationwide debates that created positive policy change. Prior to the Global Fund, the Thai government left service delivery to non-Thai citizens and other marginalized groups like sex workers and men who have sex with men, to local nonprofit and international organizations. The Global Fund process has forced the Thai government, through the CCM, to work with these organizations to create programs for 'most at-risk' populations, a learning process that educates the government on these populations. As a result of this process, the Thai government has revisited its policy on drug users and, together with civil society groups, created a Thai harm reduction policy that seeks to reduce HIV infection rates among drug users. This is a large step for a government that a few years ago instituted the 'clean and seal' campaign to rounded up drug users and placed them in sealed prison camps.

The regular interaction between organizations who worked to help these populations and Thai central ministry officials helped facilitate this policy change. In addition, the fact that the Global Fund refused to fund Thai AIDS proposals that focused on marginalized populations without a focus on drug users also pushed the Thai government to change. After a non-CCM proposal dealing with drug users in round 3, resulting in international shame for the Thai government, and failed CCM AIDs proposals not dealing with drug users in rounds 6 and 7, the Thai government, and the CCM, finally included drug users as at-risk people in the round 8 proposals. This proposal was funded and programs for these populations are currently being enacted. As a result of the interactions within the process, the Thai government, with input from

civil society and international organizations, created a nationwide harm reduction policy that will prevent human rights abuses and provide the necessary care and treatment for drug users throughout Thailand.

The focus of the Global Fund on AIDS, TB and malaria has raised controversy, with some believing that too much emphasis is being placed on these three diseases to the exclusion of other public health problems, while others argue that the amount of money invested will ultimately improve the public health system as a whole. In Thailand, this project found evidence for both arguments. The focus on these three diseases is improving the public health sector as a whole by improving capacity and creating networks of knowledge exchange. In addition, government policies are changing to better address the needs of some of the most marginalized peoples, partly as a result of a better understanding of their plight. Health insurance regulations are currently being changed so that those registered can access health care in institutions not located in the area listed on their residence cards, allowing workers more freedom of movement and a guarantee of universal health care.

Despite the improvement in many aspects of the public health system in Thailand, the focus on these three diseases to the exclusion of everything else shows a lack of understanding about the genesis of these diseases. The reasons behind those populations who engage in at-risk behavior are often based in economic opportunities, or lack thereof. The underlying causes of all three of these diseases, and people's vulnerabilities to them, include poverty and inequality. Without addressing these issues, the diseases are merely being treated, not prevented.

7.5 ADAPTATION OF THE GLOBAL FUND PROCESS

Since its inception in 2001, the Global Fund in Geneva has developed, changed and expanded many rules and regulations. They are in a continual process of learning by receiving regular feedback from those organizations working within their donor countries. The result has been an ever changing process, which many organizations find confusing and inefficient (Respondent 4 3 June 2010, Respondent 10 17 June 2010, Respondent 17 29 June 2010, Respondent 21 8 July 2010). Each round of funding finds the CCMs and proposal writers having to relearn the process all over again. However, since this is a new financial mechanism without precedent, the trial and error nature of the process is necessary to try and maximize the benefits of the large amounts of funding provided.

Since 2008, the Global Fund has instituted a National Strategy Application funding approach that seeks to create more holistic programs that tie programs together over time, rather than funding separate proposals that that work with different communities. This is a strategy most key stakeholders felt was the correct approach and necessary for the improvement of the Global Fund process in Thailand (Respondent 1 3 June 2010, Respondent 11 17 June 2010, Respondent 20 8 July 2010, Respondent 16 24 June 2010). This approach seeks to align Global Fund financing within the framework of a country's national disease strategy. In doing so, the process will connect the rounds of funding, by basing the funding on the country's long-term vision.

Despite recent developments, there is a feeling from key stakeholders in Thailand that Global Fund has changed from a pure financial mechanism to a more involved funder, which seeks to put its hands in all aspects of program design and implementation. Their increasing number of regulations and rules creates a more rigid process that is not able to adapt to the

situation on the ground. By the time the program is ready to be implemented, there are no surprises left and no wiggle room for the organizations that must implement and achieve certain results. The focus on transparency and results, with indicators chosen prior to the start of the programs, limit the ability of those on the ground to change programs to unforeseen events and situations. Though the goal of the new national strategy is more holistic program planning, the lack of participation from those who are actually implementing the programs remains a deep problem that limits the effectiveness of the programs.

7.6 GAPS IN THE PROCESS

The Global Fund process in Thailand resulted in adaptation within the foreign aid and public health systems. However, there are missing linkages and gaps in policy which remain. Though a variety of government ministries participate in the planning process for these programs, because no resource interactions are occurring and because the Ministry of Public Health has a larger stake in the process than the others as the administrator of most of the grants, there remains a lack of collaboration between government ministries. The lack of resources for other government ministries provides little incentive for their active participation in the process. Though knowledge and information are exchanged within the CCM, the Ministry of Public Health receives over 80% of the Global Fund monies, making them the most powerful and influential in the process.

In addition, power within the implementation network, and between the implementation and planning networks, remains in Bangkok. Those organizations based outside of Bangkok in more rural, poor areas have little say in how programs are designed, what indicators are collected

and what the broad country goals should be. However, these organizations are the ones who are most familiar with the needs of the populations these programs seek to help and are the most educated in understanding the challenges of working in the varying local contexts. In addition, there is a lack of communication between local contexts, though these communities might have knowledge and experience that could assist organizations working in different localities.

The Global Fund programs in Thailand, though longer than grants of the past, still remain short term solutions. The improvement of public health system capacity helps to alleviate this problem, but it has not gone far enough. The programs offered are mostly prevention programs for AIDS, with care and treatment programs mostly planned for malaria and TB. There is gap in service provision for those people who are infected with AIDs and need long term assistance in caring and treating for it. The Global Fund is a foreign entity that may leave at any point, calling the sustainability of their programs into question and raising questions of how and when the financial burden for these programs should be transferred from this foreign fund to the Thai government.

7.7 THEORETICAL QUESTIONS TO BE EXPLORED

This study is an exploratory endeavor that seeks to expand the understanding of overlapping systems and contribute to theories surrounding how these interact with those systems they overlap and how adaptation occurs. In the process of this research, theoretical questions emerged about the nature of these overlapping systems, about the participants within them, and about how they develop over time.

The first area of theoretical questions that emerged concerns the composition of organizations that create policy and enact programs. To what extent does the positive adaptation of the two systems depend on certain organizational composition? Should the public sector constitute a certain percentage of organizations? If one sector dominates, does positive adaptation still occur? How do different power dynamics between organizations and sectors of organizations affect the adaptation? The assumption that emerges from this project is that the positive adaptation that occurred within the local system was a result of the mix organizations from all sectors that were involved, as well as their variety of areas of expertise, which helped inform future policy and programs. The conclusions found lead to the hypothesis that if one sector dominated the process, the positive adaptation affect would be lessened if not completely negated.

The second area of theoretical inquiry that arises involves questions about the development over time of these networks. To what extent does the action arena within different contexts follow common patterns of development? This research found that over time communities emerged and changed, and power dynamics were altered. Do these phenomena occur in different contexts? Are the patterns of change and development that occur within this system present in different country contexts?

Another area to be explored is related to network resilience. The imposition of structures onto this local system by a foreign entity may result in the disappearance of the structures if the foreign entity leaves. Are the structures created resilient to change? Have these structures become domestically owned or are they still seen as an imposition by a foreign entity? The structures created by the Global Fund allow for different types of collaboration to occur and have

directly resulted in the positive adaptation that occurred within the systems it overlaps, but do these positive changes remain when the Global Fund leaves?

The structure of the network and its relationship to adaptation and outcomes is another area to be explored. Do structurally similar networks have the same results? If the results are different, what are these differences and how can they be explained? The structure of networks include the number of ties, from whom and to whom those ties go, and the communities of nodes that exist. This study shows that the structure of the network can help explain the outcomes that occur. When the network is composed of organizations with a diverse set of attributes, and particularly when communities within the network are composed of these diverse organizations, programs that address unique needs and populations can emerge. In addition, when a network is sparsely connected with no discernible communities, and organizations are not connected to key organizations, the power of network members is low.

The last area of theoretical questions to explore examines the connection between network linkages and specific outcomes. Do different types of interactions and connections lead to specific outcomes? In addition, do different types of interaction and connections lead to better and faster learning among the network members? As the networks within the Global Fund process became less dense and formed more and a greater variety of communities, thereby creating more diverse programs that work with different types of communities, the trend is higher Global Fund performance ratings, which are based on regular program evaluations. Do 'in-person' interactions lead to a greater speed of change? Within this process, those organizations that are involved in the planning network, which regularly meets face-to-face, adaptation is occurring at a faster rate than in the implementation network, where interaction is often accomplished through the use of information technology.

7.8 QUESTIONS TO EXPLORE/FURTHER RESEARCH

There are three separate research areas in which to explore the theoretical questions mentioned above. These include the expansion of the Thai context to examine phenomena in more depth, expansion of the study to examine the Global Fund process in other contexts to compare and contrast, and to examine different types of overlapping systems to determine is similar phenomena are occurring in these contexts.

7.8.1 Exploration within the Thai Context: Regional Differences

To further explore the theoretical questions, the outcomes and structure by geographic region within Thailand could be explored. Do different regions within Thailand experience different program outcomes? How do those program outcomes affect organizational relationships? By examining the Thai context in more detail and depth, the links between specific outcomes and network phenomena could be determined, particularly given the similar cultural contexts that exist between regions. In addition, adaptation with the public health system and foreign aid system do not occur evenly throughout the country, and by understanding this adaptation, where it occurs, who is involved and what are the communalities in network structure, substance and organizational composition between the positive contexts, this can better identify sufficient conditions for positive results.

7.8.2 Exploration of other Global Fund program contexts

The Global Fund to date has committed $21.7 billion to 150 countries. Each of these countries have different physical and material conditions, different rules that govern interactions and organizations with different attributes that make up their public health and foreign aid systems. In addition, they each have different historical relationships that inform everything else. Studying different contexts can help determine if different organizational compositions still lead to positive adaptation. For example, when examining Cambodia, Thailand's neighbor, international organizations play a much larger role in the country prior to the Global Fund and continue to occupy positions of power within the Global Fund, partly due to the lack of institutional development within the country. International organizations occupy almost one third of all country coordinating mechanism seats as compared to the less than seven percent they occupy in Thailand. Does the composition of organizations change how the local systems adapt and how the foreign aid system adapts? In a context where international organizations hold so much power in the planning stage, do their roles within the process change as well or are they still dictating their own agendas like they did in the past?

Within these alternative contexts, how do network patterns develop and do they follow a similar pattern to the Thai context? If not, what are the differences that help explain how these networks are developing and adapting. For example, are there certain situations in which networks became less dense with the introduction of the Global Fund and, if so, how did the Global Fund's affect on the systems it overlaps change? Do organizational communities develop in the same way across contexts or do they differ?

7.8.3 Exploration of Applicability to New Overlapping Systems

Overlapping action arenas exist throughout the world in a variety of contexts. From national commissions to professional associations to regional task forces, the arena in which the interaction of people and organizations from a variety of fields that takes place over time can be thought of as overlapping arenas that have an effect on those arenas they span. The examination of how the interactions of organizations and actors that span two systems result in positive adaptation can significantly reduce the resources and manpower needed to make adaptations within the individual systems. Is there a difference in adaptation levels between an overlapping action arena that is imposed upon organizations and one that emerges organically? What role does power play within these various contexts? How does adaptation occur within these systems?

7.9 CONTRIBUTION TO THE LITERATURE

This study makes important contributions to the fields of complexity and systems, organizational collaboration and network theory. It redefines the problem of foreign aid effectiveness as one of a problem of conflicting systems. As such, it examines the Global Fund as a bridging action arena that overlaps these two systems that operate under their own unique rules, have different participants and histories. This bridging action arena creates and enhances relationships between organizations within the individual systems and between the local and foreign aid systems, resulting in an overlapping action arena that, by creating collaborations between organizations, influence how both the public health and foreign aid arenas work within a country. By

redefining the problem of foreign aid effectiveness as one of conflicting systems, new solutions can be realized, solutions that include encouraging new and different types of interactions like those occurring throughout the Global Fund process.

The results of the Global Fund process are an increase and change in type of interactions between organizations that already have relationships and the creation of new ones that help inform policy and enact programs. The process also changes the dynamics between organizations through a reallocation of power within both of these systems. International organizational power initially increases because of the need for technical assistance but, as learning occurs, their power declines. Within the local system, power is reallocated with a greater variety of organizations participating in the process. In addition, the roles that organizations play within the two separate systems change with these interactions, increasing the power organizations hold for certain activities but decreasing it for others. International organizations have a larger role in implementation than in the past through their roles in creating curricula for programs and researching local populations, but no longer have as much power to create and enact their own agendas. Local nonprofit organizations see an increase in power to influence policy creation if they work with government but a decrease in their ability to advocate for change from outside the system.

The adaptation of the Global Fund action arena results in changes within the public health and the foreign aid systems. It changes the attributes of the community, the rules under which they operate and the material conditions of both systems. The interactions between organizations within the Global Fund results in learning that inform policies, improves human and social capital throughout the public health system, results in decreasing power within the foreign aid

system, and an increasing need for new types of roles for international organizations within the public health system.

The Global Fund as an overlapping system does positively affect both systems it overlaps but, because it imposes structures on countries from the outside, the resilience of the overlapping system is questionable. The structures used by the Global Fund to create policy and enact programs are not internally generated mechanisms but imposed by a foreign entity. This can be seen by the lack of such structures in implementation, resulting in fewer instances of collaboration and coordination than at the planning level. Because power is relatively shared by organizations working within a country on the Global Fund process, due in part because the organizations working within the country are working towards the common goal of funded proposals, collaboration occurs. If the Global Fund left, this power dynamic would change, resulting in less collaboration between central government and local nonprofit organizations. The results of the interactions and creation of these relationships and organizational and system capacity remain, but the planning structures would most likely disappear. In addition, the disappearance of the Global Fund would change the material conditions within the arena once again, resulting in reallocation of power and roles.

This study highlights the importance of in-person interactions to change power dynamics and collaborate on programs. The planning structure created yields changing organizational attributes, changing rules and programs that provide better services, while the geographic barriers that exist between implementing organizations inhibit the same amount of change. In addition, the lack of Global Fund presence within local systems, yet their ability to create rules and regulations, results in them having more and more power over the process as time goes on. Because of the lack of transparency within the auditing agent who monitors and evaluates

programs, and because organizations do not understand why they are collecting the data they collect (and what it is used for), the relationships between local systems and the Swiss based Global Fund are not positively adapting over time. Nonetheless, the Global Fund process of planning and implementing programs in Thailand results in positive adaptation in both the foreign aid arena in Thailand and within the local public health arena, change that takes the form of the roles in which organizations play, the types of programs that are being planned, the capacity of organizations to implement programs and serve local populations and the relationships between organizations.

7.9.1 The Importance of Redefining the Problem

The use of foreign aid within developing countries can be examined as the interaction between two different systems, two systems that often conflict with one another, resulting in inefficient and ineffective programs. Redefining the problem of foreign aid effectiveness as a failure of relationships rather than just the lack of money, can help generate more effective solutions. Because of the lack of meaningful interaction between organizations within these systems, programs and agendas are redundant, which result in misuse of limited resources, are in conflict with one another and are ineffective due to lack of knowledge about the local populations and country contexts. The Global Fund process is an effort to bridge these divides and create an arena where organizations interact and share resources and knowledge to plan and implement better programs. By creating a new funding mechanism that creates new governing structures, the process aims to get organizations from these two conflicting systems to work together to plan and enact public health programs. In the process, the collaboration between these organizations results in a changing power structure within the community, in new relationships between

organizations and in new and different types of programs to address the needs of local populations. The interactions between organizations results in positive adaptation and learning throughout the process that results in better programs to address AIDS, malaria and TB.

> Where the Global Fund is working well, it has just massively changed the game, the whole development game. It has massively improved the lives of drug users and sex workers and men who have sex with men and other vulnerable populations…. it has just been a massive success and Thailand is a key example of that. Without Global Fund there would be no national harm reduction policy in Thailand and the activist organizations would still be up in arms asking, where's the money? The Thai government is not willing to give it. And drug users are dying…Imagine Thailand without Global Fund. No one would have stepped up. USAID, DFID, the Japanese, none of the main donors were waiting in the wings to step up and fund harm reduction in Thailand (Respondent 9 15 June 2010).

The interactions that occur between organizations within the Global Fund process change the two systems it overlaps. At the policy level, the interaction among organizations from different sectors and areas of expertise lead to more equitable policies. At the implementation level, the interaction among organizations results in increases in human and social capital that lead to long lasting public health sector improvement. The role and power of foreign aid actors within the public health sector in Thailand are also affected by this process. The introduction of large amounts of money into a system change power dynamics and influence of all the organizations involved. International organizational power to enact their agendas has decreased, but their importance in providing technical assistance has increased. The future of foreign aid and the interaction between foreign aid systems and local systems is reflected in these changing dynamics. If the trend in foreign aid financing follows the Global Fund model, the power of foreign aid to directly influence local systems will decrease over time, though its ability to indirectly make a difference by improving capacity and providing knowledge will increase, helping to improve program effectiveness.

The challenges of global public health problems and of providing resources to combat them permeate all societies. Changing the perceptions of how these problems are constructed, how they are addressed and how learning occurs can help better address these problems. If organizations within these processes can change and recognize that they are part of a larger whole than they can better shape policies and programs. New global financing mechanisms like the Global Fund are trying to assist in this process by trying to improve trust and positive interactions between key organizations. The Global Fund seeks to rectify ineffectual interactions by creating new structures and arenas in which organizations communicate, exchange resources and share knowledge. Through the process, organizational relationships change and adapt, resulting in positive adaptation in the two systems it overlaps. Underlying this process is the premise that, though physical capital is important in addressing public health problems, only through the improvement of human and social capital at all levels of planning implementation can these problems be truly addressed. By examining the problem of ineffective foreign aid through a different mental construct, the problem can be defined not as financial but as one of ineffective interactions, which can ultimately lead to different and more effective solutions by limiting negative interactions and encouraging positive ones. The tangible result of examining this problem through this lens is an improvement of program design and implementation, which leads to a betterment of the lives of local populations, to ultimate goal of any public and international policy.

APPENDIX A Interview Protocol

Using Foreign Aid in Public Health Systems: Coordination, Collaboration and Adaptation in Thailand

Interview Protocol

Interviewee _____

Organization: _____

Date: _____

Time: _____

Location: _____

Before Beginning the Interview:

- Summarize the project.
- Ask if the interviewee has any questions.
- State the confidentiality policy: *Written and oral reports and other written material coming out of this project will present only aggregate data and information. Responses will be kept confidential and names will not be cited. Once the interview is transcribed and a pseudonym is given, the audio tape will be erased.*

Background Questions for Interviewee

- What is your job title?
- What primary functions does your job involve?
- Can you tell me how work with the Global Fund intersects with your job function?
- How would you describe your work with the Global Fund?
- How long have you been involved with the Global Fund/your organization?
- What percentage of your time is involved with the Global Fund?

Questions for All Interviewees

1. What do you think of the Global Fund process? Does it differ from funding processes of the past?
2. How long have you/your organization worked with the Global Fund?
3. What people/organizations do you work with in the Global Fund process?
    a. In what ways?
4. Have you worked with these organizations in the past?
5. Has the relationship changed since you started working with the Global Fund process?
    a. In what ways?

Questions for Recipients of Global Funds

6. From whom do you receive Global Fund money?
7. Do you receive other resources for these programs? From whom?
8. Do you give the Global Fund money or resources to other organizations
9. How do you measure success?
10. Do you communicate the results of your programs to others?
    a. To whom and how do you do this?
11. Do other organizations communicate the results of their programs to you?
12. Do you attend trainings to improve your programs?
    a. What kinds of trainings and how often?
13. Do you give trainings to others?
    a. What kinds of trainings, to whom and how often?
14. Do you communicate with other organizations in the Global Fund?
    a. How?
    b. How often?
    c. Who?
    d. What types of information do you exchange?

Questions for CCM members of the Global Fund

15. To what organizations have you granted Global Fund resources?
16. Do you know where the money goes after it is granted to primary recipients?
    a. If so, who has received Global Fund money? When and how much?
17. How are decisions made? What is the process for approving resource transfers?
18. Do you receive progress reports from the primary and sub-recipients?
    a. Does that influence the policies and programs you create?
19. How often do you communicate with other CCM members?
    a. Who do you communicate with most? Least?
    b. In what ways do you communicate?
20. How often do you meet face-to-face with other CCM members?
    a. In regards to the CCM?
    b. In regards to other matters (including social interactions)?

Questions for technical advisors of the Global Fund

21. Do you receive any money from the Global Fund?
22. What kinds of advice to you give to the Global Fund organizations?
    a. Who do you advise?
    b. How often do you give advice?

c. In what forms is your advice given (face-to-face, in report, in meetings)?

23. How often do you communicate with organizations and people who work with the Global Fund?
    a. Who do you communicate with most? Least?
    b. In what ways do you communicate?
24. How often do you meet face-to-face with organizations and people who work with the Global Fund?
    a. In regards to the Global Fund?
    b. In regards to other matters (including social interactions)?

Questions for the local fund agents of the Global Fund

25. Do you receive any money from the Global Fund?
26. Do you give any Global Fund money to other organizations?
27. What kinds of information about organizations do you collect?
    a. From whom do you collect information?
    b. How do you collect the information?
    c. How often do you collect the information
28. How often do you communicate the information with organizations and people who work with the Global Fund?
    a. Who do you communicate with most? Least?
    b. In what ways do you communicate?
    c. How do you report to the main office?
    d. How do you report to primary and sub-recipients?
    e. Are beneficiaries included in this process?
29. How often do you meet face-to-face with organizations and people who work with the Global Fund?
    - In regards to the Global Fund?
    - In regards to other matters (including social interactions)?

APPENDIX B Thailand as a Case Study

1. Susceptibility to diseases

Characteristics of Thailand make its population especially susceptible to HIV/AIDS, TB and malaria. Because of its status as a center of sex tourism, it experienced an increase in HIV/AIDS in the 1990s. Though government policy has been effective in curbing and containing the infection rate for the general populace, there are still groups that are severely affected by the disease, groups that are not able or willing to receive testing and treatment (See Table 9). TB is prevalent among poor, rural populations, particularly along the Thai borders of Cambodia, Laos and Myanmar. Much of these populations are migrant workers who are afraid or unable to access treatment from Thai health facilities, thereby increasing the rate at which the disease is spread. These workers are also highly susceptible to malaria, which is highest along the tropical borders. In addition, the Thai-Cambodia border is one of the epicenters for new strains of malaria which, given the rate and speed off transmission, makes this area key to containing the malaria epidemic not only in Thailand, but in the rest of the world too.

Table 9: Prevalence of HIV/AIDS by Most Affected Groups, 1990 and 2008

	Prevalence Rate (1990)		Prevalence Rate (2008*)	
Population	Urban areas	Outside urban areas	Urban areas	Outside urban areas
Sex Workers	9.7	5.1	4.3	5.6
Intravenous Drug Users (IDUs)	36.7	29.7	39.3	32.1
Men having sex with men (MSM)	5	11.1	28.3	10.4
Tuberculosis Patients	7.6	2.8		33.6
Total Thai Prevalence Rates by Group (2008)				
	1990		2008	
Adults (15-49%)	1.0		1.4	

Most recent data available (UNAIDS/WHO 2008)

- ***HIV /AIDS***

The first case of AIDS in Thailand was diagnosed in 1984. By the end of 2002, it was estimated that more than 1 million Thais had been infected with HIV, 635,000 were living with HIV, and 24,000 were infected during 2002 (Thai Working Group on HIV/AIDS Projection 2001). The increasing number of symptomatic HIV-infected persons created an enormous burden on the health care system in Thailand, especially in the northern provinces, where an estimated 30% of all symptomatic persons in the country live (Bureau of Epidemiology 2003). Since its inception in 1987, the National AIDS Control Program (NACP) has achieved great strides; it accumulated a vast repertory of experience and served as a source of learning and inspiration to a large and growing number of countries around the world. The combined prevention and care response has generated considerable dividends and the spread of HIV has slowed significantly in most communities.

Stigma is still attached to HIV/AIDS, though the public discourse about sexuality and sexual health has become more open and objective (Ministry of Public Health and WHO 2005). However, although most hospitals provide testing and counseling services for HIV/AIDs victims, only about 25% of community health centers offered the same services (Thanprasertsuk et al. 2006), displaying a rural-urban divide in healthcare quality. In addition, though HIV prevalence rates is less than 2% in the general population, certain groups are much more susceptible, including sex workers, men who have sex with men (MSM), IDUs, and TB patients (See Table 3). This is due to their vulnerability to the disease as well as the government inability or unwillingness to properly educate, treat and prevent these groups from HIV. The introduction of the Global Fund into this system allows for organizations who work with these groups to lobby the government for change, to get funding to create more prevention programs and to allow for a dialogue between organizations about the best policies for all people living in Thailand.

- ***Tuberculosis (TB)***

There are strong indications that TB is a serious health threat among migrants to Thailand from neighboring Burma, Laos, and Cambodia. Unable to read or speak Thai, lacking official documentation, and fearing deportation if they come into contact with public authorities, many are hesitant to seek treatment. Those who do seek treatment move so frequently that their treatment is often interrupted. TB is having a devastating impact on other vulnerable groups as well, including prisoners, refugees, and minority groups. However, because of the groups affected, there is not enough research or documentation about this disease in Thailand (Soonthorndhada 2006). In addition, TB and HIV are co-infectious diseases and it is estimated that the number of TB patients who are HIV positive is at least 30% outside of major urban areas, creating treatment difficulties.

Tuberculosis incidence in Thailand, which fell by 50 percent from 1985 to 1991, rose again in the 1990s with the emergence of the HIV/AIDS epidemic. Today Thailand has an incidence rate of 142 cases per 100,000 people, and is 18th on the World Health Organization's list of high-burden countries. Thailand, through the National Tuberculosis Program (NTP), has committed itself to implementing the internationally recommended DOTS strategy, which emphasizes directly observed treatment, and achieving the international TB control targets of 70 percent detection rate and 85 percent treatment success rate. Budget reductions resulting from health care reforms have had a dramatic impact on the NTP's capacity to fight TB, particularly with regard to monitoring and evaluation, staffing, training, and public awareness-raising efforts. The integration of TB and HIV/AIDS departments at the central level appears to have resulted in TB being overshadowed by the more powerful AIDS program, rather than becoming its equal partner. (Soonthorndhada 2006). With the Global Fund's introduction, much needed funding is being funneled to organizations working with these most vulnerable populations, and the hope is for collaboration between HIV and TB organizations to improve both planning and implementation.

- ***Malaria***

Malaria in Thailand is forest-related and most prevalent along the international borders, especially on the Thai–Myanmar border. In the central plain areas, transmission has been eliminated for more than two decades. At the national level, malaria cases and deaths have fallen gradually since 1999, but the disease remains an important public health problem along the international borders. Young adult males who work in or near forests are a special group at risk in these areas. The National Malaria Control Program was a specialized, vertical program from its inception in 1949 until 1996, when it was partially merged with the control program for other vector-borne diseases and is now known as the Bureau of Vector-Borne Diseases of the Department of Communicable Disease Control within the Ministry of Public Health. At regional level, the control program structure comprises twelve Disease Prevention and Control offices, each directed by a medical officer. Throughout Thailand, there are 39 vector-borne disease control centers at provincial level and 302 vector-borne disease control units at district level that are responsible for the control of malaria as well as other vector-borne diseases. During the past decade, downsizing, decentralization and integration of the control program have resulted in a 30–40% reduction in the number of malaria staff throughout the country.

The major problems and constraints faced by the malaria control program are: 1. transmission at the international borders among foreign workers; 2. drug resistance along the Thai–Cambodian and Thai–Myanmar borders; 3. challenges in educating at-risk populations about unsafe behaviors; 4. emergence of epidemics as a result of migration of non-immune labor force following development projects into high-risk areas, and 5. high case-fatality rates among non-immune groups such as tourists and migrants (Songcharoen 2003). Prior to the Global Fund, malaria control programs in Thailand were the exclusive domain of the Thai government with few non-governmental organizations working on this disease.

2. History of Organizational Relationships in Public Health

Within the public health system in Thailand, policies trying to encourage participation and collaboration have often failed. Thailand's sprawling bureaucracy has not been noted for its success in horizontal co-operation and planning. The Ministry of Public Health itself comments "In a country which has a long history of centralized government with an administrative machinery empowered by the legalized role and function of civil servants like Thailand, there are always difficulties in pursuing the decentralization of government participation and achieving the required community participation for development activities" (MOPH 1988, 39).

Attempts have been made to enhance coordination between sectors and industries, a notable one being the establishment of a Joint Public Private Coordination Committee for Health Care. Despite the marked success of such committees in economic development, in health it failed and folded within a short period. The reasons for this are unclear, but the divergent interests of participants were an important factor (Kamnerdploy 1991). Ministry of Public Health regulatory and monitoring processes remain the same as they were 30 years ago despite the substantial increase in the private sector. No clear policy line on the role of the private sector emerged within the Ministry of Public Health, and this lack of clarity is another reason why sectoral interests are not voiced. In addition, the intensely pro-private, pro-market stance taken by the Thai government in the 1990s ignored how an economic boom (and its influence on healthcare) based upon free market principles may exacerbate income inequalities (Bennett and Tangcharoensathien 1994).

The right of Thai citizens to access free health care is enshrined in the 1995 constitution (though this is not the case in practice). Health care is provided by a variety of agencies. Though the public sector is still the main provider, the non-state sector (and in particular the private-for-profit sector in the urban areas) is increasingly large. Traditional healers are also significant care providers. Government policy since the 1970s has focused on rural primary care facilities and the majority of new government expenditure has been aimed at this sector in recent years.
The main provider of public services is the Ministry of Public Health (MOPH) which provides health care at three levels (national, state and local). The major challenges facing the public sector are financing health care, access to good quality health care, the referral system, and the provision and retention of health professionals. Current decision-making is highly centralized.

The size of the non-governmental organization (NGO) sector is not well documented, though NGOs have operated in the health sector in Thailand for many years. Since the Second World War, they have worked together with international NGOs and volunteer agencies. The 1973 political events led to greater political activism and the development of various socio-political groups including the Rural Doctor Society. The regional political events of the latter part of the 1970s also led to a refugee problem and involvement by international relief agencies. The role of NGOs within the health sector is mixed and has been viewed as a means of `bypassing the State' (Green 2000).

Their roles can be broadly divided into two. First, various well-established organizations provide health care services, such as the Family Planning Association, the Chinese Overseas Hospital, and those associated with relief and emergency services. The second group of NGOs is primarily concerned with advocacy activities. One of the best known of these advocacy organizations is that founded more than 20 years ago by Dr `Condom' Meechai Viravaidya, which forced discussion of AIDS and contraceptive practice onto the public agenda. Other advocacy campaigns have focused (to differing degrees of success) on pharmaceuticals (including campaigns against patent law and dumping of drugs) (Green 2000).

Other stakeholders, including the Royal Family, commercial companies and international agencies all have a role in the public health system in Thailand. The importance of the Royal Family within Thai society and culture, though possibly diminishing, should not be underestimated. The Thai Royal Family, as an institution, commands strong respect and has been associated with a number of health policy developments including iodized salt, control of dust in Bangkok, dental health and district hospitals (Green 2000). The most significant multilateral health agency in Thailand is the WHO, which has a long history of close involvement, particularly in malaria control and research. Its emphasis has been on technical support rather than in the area of health sector reform policies. The ILO has been a significant source of technical support in the development of the social security system. The EU was funding a project in the health sector reform area but had no significant in-country presence. The two bilateral agencies actively involved in the health sector (rural infrastructural development) were SIDA and the Japanese government, but neither appeared to have a desire to influence the overall shape of the health sector (Green 2000).

3. The Thai healthcare system

Thailand, a country of 65 million people and classified as lower-middle income by the World Bank, was one of the first Asian countries to face a severe HIV epidemic. In the late 1980s and 1990s, its government was also one of the first among high-burden countries – not only in the region, but worldwide – to initiate comprehensive prevention and treatment programs. Those steps were successful in stabilizing the epidemic, although the intensity and quality

of the government's prevention efforts in recent years have been criticized as inadequate (International HIV/AIDS Alliance and the Global Fund 2008).

Life expectancy in Thailand is 69 for men and 75 for women and both private and public expenditure on health is the largest in the region (WHO 2009). Nonetheless, it also has the region's highest HIV/AIDS prevalence rates and AIDS is the leading cause of death in adults (WHO 2009). Since the 1990s, a Universal Coverage Scheme (UCS), through a combination of three insurance and cost-recovery systems, provides every Thai citizen access to comprehensive health care for the payment of 30 baht (roughly one U.S. dollar). However, though in theory all Thais have access to basic health care there are concerns over equity (Kachondham and Chunharas 1993), with richer, more urban citizens receiving quality care while poor, rural residents are left without. Also, only Thai citizens qualify for this scheme, and those citizens have access only in their area of residence, which poses problems for illegal migrants from Burma, Laos and Cambodia and for Thais migrating between rural and urban centers.
Inequality in quality and quantity of services is evident between urban and rural areas. This is problematic in addressing infectious diseases, particularly malaria which is concentrated in rural, border areas. In addition, many of those infected with malaria and TB are migrant workers and refugees who face discrimination from the government. Finally, the government deems some of those most affected by HIV/AIDs (e.g. intravenous drug users) as criminals and does not address treatment and prevention needs in regards to these groups.

Health care expenditure has risen rapidly in recent years. Approximately six per cent of GNP is spent on health in Thailand (Bennett and Tangcharoensathien, 1994). Household payments account for over 70 per cent of the overall health care expenditure (WHO 2009) with the public sector accounting for the remainder. The past decade has seen important changes in health care financing, and there are now various funding mechanisms. The introduction of global health initiatives like the Global Fund has given rise to a set of inter-agency dynamics, some of which were not foreseen by policy-makers (Green 2000).

4. Other Key Factors

Two other key factors were taken into consideration when selecting Thailand as a case study for this research – its relative stability and its involvement with the Global Fund since its inception. Thailand is a constitutional monarchy, and though it experienced a 2006 coup which removed Prime Minister Thaksin Shinawatra from power, it remained a functioning democracy and had generally free and fair multi-party elections in 2007. In addition, it maintained institutional stability through the turmoil in both its legislative and judicial branches of government. In 2010, thousands of red shirt protesters, for the most part supporters of Thaksin, streamed into Bangkok from rural areas and called on the Thai government to listen to their demands. They remained camped in Bangkok for over two months, but eventually disbursed relatively peacefully. Nonetheless, throughout the rest of Thailand (and in most parts of Bangkok), organizations still functioned. This institutional consistency and stability make it a good case to examine changing relationships between 2002 and 2010.

Thailand worked with the Global Funds from its inception, with a Thai representative serving on the initial planning committee. Thailand submitted proposals for every round of funding and was awarded Global Fund monies for five HIV proposals, plus a five year continuation of its first round HIV grant, four TB proposals and three malaria proposals. Outside of the Global Fund evaluations and the grants themselves, there has been little written by the academic and practitioner community in regards to Thailand. The sole exception was the Round 3 grant process in which a group of civil society actors submitted and were approved for a non-CCM proposal. This grant's goal was prevention of HIV/AIDs among intravenous drug users (IDUs) in Thailand. This group was criminalized by the Thai government and the CCM, dominated by the Ministry of Public Health, refused to include this population in their grant proposals. With the Global Fund's approval of this non-CCM proposal, which many argue was unfounded given that Thailand had a legitimate government, was not in conflict, and worked with civil society (Kerr et al. 2004). This effort by the Thai civil society to influence policy and shame the government into acting resulted in IDUs being included in policy and has influenced the current relationship between civil society and the Thai government (International HIV/AIDS Alliance and the Global Fund 2008).

APPENDIX C Organizational Characteristics of Interviewees

Location of Office	Role in Global Fund Process	Disease	Ethnicity of Interviewee
17 Bangkok	7 Principal Recipients	14 HIV/AIDS	15 Thai
5 Chiang Mai	12 Sub Recipients	5 TB	8 International
1 Laos (Skype)	3 Sub sub-recipients	5 Malaria	
	5 Technical Assistants		
	14 Implementing Agencies		
	6 CCM members		
	3 Technical Committee Members		
	Global Fund representative for Asia		

APPENDIX D Coding Rules

D.1 CODING RULES FOR ORGANIZATIONS

Variable	Value	Definition
Name	Name	Official name for the organization.
Acronym	Acronym	Acronym for the organization.
Sector of Organization	Civil Society	Organization is non-profit, primarily based in Thailand and of Thai origin
	Private	Organization for profit
	Public	Organization is publically funded and Thai
	International Organization (IO)	Organization not solely based in Thailand
Type of Organization	Network	Organization that is membership based
	Non-governmental organization (NGO)	Organization that is non-profit, non-governmental
	Foundation	Organization that is non-governmental and funds other organizations
	Institute	Organization whose primary purpose is research
	Central Government	Public organizations that operate at national level
	Regional Government	Public organizations that operate within more than one province
	Provincial Government	Public organizations that deal with a single province
	Local Government	Public organizations focused on sub-provincial levels
	University	University
	Hospital	Hospital
	Prison	Prison
	International Organization (IO)	Organization that is international in governance
Global Fund Role	Country Coordinating Mechanism (CCM)	Global Fund defined - Organization that is a member of the CCM
	Technical Assistance (TA)	Organization that provides training, information, and other technical assistance to other organizations in the GF process
	Principal Recipient (PR)	Global Fund defined – Organization that signs contract with Global Fund and ultimately responsible for the programs
	Sub-Recipient (SR)	Global Fund defined – Organization that receive funding from principal recipients
	Sub sub-recipient (SSR)	Global Fund defined – Organization that receive funding from sub recipients
	Implementing Agency (IA)	Global Fund defined – Organization responsible for enacting programs
	Global Fund Representative (GF Rep)	Thai organization/actor who sits on the Global Fund board and committees

	Technical Committee (TC)	Organization/actor who researches and writes proposals - committees of the CCM -
Disease	HIV/AIDS	Organization who work on HIV/AIDS programs
	Tuberculosis (TB)	Organization who work on TB programs
	Malaria	Organization who work on Malaria programs
	All	Organization who works with all three disease programs
Area of Expertise	AIDS	Organizations whose primary function and mission is focused on AIDS
	Care and Treatment	Organizations whose primary function and mission is focused on care and treatment of diseases
	Coordination	Organizations whose primary function and mission is focused coordination between programs and organizations
	Disease Control	Organizations whose primary function and mission is focused on controlling diseases
	Economic and Social Development	Organizations whose primary function and mission is focused on economic and social development
	Education	Organizations whose primary function and mission is focused on education services
	Foreign Affairs	Organizations whose primary function and mission is focused on foreign affairs
	Funding	Organizations whose primary function and mission is focused on funding programs
	Health Insurance	Organizations whose primary function and mission is focused on providing health insurance
	Health Technology	Organizations whose primary function and mission is focused on improving health technology
	Labor and Social Welfare	Organizations whose primary function and mission is focused on labor and social welfare
	Malaria	Organizations whose primary function and mission is focused on malaria
	Monitoring and Evaluation	Organizations whose primary function and mission is focused on monitoring and evaluation
	People Living with HIV/AIDS	Organizations whose primary function and mission is focused on people living with AIDS
	Research	Organizations whose primary function and mission is focused on research
	System Strengthening	Organizations whose primary function and mission is focused on strengthening the system through improving organizational capacity
	TB	Organizations whose primary function and mission is focused on TB
	Urban Development	Organizations whose primary function and mission is focused on urban development
	Vulnerable Populations	Organizations whose primary function and mission is focused on vulnerable populations (e.g. migrants, sex workers, men who have sex with men, IDUs)
	Youth	Organizations whose primary function and mission is focused on youth programming

D.2 CODING RULES FOR TRANSACTIONS AND INTERACTIONS

Variable	Value	Definition
Round	Round of Funding (1-10, 1 RCC)	The round of funding (and year) the interaction occurred
Event	CCM Meeting	Meeting of the country coordinating mechanism
	Regional Meeting	Meeting of East Asia and the Pacific country representatives
	Global Fund Workshop	Meeting for Global Fund training
	Technical Committee Meeting	Meeting of technical committee to construct and compose proposals
Action	Proposal Preparation and Writing	Interaction that involves proposal preparation and writing
	Education/Training	Interaction that involves education or training
	Funding	Interaction that involves provision of funding
	Monitoring and Evaluation	Interaction that involves monitoring and evaluation of programs
	Technical Assistance	Interaction that involves provision of technical assistance in proposal preparation and writing, research and M&E, curricula development, or implementation
	Report Results	Interaction that involves reporting results of programs
	Implementation	Interaction that involves implementing programs
Organization 1	Organization 1/Initiator	One of the two organizations involved in the interaction – If the interaction is directional (e.g. funding), the organization the initiates the interaction
Organization 2	Organization 2/Recipient	One of the two organizations involved in the interaction – If the interaction is directional (e.g. funding), the organization the receives the interaction
Interaction	Resource Transfer (Funding)	Directional interaction where one organization provides funding to another
	Resource Transfer (Technical Assistance)	Directional interaction where one organization provides technical assistance to another
	Knowledge Exchange	Directional interaction where one organization provides information, training or other knowledge to another
Frequency of Interaction	Frequency (1-12)	The number of times (annually) the interaction occurs
Component	System Strengthening	Interaction between organizations that primarily results in the use of Global Fund money to improve education, infrastructure, organizational relationships and to establish partnerships
	Prevention	Interaction between organizations that primarily results in the use of Global Fund money to work in prevention programs
	Care and Treatment	Interaction between organizations that primarily results in the use of Global Fund money to work in care and treatment
	Prevention, Care and Treatment	Interaction between organizations that primarily results in the use of Global Fund money to work in both prevention and care and treatment
	Planning, Training and Evaluation	Interaction between organizations that primarily results in the use of Global Fund money to primarily help plan programs, train personnel for programs or monitor and evaluate programs

Subject of Grant	Youth	Interaction between organizations that primarily results in the use of Global Fund money to work with youth
	Migrants/Border Populations	Interaction between organizations that primarily results in the use of Global Fund money to work with migrants and border populations
	Men who have sex with men (MSM)	Interaction between organizations that primarily results in the use of Global Fund money to work with MSM
	Sex Workers (SW)	Interaction between organizations that primarily results in the use of Global Fund money to work with SW
	Intravenous Drug Users (IDUs)	Interaction between organizations that primarily results in the use of Global Fund money to work with IDUs
	Orphans and Vulnerable Children (OVC)	Interaction between organizations that primarily results in the use of Global Fund money to work with OVC
	People Living with HIV/AIDS (PLWHA)	Interaction between organizations that primarily results in the use of Global Fund money to work with PLWHA
	Prisoners	Interaction between organizations that primarily results in the use of Global Fund money to work with prisoners
	Workers	Interaction between organizations that primarily results in the use of Global Fund money to work with workers
	Community Capacity	Interaction between organizations that primarily results in the use of Global Fund money to improve community capacity to work with these diseases
Region	National	Interaction between organizations that results in the use of Global Fund money to work in all provinces
	Central	Interaction between organizations that results in the use of Global Fund money to work in central provinces (classified by CCM)
	Southern	Interaction between organizations that results in the use of Global Fund money to work in southern provinces (classified by CCM)
	Northeast	Interaction between organizations that results in the use of Global Fund money to work in northeast provinces (classified by CCM)
	North	Interaction between organizations that results in the use of Global Fund money to work in northern provinces (classified by CCM)

D.3 CODING RULES FOR TRANSCRIPTS

Code 1	**Global Fund Process**	**Represents information and opinions of organizations involved in the Global Fund process about the process and how it has changed**
Sub-codes	Planning Information	Indicates information around the planning process, including the functioning of CCM
	Funding issues	Indicates information related to the Global Fund monies for programs
	Monitoring and Evaluation	Indicates information related to Global Fund monitoring and evaluation of the organizations
	Requirements of the Global Fund	Indicates information related to Global Fund requirements of the organizations
	Opinions	Indicates opinions of the Global Fund
Code 2	**Global Fund Program Information**	**Represents information and opinions of organizations involved in the Global Fund process about the programs the funding has created**
- c o	Activities	Indicates activities the organization does during the Global Fund process

		(e.g. Proposal writing, research, implementation, M&E, etc.)
	Program	Indicates Global Fund program information (e.g. disease, subject, component, etc.)
	Location	Indicates location of Global Fund program
	Round of Funding	Indicates round of funding in which the program occurred
Code 3	**Organizational Characteristics**	**Represents information about the organizations involved in the Global Fund process, including their histories prior to involvement with the Global Fund**
Sub-codes	History/Characteristics of Organization	Indicates information about the organization that is independent of the Global Fund process or occurred before its introduction into Thailand
	Role in Global Fund Process	Indicates information about the role the organization plays in the Global Fund process (e.g. CCM member, PR, SR, SSR, TA or TC)
Code 4	**Collaboration Efforts**	**Represents information about how organizations within the Global Fund process work together (or fail to work together) and in what ways**
Sub-codes	Resource Transfer	Indicates information about funding and technical assistance exchange, including who is the recipient and who is the initiator
	Knowledge Sharing	Indicates information about knowledge sharing, including who is the recipient and who is the initiator and what type of knowledge is it
	Information and Communication	Indicates information about information and communication exchange, including frequency and type
	Activities	Indicates information about the activities in which collaboration occurs – planning, implementation or trainings
	Change in Relationships/Policies	Indicates information about how relationships have changed since the introduction of the Global Fund
	Gaps	Indicates information about the opinions of the organizations about gaps in collaboration

APPENDIX E Pre Global Fund Tables

E.1 WHOLE NETWORK MEASURES BY DISEASE, NESTED SET AND ACTION ARENA

	Disease	Density	Fragmentation	Controlling Agency[7]	Inter-organizational leader (eigenvector centrality)[8]	Connects Agencies[9]	Knowledge Exclusivity[10] (Org X Knowledge Network)
Whole Network (Pre Global Fund)	All (N=676)	0.00	0.19	DOC (0.10), MOPH (0.10)	Mahidol University, Faculty of Tropical Medicine (1.00)	Thai Red Cross, AIDS Research Center (0.09)	Kwai River Christian Hospital (0.02), Thai Health Promotion (0.02)
	TB (N=361)	0.01	0.33	DOC (0.20)	MOPH (1.00)	Thai Health Promotion Foundation (0.30)	Thai Health Promotion Foundation (0.05), MOPH (0.04)
	Malaria (N=240)	0.00	0.44	DOC (0.30)	MOPH (1.00)	Thai Health Promotion Foundation (0.24)	MOPH (0.09), Thai Health Promotion Foundation (0.05)
	AIDS (N=466)	0.01	0.00	MOPH (0.14)	Bureau of AIDS (1.00)	Thai Red Cross, AIDS Research Center	Thai Health Promotion (0.03), Population

[7]The controlling agency is the agency with the largest total degree centrality. Individuals or organizations with the largest total degree centrality are linked to many others and so, by virtue of their position have access to the ideas, thoughts, beliefs of many others.

[8] A node is central to the extent that its neighbors are central. Leaders of strong cliques are organizations who are connected to others that are themselves highly connected to each other. An organization has a large eigenvector centrality if they are well connected to others who are well connected. Organizations that are connected to many otherwise isolated individuals or organizations will have a much lower score in this measure then those that are connected to groups that have many connections themselves.

[9] An organization 'connects agencies' if it has high betweeness and low degree. These are organizations that connect disconnected groups, though the organization may be connected to one member of a group. This is a composite index (ratio of betweenness centrality to total degree centrality) that is high when an organization is potentially influential but not in the know.

[10] This measure detects entities that have ties that comparatively few other entities have.

						(0.15)	Development Association (0.01)
By Nested Set/Action Arena							
Planning	Thai Organizations (N=83)	0.04	0.16	MOPH (0.23), BVBD (0.16)	Mahidol University, Faculty of Tropical Medicine (1.00)	MOPH (0.12)	BATS AIDS, MOPH, ACCESS, MOLSW, TNP+, TTAG (0.00)
Implementing	Thai Organizations (N=531)	0.00	0.24	DOC (0.13), MOPH (0.10)	DOC, Mahidol University, Faculty of Tropical Medicine (1.00)	BATS TB (0.10)	BATS AIDS, MOPH, OPDC 10, TPMA, TTAG (0.00)
International Organizations	International Organizations and International Nonprofits in Thailand (N=67)	0.02	0.55	PATH (0.27), WHO-TH (0.16)	PATH (1.00), USAID (0.61)	USAID (0.35), WHO-TH (0.22)	WHO, USAID, Planned Parenthood Association of Thailand, MSF (0.00)
Overlapping Action Arenas							
Planning (Thai and IO)	All (N=154)	0.02	0.10	PATH (0.23), MOPH (0.19)	Mahidol University, Faculty of Tropical Medicine (1.00), BVBD (0.53)	Khon Kaen University (0.06)	NA
	AIDS (N=123)	0.03	0.09	PATH (0.28), MOPH ().22)	Kwai River Christian Hospital, PATH (1.00)	MOPH-DHSS (0.13), WHO, TUC (0.09)	WHO, BATS AIDS (0.00)
	Malaria (N=42)	0.05	0.43	Mahidol University, Faculty of Tropical Medicine (0.61), BVBD (0.48)	Kwai River Christian Hospital, Mahidol University, Faculty of Tropical Medicine, Duang Prateep Foundation (1.00)	Thai Health Promotion Foundation (0.20),WHO (0.17)	WHO, MOPH, FHI, USAID (0.01)
	TB (N=43)	0.05	0.45	BATS TB (0.32), WHO ().31)	Duang Prateep Foundation, BATS TB (1.00)	Thai Health Promotion Foundation (0.18), Anti-TB Association of Thailand, Chiang Mai (0.12)	WHO, MOPH (0.01)
Implementing (Thai and IO)	All (N=593)	0.00	0.21	DOC (0.12), MOPH (0.11)	Mahidol University, Faculty of Tropical Medicine, DOC, (1.00)	Kwai River Christian Hospital, (0.04), MOPH (0.03)	NA

	AIDS (N=469)	0.00	0.26	DOC (0.15), MOPH (0.13)	DOC (1.00), MOPH (1.00)	Thai Red Cross, AIDS Research Center (0.05), MOPH (0.05)	WHO, BATS AIDS (0.00)
	Malaria (N=341)	0.00	0.35	DOC (0.21), MOPH (0.12)	Duang Prateep Foundation, Mahidol University, Faculty of Tropical Medicine, DOC (1.00)	Thai Health Promotion Foundation (0.21)	WHO, MOPH, RBM, USAID, FHI, UNICEF (0.01)
	TB (N=354)	0.00	0.49	DOC (0.21), MOPH (0.13)	Duang Prateep Foundation, MOPH, DOC (1.00)	Thai Health Promotion Foundation (0.24)	WHO, MOPH (0.01)

E.2 PRE GLOBAL FUND PROGRAMS – BENEFICIARIES, ACTIVITIES AND AREAS OF EXPERTISE OF ORGANIZATIONS

	Thai Action Arena			**Overlap Between Action Arenas**		
International Action Arena	**Total**	**Implementing**	**Planning**	**Total**	**Planning and IO**	**Implementing and IO**
Subject of the Program – Organization x Task Network						
-Urban Poor (1.00) -Youth (0.42) -Org. Capacity (0.39) -TB Patients (0.35) -Tropical Medicine (0.31) -IDU (0.28) -Women (0.23) -PLWHA	-Local Populations (1.00) -Org. Capacity (0.32) -Prisoners (0.16) -Urban Poor (0.12) -PLWHA (0.05) -TB Patients (0.05)	-Local Populations(1.00) -Org. Capacity (0.18) -Prisoners (0.17) -Urban Poor (0.13) - PLWHA (0.05) -TB Patients (0.04) -Tropical Medicine (0.04) -Border	-Org. Capacity (1.00) -Urban Poor (0.45) -Local Populations (0.31) -Prisoners (0.29) -PLWHA (0.17) -Tropical Medicine	-Local Populations (1.00) -Org. Capacity (0.37) -Urban Poor (0.21) -Prisoners (0.16) -Tropical Medicine (0.08) -TB Patients	-Org. Capacity (1.00) -Urban Poor (0.63) -Local Populations (0.26) -Prisoners (0.24) -Tropical Medicine (0.22) -PLWHA	-Local Populations (1.00) -Org. Capacity (0.24) -Urban Poor (0.22) -Prisoners (0.17) -Tropical Medicine (0.08) -TB Patients (0.07)

(0.22) -Border Populations (0.12) -Migrants (0.04)	-Tropical Medicine (0.04) -Border Populations (0.03) -Rural Populations (0.01) -Policy Creation (0.01)	Populations (0.03) -Rural Populations (0.01) -Sex Workers (0.01)	(0.14) -TB Patients (0.12) -Border Populations (0.11) -Rural Populations (0.04) -Policy Creation (0.04)	(0.07) -PLWHA (0.07) -Border Populations (0.05) -Youth (0.04) -IDU (0.03)	(0.20) -TB Patients (0.18) -Border Populations (0.15) -Youth (0.11) -IDU (0.07)	-PLWHA (0.07) -Border Populations (0.05) -Youth (0.04) -Women (0.02)
Program Type –Organization x Action Network						
-Prevention (1.00) -System Strengthening (0.34) -Research (0.32) -Advocacy (0.19) -Prevention, Care and Treatment (0.16) -Training and Evaluation (0.03) -Care and Treatment (0.03)	-Care and Treatment (1.00) -Prevention, Care and Treatment (0.70) -System Strengthening (0.48) -Prevention (0.33) -Research (0.17) -Advocacy (0.04) - Training and Evaluation (0.02)	-Care and Treatment (1.00) -Prevention (0.59) -System Strengthening (0.17) -Research (0.10) -Advocacy (0.02) - Training and Evaluation (0.01)	-System Strengthening (1.00) -Care and Treatment (0.52) -Prevention (0.52) -Research (0.35) -Prevention, Care and Treatment (0.21) -Advocacy (0.09) - Training and Evaluation (0.04)	-Care and Treatment (1.00) -Prevention, Care and Treatment (0.74) -System Strengthening (0.58) -Prevention (0.54) -Research (0.27) -Advocacy (0.08) - Training and Evaluation (0.03)	-System Strengthening (1.00) -Prevention (0.82) -Research (0.47) -Care and Treatment (0.43) -Prevention, Care and Treatment (0.25) -Advocacy (0.15) - Training and Evaluation (0.05)	-Care and Treatment (1.00) -Prevention (0.72) -System Strengthening (0.22) -Research (0.15) -Advocacy (0.05) - Training and Evaluation (0.01)
Knowledge of Organizations –Organization x Knowledge Network						
-Vulnerable Populations (1.00) -Disease Control (0.67) -Reproductive Health (0.65) -Research (0.59) -Funding (0.55) -Harm Reduction (0.16) -Health Technology (0.08) -Malaria (0.08) -Care and Treatment (0.07) -Monitoring and Evaluation (0.06)	-Local Development (1.00) -Prisoners (0.18) -Care and Treatment (0.17) -Research (0.15) -Public Health (0.13) -Vulnerable Populations (0.08) -TB (0.06) -System Strengthening (0.05) -AIDS (0.04) -Malaria (0.04)	-Local Development (1.00) -Prisoners (0.19) -Care and Treatment (0.18) -Research (0.16) -Public Health (0.14) -TB (0.06) -AIDS (0.05) -Vulnerable Populations (0.04) -Malaria (0.04) -Disease Control (0.03)	-Research (1.00) -Public Health (0.89) -Prisoners (0.60) -Vulnerable Populations (0.57) -Local Development (0.38) -System Strengthening (0.34) -AIDS (0.28) -Malaria (0.26) -TB (0.25) -Disease Control (0.21)	-Local Development (1.00) -Research (0.20) -Care and Treatment (0.18) -Prisoners (0.18) -Vulnerable Populations (0.16) -Public Health (0.13) -Disease Control (0.10) -Reproductive Health (0.08) -Malaria (0.07) -TB (0.07)	-Research (1.00) - Vulnerable Populations (0.84) -Public Health (0.68) -Disease Control (0.53) -Prisoners (0.45) -Reproductive Health (0.38) -Malaria (0.34) -Local Development (0.29) -System Strengthening (0.27) -AIDS (0.23)	-Local Development (1.00) -Research (0.21) -Prisoners (0.19) -Care and Treatment (0.19) -Public Health (0.14) -Vulnerable Populations (0.13) -Disease Control (0.11) -Reproductive Health (0.08) -Malaria (0.07) -TB (0.06)

APPENDIX F Global Fund Grants to Thailand

Grant Name	Grant Amount and Dates
Round 1	
TB Strengthening National Prevention and Care of Tuberculosis PRINCIPAL RECIPIENT: Ministry of Public Health	1 October 2003-31 May 2009 Phase 1 = $6,999,350 Phase 2= $4,455,857 TOTAL = $11,455,207
AIDS Aligning Care and Prevention of HIV/AIDS with Government Decentralization to Achieve Coverage and Impact PRINCIPAL RECIPIENT: Ministry of Public Health	Round 1 2003-2008 (RCC - 2008-2011) Phase 1 = $30,933,204 Phase 2 = $78,420,496 TOTAL = $146,766,828
Malaria Strengthening National Prevention and Care of Malaria PROPOSED PRINCIPAL RECIPIENT: Ministry of Public Health	UNFUNDED Proposed Budget Phase 1=$4,732,500 Phase 2=$5,034,500
Round 2	
AIDS Prevention of HIV/AIDS Among Migrant Workers in Thailand (PHAMWIT) PRINCIPAL RECIPIENT: Raks Thai Foundation	1 October 2003-31 May 2009 Phase 1=$5,993,913 Phase 2=$9,461,310 TOTAL=$15,455,223
AIDS Enhancing HIV-Related Care and Treatment (ECAT) for HIV-infected Mothers and their Partners and Children PRINCIPAL RECIPIENT: Ministry of Public Health	1 November 2003-30 April 2009 Phase 1=$14,079,270 Phase 2=$622,278 TOTAL=$14,701,548
Malaria National Prevention and Control Program on Malaria in Thailand PRINCIPAL RECIPIENT: Ministry of Public Health	1 March 2004-28 February 2009 Phase 1=$2,280,000 Phase 2=$3,002,000 TOTAL=$5,282,000
Round 3	
AIDS Preventing HIV/AIDS and Increasing Care and Support for Injection Drug Users in Thailand PRINCIPAL RECIPIENT: Raks Thai Foundation (NON CCM PROPOSAL)	1 October 2004-30 September 2007 Phase 1=$911,542 Phase 2=$324,566 TOTAL=$1,236,108
Round 6	
TB Reduction of TB Morbidity in Vulnerable Populations PRINCIPAL RECIPIENT: Ministry of Public Health	1 October 2007-30 September 2012 Phase 1=$4,440,354 Phase 2=$4,298,610 TOTAL=$8,738,964
TB Reduction of TB morbidity among Non-Thai Migrants in Six Border and	1 October 2007-30 September 2012

Adjacent Province PRINCIPAL RECIPIENT: World Vision Foundation of Thailand	Phase 1=$3,707,456 Phase 2=$4,486,986 TOTAL=$8,194,442
Round 7	
AIDS Aligning Care and Prevention of HIV/AIDS with Government Decentralization to Achieve Coverage and Impact PRINCIPAL RECIPIENT: Ministry of Public Health	Rolling Continuation Channel (RCC) 2008-2011 (From Round 1) RCC = $37,413,128 TOTAL = $146,766,828
AIDS Scaling Up Access to HIV/AIDS Prevention Services for MSM/IDU/SW (SAHAMIS) PRINCIPAL RECIPIENT: Ministry of Public Health	UNFUNDED Proposed Budget Phase 1=$23,383,544 Phase 2=$42,799,434 TOTAL=$66,182,978
AIDS (Regional) Scaling up the Regional Response to HIV and AIDS among Migrant and Mobile Populations in the ASEAN Region PRINCIPAL RECIPIENT: Association of South-East Asian Nations Secretariat	UNFUNDED Proposed Budget Phase 1=$34,807,826 Phase 2=$54,585,871 TOTAL=$89,393,697
TB Strengthening quality TB control among vulnerable population in Thailand PRINCIPAL RECIPIENT: Ministry of Public Health	UNFUNDED Proposed Budget Phase 1=$6,491,515 Phase 2=$13,372,919 TOTAL=$19,864.432
Malaria Partnership towards malaria reduction in migrant and conflict-affected population in Thailand PRINCIPAL RECIPIENT: Ministry of Public Health	1 July 2008-30 June 2013 Phase 1=$11,939,346 Phase 2=$5,576,581 TOTAL=$17,515,927
Round 8	
AIDS Comprehensive HIV Prevention among MARPs by Promoting Integrated Outreach and Networking (CHAMPION) – Sex Workers and Men who have sex with Men PRINCIPAL RECIPIENT: Ministry of Public Health	1 July 2009-30 June 2011 Phase 1=$16,863,815 Phase 2= TOTAL=
AIDS Comprehensive HIV Prevention among MARPs by Promoting Integrated Outreach and Networking (CHAMPION) – Migrants PRINCIPAL RECIPIENT: Raks Thai Foundation	1 July 2009-30 June 2011 Phase 1=$8,979,644 Phase 2= TOTAL=
AIDS Comprehensive HIV Prevention among MARPs by Promoting Integrated Outreach and Networking (CHAMPION) – IDU PRINCIPAL RECIPIENT: Population Services International	1 July 2009-30 June 2011 Phase 1=$6,415,062 Phase 2= TOTAL=
TB Strengthening quality TB control among vulnerable population in Thailand PRINCIPAL RECIPIENT: Ministry of Public Health	1 July 2009-30 June 2011 Phase 1=$10,240,102 Phase 2= TOTAL=
Round 9	
AIDS Taking Action for Children Infected with and Impacted by HIV PROPOSED PRINCIPAL RECIPIENT: Ministry of Public Health (Department of Health), Thai National AIDS Foundation	UNFUNDED PROPOSED BUDGET Phase 1: $22,903,685 Phase 2: $46,031,671 TOTAL: $68,935,356
Malaria Moving Towards the Elimination of Falciparum Malaria in Thailand	UNFUNDED PROPOSED BUDGET

PROPOSED PRINICAL RECIPIENT: Ministry of Public Health (Department of Disease Control)	Phase 1: $32,327,332 Phase 2: $43,321,560 TOTAL: $75,648,892
Round 10	
AIDS Comprehensive HIV/AIDS Care, Support, and Social Protection for Affected and Vulnerable Children Living in High Prevalence Area to Achieve Full Potential in Health and Development (CHILDLIFE) PRINCIPAL RECIPIENT: Ministry of Public Health, AIDS Access Foundation	PROPOSED BUDGET Phase 1: $15,398,247 Phase 2: $26,690,320 BOARD APPROVED PHASE 1: $15,398,249
AIDS (Regional) People Living with HIV Response to AIDS in Asia and the Pacific - Strengthening Capacity of National Networks of PLHIV to Provide Treatment, support, Community Outreach and Information to PLHIV in 7 Countries PRINCIPAL RECIPIENT: Asia Pacific Network of People Living with HIV/AIDS (APN+)	PROPOSED BUDGET Phase 1: $12,025,463 BOARD APPROVED PHASE 1: $1,200,000
TB Universal Access to TB Care in Vulnerable Populations (UATBV) PRINCIPAL RECIPIENT: Ministry of Public Health	PROPOSED BUDGET Phase 1: $12,344,773 Phase 2: $19,372,056 BOARD APPROVED PHASE 1: $12,344,773
Malaria Moving Towards the Elimination of *Pasmodium falciparum* Through Intensified Malaria Control in Thailand PRINCIPAL RECIPIENT: Ministry of Public Health	PROPOSED BUDGET Phase 1: $42,042,647 Phase 2: $58,938,184 BOARD APPROVED PHASE 1: $32,500,432

APPENDIX G Communities by Round, Disease and Type of Network

Round	Disease	Type of Network	Number of Communities (Q-Value)*	Average Number of Members	Funded?
Pre Global Fund	**All**	Planning	**16 (0.6)**	**9.63**	**Yes**
	AIDS		**9 (0.6)**	**13.67**	**Yes**
	Malaria		**7 (0.5)**	**6**	**Yes**
	TB		**13 (0.5)**	**3.31**	**Yes**
	All	Implementation	**65 (0.7)**	**9.12**	**Yes**
	AIDS		**73 (0.7)**	**6.42**	**Yes**
	Malaria		**76 (0.7)**	**4.49**	**Yes**
	TB		**32 (0.7)**	**11.06**	**Yes**
Round 1	All	Planning	No groups		
	AIDS		No groups		Yes
	Malaria		No groups		No
	TB		No groups		Yes
	All	Implementation	No groups		
	AIDS		No groups		Yes
	Malaria		No groups		No
	TB		No groups		Yes
Round 2	**All**	Planning	**2 (0.3)**	**21.5**	
	AIDS		**2 (0.3)**	**20**	**Yes**
	Malaria		**3 (0.4)**	**9.33**	**Yes**
	TB		No groups		No
	All	Implementation	**2 (0.5)**	**40**	
	AIDS		No groups		Yes
	Malaria		No groups		Yes
	TB		No groups		No
Round 3	All	Planning	No groups		
	AIDS		No groups		Yes
	Malaria		No groups		No
	TB		No groups		No
	All	Implementation	No groups		
	AIDS		No groups		Yes
	Malaria		No groups		No
	TB		No groups		No
Round 4	All	Planning	No groups		
	AIDS		No groups		No
	Malaria		No groups		No
	TB		No groups		No
	All	Implementation	No groups		
	AIDS		No groups		No

	Malaria		No groups		No
	TB		No groups		No
Round 5	**All**	Planning	**2 (0.3)**	**21**	
	AIDS		**2 (0.3)**	**21**	**No**
	Malaria		**2 (0.3)**	**21**	**No**
	TB		**2 (0.3)**	**21**	**No**
	All	Implementation	No groups		
	AIDS		No groups		No
	Malaria		No groups		No
	TB		No groups		No
Round 6	**All**	Planning	**4 (0.3)**	**10**	
	AIDS		No groups		No
	Malaria		**3 (0.3)**	**11.33**	**No**
	TB		**3 (0.3)**	**12.33**	**Yes**
	All	Implementation	No groups		
	AIDS		No groups		No
	Malaria		No groups		No
	TB		No groups		Yes
Round 7	All	Planning	No groups		
	AIDS		No groups		No
	Malaria		**3 (0.3)**	**29**	**Yes**
	TB		**3 (0.3)**	**11**	**No**
	All	Implementation	No groups		
	AIDS		No groups		No
	Malaria		**2 (0.3)**	**77**	**Yes**
	TB		No groups		No
Round 8	All	Planning	No groups		
	AIDS		**2 (0.3)**	**12**	**Yes**
	Malaria		No groups		No
	TB		No groups		Yes
	All	Implementation	**3 (0.3)**	**81.67**	
	AIDS		No groups		Yes
	Malaria		No groups		No
	TB		No groups		Yes
Round 9	All	Planning	No groups		
	AIDS		No groups		No
	Malaria		No groups		No
	TB		No groups		No
	All	Implementation	No groups		
	AIDS		No groups		No
	Malaria		No groups		No
	TB		No groups		No
Round 10	**All**	Planning	**3 (0.4)**	**31**	
	AIDS		**3 (0.3)**	**21**	**Yes**
	Malaria		No groups		Yes
	TB		**3 (0.3)**	**13.33**	**Yes**
	All	Implementation	No groups		
	AIDS		**3 (0.3)**	**18.67**	**Yes**
	Malaria		No groups		Yes
	TB		No groups		Yes

*According to Newman Girvan, real-world networks thought to contain modular structure generally have values of Q in the range [0.3, 0.7], which should provide a rough guide of acceptable modularity values

APPENDIX H Organizations by Network, Sector and Disease

H.1 PRE GLOBAL FUND SYSTEM – THREE DISEASE NETWORKS

Pre Global Fund Network Type of Organization – Percent of Total				
	Local Nonprofit	***IO***	***Public***	***Private (For Profit)***
Planning	23.6 (N=49)	49.0 (N=102)	24.5 (N=41)	2.9 (N=6)
Implementation	3.5 (N=38)	6.9 (N=75)	88.5 (N=958)	0.3 (N=3)

Pre Global Fund Network Type of Organization by Disease – Percent of Total												
	AIDS				**TB**				**Malaria**			
	Local Nonprofit	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***
Planning	32.5 (N=40)	43.9 (N=54)	20.3 (N=25)	3.3 (N=4)	14.0 (N=6)	48.8 (N=21)	34.9 (N=15)	2.3 (N=1)	7.1 (N=3)	64.2 (N=27)	26.2 (N=11)	2.4 (N=1)
Implementation	6.2 (N=29)	10.0 (N=47)	83.5 (N=391)	0.2 (N=1)	1.1 (N=4)	5.4 (N=19_)	93.5 (N=331)	NA	1.2 (N=3)	6.5 (N=17)	91.9 (N=239)	0.4 (N=1)

H.2 PLANNING NETWORK

Type of Organization – Percent of Total				
	Local Nonprofit	***IO***	***Public***	***Private (For Profit)***
Pre-Global Fund	23.6	49.0	24.5	2.9
Global Fund	20.6	25.1	47.3	7.0

Type of Organization by Disease (Average Percent of Total)												
	AIDS				**TB**				**Malaria**			
	Local Nonprofit	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***
Pre-Global Fund	32.5	43.9	20.3	3.3	14.0	48.8	34.9	2.3	7.1	64.3	26.2	2.4
Global Fund	22.0	30.2	40.3	6.1	20.9	21.4	49.7	8.0	17.8	20.1	54.0	8.0

H.3 IMPLEMENTATION NETWORK

Type of Organization – Percent of Total				
	Local Nonprofit	***IO***	***Public***	***Private (For Profit)***
Pre-Global Fund	3.5	6.9	88.5	0.3
Global Fund	18.0	15.4	65.0	3.7

Type of Organization by Disease (Average Percent of Total)												
	AIDS				**TB**				**Malaria**			
	Local Nonprofit	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***
Pre-Global Fund	6.2	10.0	83.5	0.2	1.1	5.4	93.5	0.0	1.2	6.5	91.9	0.4
Global Fund	32.7	23.1	38.9	5.4	9.0	5.1	83.9	2.0	6.1	8.2	84.9	0.8

APPENDIX I Types of Organizations by Network, Disease, Pre and Post Global Fund

I.1 PERCENT OF TOTAL ORGANIZATIONS

	Planning		**Implementation**	
	Pre Global Fund	***Global Fund***	***Pre Global Fund***	***Global Fund***
Central Government	17.5	33.4	2.6	7.0
Financial Services	0.5	1.3	0.1	1.1
Foundations	11.7	2.4	1.0	2.0
Hospitals	3.9	2.6	20.6	8.3
Institutes	8.3	3.5	3.2	6.9
International Organizations	11.2	8.5	1.4	2.1
Law Enforcement	NA	NA	19.6	6.0
Legislature/Political Party	NA	1.7	NA	NA
Local Government	1.0	2.8	43.4	40.7
Network	10.2	19.5	1.6	6.6
NGO/INGO	30.5	17.7	5.4	14.9
University	5.3	6.6	1.0	4.4

	AIDS				**Malaria**				**TB**			
	Planning		***Implementation***		***Planning***		***Implementation***		***Planning***		***Implementation***	
	Pre GF	***GF***	***Pre GF***	***GF***	***Pre GF***	***GF***	***Pre GF***	***GF***	***Pre GF***	***GF***	***Pre GF***	***GF***
Central Government	16.3	27.9	2.8	6.8	17.1	35.6	2.7	3.2	20.9	35.8	2.5	3.7
Financial Services	0.8	1.4	NA	1.2	NA	1.1	0.4	0.5	NA	0.9	NA	0.3
Foundations	10.7	4.1	1.1	2.8	14.6	0.6	1.2	0.5	11.6	0.5	0.8	0.3
Hospitals	3.3	1.7	31.6	15.3	4.9	2.9	1.5	1.4	4.7	3.7	21.4	16.6
Institutes	8.2	3.6	1.1	3.6	12.2	5.1	1.1	1.8	4.7	1.4	0.3	1.4
International Organizations	9.8	7.4	1.9	1.2	17.1	7.4	1.9	1.8	9.3	9.8	0.6	1.0
Law Enforcement	NA	NA	15.4	0.8	NA	NA	27.4	0.5	NA	NA	20.9	24.4
Legislature/Political Party	NA	1.4	NA	NA	NA	1.7	NA	NA	NA	1.8	NA	NA
Local Government	0.8	1.9	33.5	14.1	NA	3.4	59.8	80.5	2.3	3.3	48.0	33.9
Network	12.3	16.9	2.6	14.9	9.8	21.8	1.5	2.7	4.7	19.1	0.6	2.7
NGO/INGO	34.4	28.2	9.2	37.3	17.1	12.6	1.5	6.8	32.6	17.2	3.7	5.1
University	3.3	5.5	0.9	3.2	7.3	7.4	1.2	0.9	9.3	6.5	1.1	10.8

APPENDIX J Eigenvector Centrality by Network, Type of Organization and Disease

J.1 PLANNING NETWORK

Eigenvector Centrality by Type of Organization				
	Local Nonprofit	***IO***	***Public***	***Private***
Pre-Global Fund	0.23	0.24	0.25	0.04
Global Fund	0.32	0.28	0.40	0.40

Eigenvector Centrality by Type of Organization (Average)												
	AIDS				**TB**				**Malaria**			
	Local Nonprofit	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***
Pre-Global Fund	0.19	0.19	0.22	0.07	0.47	0.44	0.32	NA	0.27	0.20	0.24	0.02
Global Fund	0.25	0.27	0.27	0.33	0.40	0.39	0.48	0.44	0.37	0.30	0.47	0.43

J.2 IMPLEMENTATION NETWORK

Eigenvector Centrality by Type of Organization				
	Local Nonprofit	***IO***	***Public***	***Private***
Pre-Global Fund	0.20	0.16	0.06	0.05
Global Fund	0.26	0.17	0.10	0.14

Eigenvector Centrality by Type of Organization (Average)												
	AIDS				**TB**				**Malaria**			
	Local Nonprofit	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***	***Local Nonprofit***	***IO***	***Public***	***Private***
Pre-Global Fund	0.15	0.16	0.05	0.07	0.42	0.17	0.08	NA	0.34	0.15	0.05	0.02
Global Fund	0.19	0.16	0.18	0.15	0.36	0.19	0.09	0.20	0.13	0.11	0.11	0.10

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