

# **UNPACKING HEALTH AID EFFECTIVENESS**

By

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Thesis submitted for the Degree of  
Doctor of Philosophy

University of East Anglia  
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© September 2013

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## ABSTRACT

This thesis provides an unpacked analysis of health aid effectiveness using Mozambique as a case-study. It comprises of three main papers of independent but related research.

The first paper adds to the literature by employing a new model to study the impact of health aid on health outcomes. By taking into account the heterogeneity that exists in the amount of health aid received between Mozambican provinces, a multilevel model is specified. After recognizing significant variation of health outcomes between provinces, I found no statistical evidence that health aid was a cause of those variations.

The second paper provides a systematic analysis of donors' health aid disbursement decisions in-country. Using a game theoretic framework and grounded in qualitative evidence from Mozambique, this paper shows that donors have allocation tactics other than state-to-state aid to pursue their goals which are translated into opting for alternative channels of delivery. Simultaneously, this research acknowledges the non-passive role of the recipient country, i.e., donors' decisions of how to allocate aid are mediated by the recipient's response to their actions. This chapter suggests that recipient-donors' strategic interactions are crucial to understand donors' allocation behaviour and have direct consequences for aid effectiveness.

The last paper explores empirically and theoretically aid coordination efforts of aid agencies. After providing an insight into the implementation of coordination in the health sector in Mozambique, this chapter explores why different agencies differ in their motivations to coordinate, based on the distinction between public and private good properties of coordination. Finally, using a collective action theory framework and aided by [Schelling's \(1973\)](#) diagrams, this chapter illustrates why it is so hard to coordinate. My results show that individual incentives to coordinate are neither strong nor stable. Furthermore, the success of coordination depends, inter alia, on the number of agencies that perceive coordination as a public versus private good and the role and involvement of the lead donor and the recipient country.

*This thesis is dedicated to my grandparents Maria Cecília, Augusto, Maria Madalena and Gabriel.*

*It was conceived with the unconditional encouragement of my parents Bé and João who have always inspired a lifelong pursuit of learning and work-life balance.*

*It is offered to my husband Francisco who has always inspired me the values of knowledge, love and compassion.*

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## **ACKNOWLEDGEMENTS**

This thesis would have been more difficult and taken longer to complete were it not for the advice, guidance and encouragement of a few good and special people. First and foremost, I would like to deeply thank my supervisors Arjan Verschoor and Peter Lloyd-Sherlock for their outstanding support throughout my time as a PhD student at the University of East Anglia. I begin by thanking them for their truly insightful comments during these three years and for their scrutiny on the contents of this thesis. More importantly, they enriched my experience as a PhD student: their approach was both professional and friendly, their feedback was speedy, timely, coherent and continuous, and their support was motivational and deeply constructive. Arjan and Peter, each one working in their own fields, formed an inspiring synergetic supervisory team whose combination was critical for the development of this thesis. Finally, I thank them for their supervisory approach: easy going but attentive, open-minded while encouraging creative and independent thinking. Thank you for trusting in my work while being thoughtful throughout.

Chapters 3 and 4 would not be possible without the help and contribution of a few people in Mozambique. I am grateful for the interest, time and valuable information provided by all informants, without exception. I felt extremely welcomed by the international community in Mozambique who made my time there professionally and personally gratifying. I am especially grateful to Carlota Baptista da Silva who introduced me to a considerable number of people and shared with me priceless contacts and information. I thank Carlota as well for her friendship and for making my time in Mozambique more fun. My gratitude goes as well to the Dominicans Sisters for providing me with a home and to all the Portuguese friends who have enriched my time in Maputo. My profound appreciation and friendship goes to Paula and Luís Rocha Brito who were a very important support while in Maputo. I thank them for their kindness and love.

All chapters benefited substantially from the comments, discussions and contributions of seminars, workshops and conferences at various points in their

development. I gratefully acknowledge the financial support from the Portuguese Foundation for Science and Technology (FCT).

I am deeply indebted to my brother João for his constant support, encouragement and advices throughout the PhD. In particular, I thank him for offering to proof-read this thesis and for his valuable comments on the econometric parts. More importantly, his example as a flourishing academic and hard working professional was crucial for my enrolment in the PhD and further motivation all the way through.

My gratitude goes to my brother Diogo as well, and to all my extended family in particular my aunt Conceição, and my grandmothers Maria Cecília and Maria Madalena who even far away, have always been present all the way through and remain crucial elements of my life.

I would like to express my heartfelt gratitude to my parents Bé and João, for their unconditional love, care, support and encouragement and for always trusting in my decisions along the way. From early on I embraced new challenges and adventures causing them worries, yet their immense support and involvement throughout my personal journey prevailed. Beyond this, is the unquantifiable “backstage support” that I received especially during the final writing of this thesis.

Last but not least, I am genuinely grateful to my husband Francisco, for sharing with me this adventure. I start by thanking him for his long hours proof-reading this thesis. More importantly, I am deeply thankful for his authentic interest in listening to my ideas, for shaping and challenging my views, for his endless support, patience and love and for believing in me when the going was tough. Thank you for always being on my side.

## ACRONYMS AND ABBREVIATIONS

ACA	Annual Joint Review
BIL	Bilateral Organization
CBO	Community Based Organization
CCC	Joint Coordination Committee
CCS	Sector Coordination Committee
CF	Common Fund
CHW	Community Health Worker
CNCS	National Aids Council ( <i>Conselho Nacional de Combate à Sida</i> )
CSO	Civil Society Organization
CUT	Single Treasury Account ( <i>Conta Única do Tesouro</i> )
DDS	District Directorate of Health ( <i>Direcção Distrital de Saúde</i> )
DPS	Provincial Directorate of Health ( <i>Direcção Provincial de Saúde</i> )
E-SISTAFE	Electronic State Financial Administration System
FP	Focal Partner
GAVI	Global Alliance for Vaccines and Immunisation
GBS	General Budget Support
GHI	Global Health Initiative
GFATM	Global Fund Against AIDS, Tuberculosis & Malaria
HoC	Head of Corporation
HoM	Head of Mission
HPCF	Health Partners Coordination Framework
HPG	Health Partners Group
IHP+	International Health Partnership
iNGO	International NGO
INGO	Local NGO
MDG	Millennium Development Goal
MFA	Ministry of Foreign Affairs
MoH	Ministry of Health
MoU	Memorandum of Understanding
MUL	Multilateral Organization
NAIMA	Network of Organizations working in Health and HIV/AIDS

NGO	Non-Governmental Organization
ODAMOZ	Official Development Assistance to Mozambique database
Paris	Paris Declaration of Aid Effectiveness
PEPFAR	(U.S.) President's Emergency Plan for AIDS Relief
PES	Economic and Social Plan
PESS	Health Sector Strategic Plan ( <i>Plano Estratégico do Sector da Saúde</i> )
PPF	Pre Partners Forum
PPP	Public-Private Partnership
PROSAUDE	Common Fund for Support to the Health Sector
PS	Permanent Secretary
SBS	Sector Budget Support
SPE	Subgame Perfect Nash Equilibrium
SWAp	Sector Wide Approach
TB	Tuberculosis
ToR	Terms of Reference
UN	United Nations
U.S.	United States of America
VF	Vice Focal
WG	Working Group

# KEY DEFINITIONS

Aid	External resources provided to countries as grants, loans, subsidies or in-kind donations (synonyms: development assistance, external assistance, development aid)
Official Development Assistance (ODA)	Official financing administered with the promotion of the economic development and welfare of developing countries as the main objective and which are concessional in character. ODA flows comprise contributions of donors' government agencies (bilateral ODA) and of multilateral institutions (OECD, 2008a).
Health Aid	Aid directed to the health sector. It includes all financial and in-kind contributions from aid agencies (synonyms: development assistance for health (DAH), aid to/for health).
Aid Agency	Any organization that provides financial or in-kind contributions. Different types of agencies include bilateral and multilateral donors, private foundations, international NGOs and global health initiatives (synonym: aid organization).
Aid Effectiveness	Delivering aid in a way that maximizes its impact on development and achieves value for aid money (OECD, 2010).
Impact	Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended (OECD/DAC, 2004).
Health Outcome	An impact indicator that measures the longer-term and more widespread health changes in the society. Often these are captured via national sector or subsector statistics (OECD/DAC, 2000) (synonyms: health indicator, impact indicator)
Result	The output, outcome or impact (intended or unintended, positive and/or negative) of a development intervention. (OECD/DAC, 2004).
Channel of Delivery	It is the first implementing partner. It is the entity that has implementing responsibility over the funds and is normally linked to the extending agency by a contract or other binding agreement, and is directly accountable to it (OECD, 2007).
Projects	Interventions comprising pre-specific ring-fenced activities developed to reach a certain short to medium term objective, with a specific budget and a limited timeframe. Projects are subject to their own plan and budget and to own administrative, staffing, accounting and reporting procedures. In some cases, projects include the provision of technical assistance in the form of foreign personnel (MoU 2009 in MPD, 2011).

Direct Budget Support (DBS)	A method of financing a partners country's budget through a transfer of resources from a donor to a partner government's treasury (in Mozambique funds are deposited in the Single Treasury Account = ON-CUT). The funds thus transferred are managed in accordance with the recipient's budgetary rules and procedures defined by the government. This definition includes General Budget Support and Sector Budget Support (OECD/DAC, 2006).
General Budget Support (GBS)	Is a sub-category of DBS whereby the dialogue between the government and the partners concentrates on overall policies and on budgetary priorities (OECD/DAC, 2006). In Mozambique, GBS is made operational through the G19, who are the Programme Aid Partners (PAPs) (MPD, 2011).
Sector Budget Support (SBS)	SBS, also called "Common Funds", are a sub-category of DBS which dialogue between the government and its partners focuses on sector-specific concerns rather than an overall policy and budget priorities (OECD/DAC, 2006).
Programme-Based Approach (PBA)	A way of engaging in development cooperation based on the principles of coordinated support for a locally owned programme of development, such as a national poverty reduction strategy, a sector programme, a thematic programme or a programme of a specific organization (OECD/DAC, 2006).
Sector Wide Approach (SWAp)	A programme-based approach operating at the level of an entire sector. Relying on common arrangements for budgeting, disbursement, accounting, procurement and reporting is a key objective for any SWAp (OECD/DAC, 2006).
Ownership	Partner countries exercise effective leadership over their development policies, and strategies and coordinate development actions (OECD, 2008b).
Alignment	Donors base their overall support on partner countries' national development strategies, institutions and procedures (OECD, 2008b).
(Health) Aid Coordination	Any activity or set of activities, formal or non-formal, at any level, undertaken by recipients in conjunction with donors, individually and collectively, which ensures that external inputs to the health sector enable the health system to function more effectively, and in accordance with local priorities, over time (Buse and Walt, 1996).
Aid Agencies' Coordination	Aid agencies maintain their individual programmes but try to work with each other in order to maximize cooperation and minimize competition (Acharya <i>et al.</i> , 2006) (synonyms: horizontal coordination, harmonization).
Fragmentation	The extent of dispersion in the sources of aid received by an aid recipient (Acharya <i>et al.</i> , 2006).

# CHAPTER 1

## INTRODUCTION

*"If you spend your own money on yourself, you are very concerned about how much is spent and how it is spent.*

*If you spend your own money on someone else, you are still very much concerned about how much is spent, but somewhat less concerned about how it is spent.*

*If you spend someone else's money on yourself, you are not too concerned about how much is spent, but you are very concerned about how it is spent.*

*However, if you spend someone else's money on someone else, you are not very concerned about how much is spent or how it is spent."*

--Milton Friedman

### 1.1 CONNECTING THE AID LITERATURE

The literature on aid effectiveness arises from a fundamental question: Does aid work? The debate around this subject focuses essentially on three positions: i) more aid, ii) less aid (also called "problem aid") and iii) aid under certain conditions (see [de Haan, 2009](#); [Tierney et al., 2011](#) for a broad discussion on the aid effectiveness debate).

Calling for increased aid has been common since the 2<sup>nd</sup> World War ([de Haan, 2009](#)) with a range of scholars advocating for the benefits of aid. The report by the United Nations (UN) Millennium Project led by Jeffrey Sachs called for aid to all developing countries to rise from \$80 billion in 2005 to \$195 billion by 2015 ([Sachs, 2005a](#)). [Sachs \(2005b\)](#) has been one of the major advocates for increasing the levels of aid arguing that aid is crucial for helping poor countries to escape from poverty traps. He argues that without aid, poor countries will not be able to prosper. Similar thoughts were shared by [Stiglitz \(2002\)](#), [Stern \(2002\)](#), [Addison et al. \(2005: 83\)](#), among others, with the latter arguing that "poverty would be higher in the absence of foreign aid".

The debate on aid effectiveness has developed essentially around the relationship between aid and growth. Proponents of aid have shown that there is a positive



relationship between aid and growth (Hansen and Tarp, 2000 and 2001; Arndt *et al.*, 2010, etc.). This finding is not supported by others who do not believe that “aid buys growth” (Easterly, 2003) or find it difficult to discern any significant effect of aid on growth (Boone, 1996; Rajan and Subramanian, 2008). Methodological and ideological approaches are in the base of such opposite findings (Moreira, 2005).<sup>1</sup> Critics of aid have made strong claims that aid does not work. Hancock (1989) has long ago pointed out that the “lords of poverty” – name given to the highly paid aid workers – should depart and the aid business should be abolished. Easterly (2006: 4) calls it a “tragedy” and asks why “the West spent [U.S.] \$2.3 trillion of foreign aid over the last five decades and still had not managed to get 12-cent medicines to children to prevent half of all malaria deaths.” Mosse and Lewis (2006) share the same thought while referring to the lack of progress in a wide range of development indicators. These arguments are completely endorsed by Moyo (2009: 47) who adds that “aid is no longer part of the potential solution, but part of the problem - in fact aid is the problem”. Calling for the Africans to start representing themselves without western intervention, Moyo (2009) argues that is time to stop pitying Africa. According to Easterly (2006) the current aid system has been driven by decisions of “planners” who made aid unproductive, since there is a huge disjoint between them and the “searchers” who have the on-ground knowledge in recipient countries.

The other strand of the literature favours aid, under certain conditions. Estimates from a World Bank report (World Bank, 1998: 2) refer that “with sound country management, 1 percent of GDP in assistance translates into a 1 percent decline in poverty and a similar decline in infant mortality. In a weak environment however, money has much less impact aid.” Focusing essentially on the quality of governance of recipient countries, Collier and Dollar (2002) advocated for a selectivity approach where aid should be delivered to countries able to use aid effectively. Burnside and Dollar’s (2000) influential study showed that aid works better in a good policy environment. Soon these claims were contested (Hansen and Tarp, 2001; Easterly *et al.*, 2004; Dalgaard *et al.*, 2004). These scholars asserted the difficulties of finding a causal effect between aid and growth, while

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<sup>1</sup> See for instance Clemens *et al.* (2012) for a review on the aid-growth debate.

considering the interactions between aid and policy environment. This literature was soon linked with conditionalities with a variety of scholars questioning its effectiveness (Crawford, 1997; Collier *et al.*, 1997; Killick, 1997; Gibson *et al.*, 2005).

The distinguishing factor between more aid/less aid and conditional aid literature is that the former is interested in knowing exactly whether aid works or not and by what amount - the *quantity* of aid, while the latter is particularly interested on how aid is given - the *quality* of aid. In order to advance deeper explanations on the poor quality of aid, new inquiries emerged at the structural level giving rise to a new, but still little researched, subset strand of the literature which includes topics on aid fragmentation, proliferation of projects and multiplication of aid channels (e.g., Birsdall, 2005; Acharya *et al.*, 2006; Anderson, 2011; among others).

Calls for increasing aid coordination have taken place at both policy and research level (OECD, 2005/2008) with research showing that fragmentation and proliferation hamper aid effectiveness (Djankov *et al.*, 2009) and imply a number of costs for the recipient and donors (Acharya *et al.*, 2006). However, reality is different from prescription: aid fragmentation and proliferation persist and little progress has been made on coordination efforts (Aldasoro *et al.*, 2010). Facing the facts, some researchers started to inquire whether coordination is achievable (Annen and Moers, 2012; Steinwand, 2013).

Scholars became recently more interested on the strategic interactions between different aid agencies and between them and the recipient countries (Torvick, 2005; Steinwand, 2013). The incentive structure underlying these players' interactions has a bridge with the long-standing aid allocation literature. Seeking to find explanations for donor behaviour, it draws on agencies' motives to provide aid in the first place. In this regard, the debate starts broadly on whether donors have self-interested or altruistic motives (Burnside and Dollar, 2000; Alesina and Dollar, 2000). This literature considers that beyond poverty alleviation, donors also use aid as a tool for foreign policy influence. Donor allocation decisions, which are directly translated into specific aid modalities, choice of aid delivery channels and geographic distribution of aid within a country, have a huge impact on aid effectiveness (Tierney *et al.*, 2011).

As a result of the growing critiques of aid, donors are pressured for measuring impact of their projects while striving for short-term results: that influences their choice of modality, the relationship with the recipient country (Dietrich, 2011) and the work developed on the ground by the “searchers”, like NGOs, who, striving for financial survival are forced to follow donors’ rules (Edwards and Hulme, 1996). Calls for better assessments gave rise to a new field of analysis that covers a wide spectrum: at one end there are numerous studies evaluating the impact of specific agencies’ projects, at the middle new programmes and sector wide approaches have developed their own form of evaluation, and on the other end it folds back to the macro level literature which measures the impact of aid using cross-country analysis (Bigsten *et al.*, 2006).

## 1.2 HEALTH AID EFFECTIVENESS

Growth has been the main focus on aid effectiveness studies. However, with the great volume of development assistance for health (DAH), scholars and practitioners start questioning its effectiveness. According to the IHME (2012) aid devoted to the health sector has risen from US\$5.74 billion in 1990 to US\$28.1 billion in 2012 (real 2010 US\$). Around 2002 there was a steep increase on aid with the insurgence of global health partnerships<sup>2</sup> and private foundations devoted to a number of vertical initiatives in which HIV/AIDS took the biggest share of DAH. At the same time in face of the contradictory findings from aid-growth relationships, it was argued that aid effectiveness should not be measured by its impact on GDP growth but rather on social indicators (Boone, 1996). Advocates of “more aid” believe that foreign aid has been having an enormous impact on health by saving lives, providing vaccines and improving health services (Levine *et al.*, 2004). Sachs (2005b), when referring particularly to health aid, highlights that at current levels it is impossible for health ministries in Africa to maintain a health care system. Mishra and Newhouse (2009) using data from 1975 to 2004 show empirically that doubling health aid decreases infant mortality by

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<sup>2</sup> Also called global health initiatives (GHI), they are typically programmes targeted at specific diseases and are supposed to bring additional resources to health efforts. Some of the more prominent GHI include the Bill and Melinda Gates Foundation, the Global Fund Against Aids, Tuberculosis & Malaria (GFATM), the Global Alliance for Vaccines and Immunisation (GAVI) and the President’s Emergency Plan for Aids Relief (PEPFAR) (Martínez-Álvarez and Acharya, 2012).

2% in a subsequent five-year period. Ambitiously, they estimate that DAH might have saved 170,000 lives at the costs of US\$ 76 million (\$432/life). [Fenny and Ouattara \(2013\)](#) provide evidence that increases of health aid are linked with improvements on child health promotion, using immunizations as proxies. However, positive findings are not universal: [Kosack and Tobin \(2006\)](#) found no impact of aid in improving infant mortality or life expectancy, [Williamson \(2008\)](#) looking specifically at DAH did not find any significant effect of DAH on mortality. [Wilson \(2011: 2032\)](#) corroborates these findings showing that the effectiveness of DAH has not increased over time and suggesting that DAH appears to be “*following* success rather than *causing it*”, i.e. health aid has been going to the states that had greatest reductions in mortality in the past years, which might justify the disappointing results of aid effectiveness.

Questions about the process of health aid-giving have also taken place. A strand of the literature looks at the recipient’s domestic efforts to increase the internal health budget, while focusing on issues of fungibility and additionality of aid<sup>3</sup>. Another recent field of inquiries looks at the pros and cons of different modalities of aid giving, focusing essentially on a discussion of funds provided through the government (such as general budget and sector budget support) versus project aid (see [Martínez-Álvarez and Acharya, 2012](#)).

Due to its above average aid flows, the health sector has become the tracer sector<sup>4</sup> in terms of aid effectiveness and coordination ([DSW, 2011](#)). The huge increase of health aid has been accompanied by a proliferation of actors each one with its own motivations, objectives and strategies ([Martínez-Álvarez and Acharya, 2012, 2012](#)). Lack of coordination has become a critical issue. In practice, harmonization means “coordinating among agencies to ensure that two wells are not built side by side in the same place; or that two different agencies do not vaccinate the same

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<sup>3</sup> Fungibility refers to the fact when aid substitutes rather than supplements local spending ([Foster and Leavy, 2001](#)). Additionality refers to the expectation that the domestic funding matches the increased in donor funding ([Brown et al., 2006](#)). Fungibility differs essentially from additionality as there is an expectation of some type of optimal behaviour. See [Martínez-Álvarez and Acharya \(2012\)](#) for a more complete explanation of these concepts and review of this literature.

<sup>4</sup> According to [OECD \(2012\)](#) looking at aid effectiveness through the lens of a sector can provide valuable information for the aid effectiveness agenda. The health sector specifically is particularly relevant since it highlights many of the development challenges today in different areas (fragmentation, innovative financing for development, and achievement of the MDGs, among others) and due to its complexity many lessons can be useful for aid effectiveness framework.

children twice inadvertently damaging them” (Woods, 2011: 5). However, there is still a long way to go.

This research argues that there is a need to look at the ground, using a bottom-up approach to research aid effectiveness. It focuses on the structural level of aid, by delving deeper on its delivery and implementation on the ground. By doing so, its main goal is to uncover some missing pieces in the ‘factors-affecting-the-effectiveness-of-aid’ puzzle.

### 1.3 DISAGGREGATING TO A SECTOR AND COUNTRY LEVEL

Aid (and health aid) effectiveness has been approached from different angles; however, they share a common ground: a macro or micro level of aggregation. On one hand cross-country analysis takes place, on the other the focus has been on measuring impact of specific small projects. The present research takes yet another angle. It seeks to unpack aid effectiveness, by disaggregating the analysis to a single sector and a single country, what can be called a *meso* level of analysis. This research is motivated on advancing some insight on possible explanations of the celebrated micro-macro paradox suggested by Mosley (1987) that questioned why aid seems effective at the micro level while showing disappointing results at the macro level. Case studies on the roots of aid effectiveness are needed if improvements are to be made.

The focus on the health sector has several purposes: (i) there is the need to conduct more research on sector-target aid in a given country, (ii) to understand whether the micro-macro paradox - where aid is effective at a micro level but not as a macro level – does apply to the case of health aid in a given country and because (iii) a better understanding of the results of health-target aid can help to evaluate the effects of development assistance in general.

Mozambique was the natural and immediate choice of case study for evaluating aid effectiveness. This country has been receiving aid for 25 years and is considered by the international community as a “reliable partner to work with” (Commins *et al.*, 2009: 149). Mozambique has lived through decades of crisis caused by war,

political instability, economic crisis, conflict situations, natural disasters, etc. (African Development Bank, 2006) and therefore international aid has been playing an active role in several sectors. Since the Peace Agreement in 1992, Mozambique remains a successful example of post-conflict reconstruction with an impressive economic growth averaging eight per cent in the past 15 years (DSW, 2011). However, it is still one of the poorest countries in the world, ranking 185 out of 186 in terms of human development (UN's Development Index UNDP, 2013) allied with a bottom dozen place among all countries in terms of GDP per capita per year, with a value of less than 1000 US\$ (in 2005 purchasing power parity terms) (IMF, World Bank and WHO in DSW, 2011).

Mozambique is one of the countries that receives more international aid around the world, with the health sector in particular accounting for the largest share of sectoral assistance (Arndt *et al.*, 2007). According to the last report of the IHME (2012) Mozambique is among the 10 top recipients of total DAH from 2008-2010 placed at number 8 with a value of \$1.22 billions (real 2010 US\$)<sup>5</sup>. The huge amounts of health aid flows made the health sector a tracer sector in terms of coordination mechanisms. However, while showing an active response in endorsing the calls for aid effectiveness and advocating for strengthened coordination and harmonization, the implementation of those structures suffer from some major issues (see Appendix A for a summary of Mozambique's historical context and its impact on health-system related dimensions, in particular external aid and coordination).

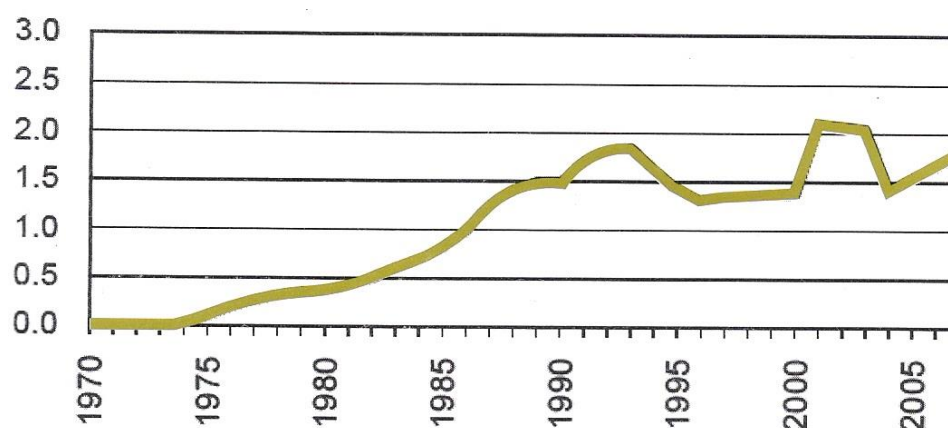
Finally, being a Portuguese myself, also enhanced my motivation and interest to research this particular country, a former Portuguese colony with which Portugal still holds strong economic and diplomatic relations.

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<sup>5</sup> This DAH estimation includes all financial and in-kind contributions from aid organizations including bilateral and multilateral agencies, private foundations (U.S. based), international NGOs (U.S. based) and global health initiatives.

## 1.4 MOZAMBIQUE AND INTERNATIONAL (HEALTH) AID AT A GLANCE

Mozambique belongs to a group of countries that has been receiving a considerable amount of donor funds. [Figure 1.1](#) shows the evolution of foreign aid from 1970 to 2007 demonstrating an increasing trend for official development assistance received by Mozambique.



**Figure 1.1 Evolution of the ODA received by Mozambique 1970-2007 (USD billions).**

(Source: OECD-DAC, in *MPD, 2011*)

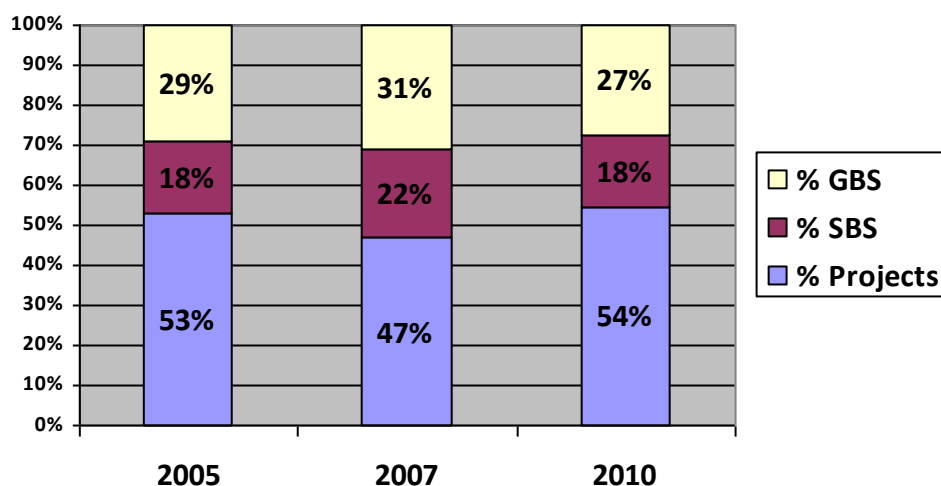
According to data from OECD DAC, Mozambique is in 2<sup>nd</sup> place among the top countries for number of aid projects ([Table 1.1](#))

**Table 1.1 Top ten countries for number of aid projects, 2007, disbursement data**

Recipient	Number of Aid Projects
Iraq	4162
<b>Mozambique</b>	<b>2409</b>
India	2122
Uganda	2110
China	2106
Zambia	2105
Indonesia	2039
Ethiopia	1840
Vietnam	1763
Tanzania	1601
<b>World average</b>	<b>601</b>

(Source: *Frot and Santiso (2009)*, based on OECD-DAC data.)

Figure 1.2 demonstrates the composition of the aid portfolio disaggregated by group of donors in Mozambique. In 2010, donors disbursed about 27% of funds through general budget support (GBS) and 18% through sector budget support (SBS). The main bulk of aid is still disbursed through projects that account 54% of total ODA.



**Figure 1.2 Composition of portfolio by aid modality on 2010 disbursements.**

(Source: MPD, 2011)

The two largest common funds (with highest volume of funding) for the sectors are for education (11 partners) and health (13 partners) (see Table 1.2)

**Table 1.2 Sector Budget Support 2007-2011, commitments, USD millions.**

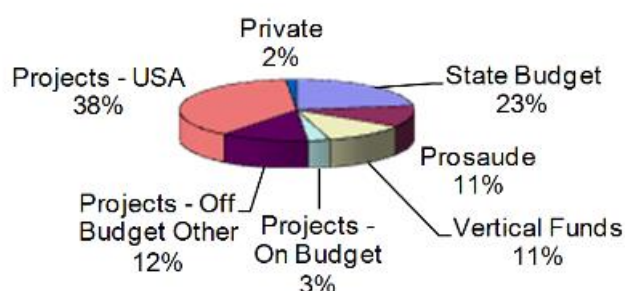
Programmes	2007	2008	2009	2010	2011	Total	Number of donors (2010)	As % of total SBS
Education (FASE)	55.7	71.6	142.6	111.1	85	466	11	32.7%
Health (PROSAUDE)	89	70	94.7	85.6	75.3	414.6	13	29.1%
Agriculture (PROAGRI)	37.7	38.5	43.2	42.6	26.1	188.1	9	13.2%
Roads (PRISE)	35.8	24	30.6	36.2	10	136.6	5	9.5%
HIV/AIDS (CNCS)		21.6	19.2	4.2	4.3	49.3	5	3.4%
Water (ASAS)	5.2	6.3	9.9	11.0	1.4	33.8		2.3%
Rural Water and Sanitation (PRONASAR)					13.4	13.4	5	0.9%
Others						122.6		8.6%
<b>TOTAL</b>						<b>1424</b>		

Note: This table summarizes commitments since 2007 of various sector budget support (SBS) programmes, also called common funds and the number of donors' signatories of the specific agreement in 2010.

(Source: MPD, 2011)



Although education leads the first place in terms of common funds, PROSAUDE only accounts for 11% of the total health budget. The health sector in Mozambique is mainly financed by vertical initiatives, projects and private funds (66%). Particularly noteworthy is the amount of projects financed by the United States of America that were estimated to account for 38% of the total health envelope (see Figure 1.3).



**Figure 1.3 Total financing for the health sector (on and off budget), 2009**

(Source: CIDA (2009), Health Budget 2009)

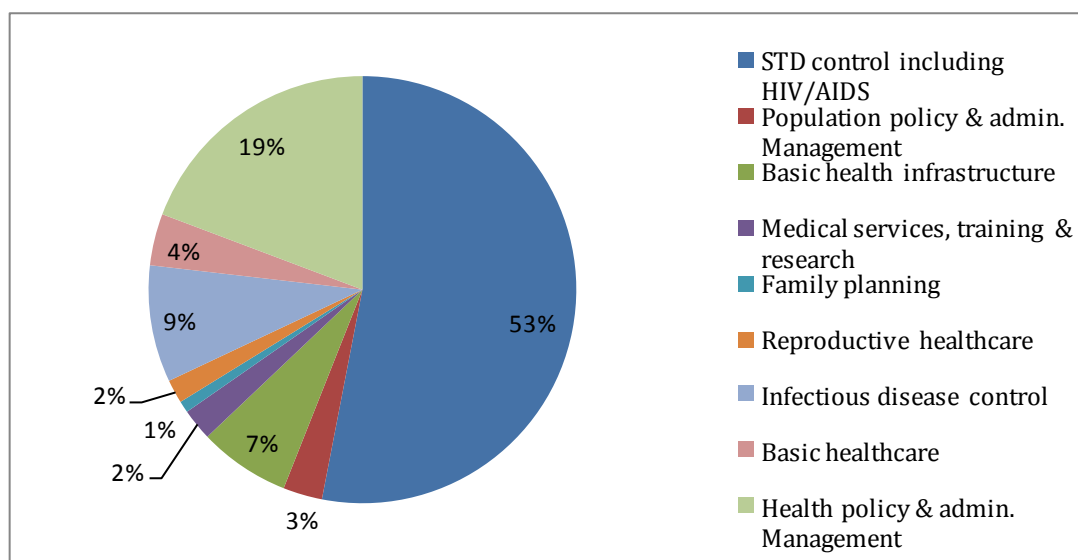
Table 1.3 shows the individual aid contributions of the various development partners in the health sector in Mozambique and reveals that the three largest donors to Mozambique from 2006 to 2008 were the United States of America, the Global Fund and Ireland.

**Table 1.3 Top Ten Donors to the Health Sector in Mozambique, average in USD millions, 2006-2008**

Donor Name	USD Million	As a share of total aid to health for the selected recipient, %
All Donors	408.2	100
United States	152.5	37.4
Global Fund	48.1	11.8
Ireland	28.1	6.9
Denmark	24.7	6
EC	21.6	5.3
Netherlands	17.7	4.3
Spain	12.5	3.1
United Kingdom	12	2.9
Belgium	9.6	2.4
Canada	9.6	2.3

(Source: OECD Health Focus Charts in DSW, 2011)

In terms of health subgroups, HIV has been disproportionately funded mainly due to the fact that the largest funding agency, the USA, has been systematically prioritizing this area (see Figure 1.4 for a chart on health aid by subgroups).



**Figure 1.4 Health Aid by Subgroups, 2006-2008, USD millions.**

(Source: OECD Health Focus Charts in DSW, 2011)

## 1.5 RESEARCH OUTLINE

This research focuses essentially on three main factors/determinants of health aid effectiveness<sup>6</sup>:

1. Distribution of health aid in-country
2. Aid agencies' disbursement decisions and relationship with the recipient country
3. Coordination between aid agencies

This research is guided by three specific questions linked with the three determinants:

1. Do differential amounts of health aid explain different health outcomes at the province-level?

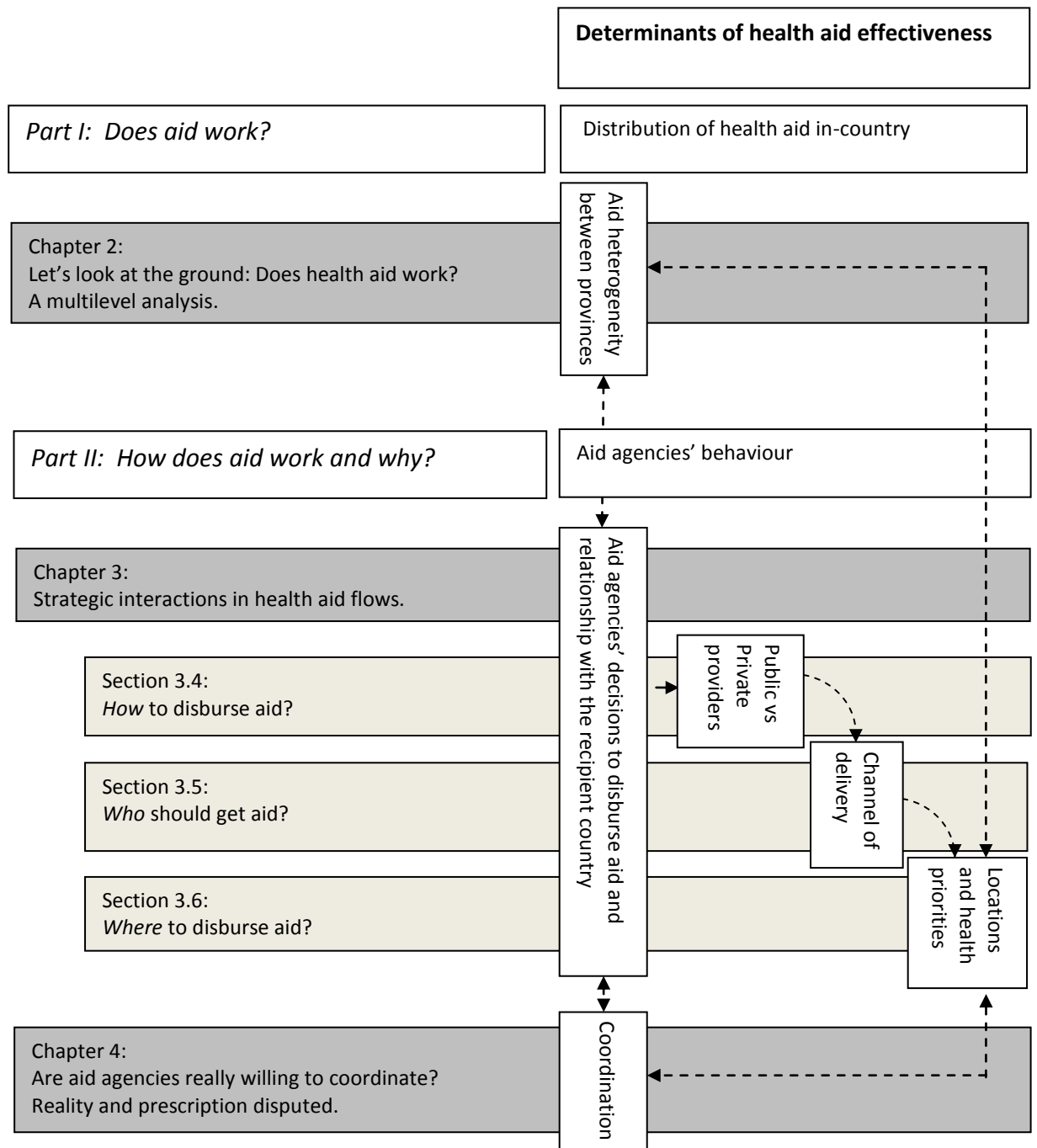
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<sup>6</sup> Aid effectiveness is here defined as "delivering aid in a way that maximizes its impact on development and achieves value for aid money" (OECD, 2010: 1).

2. How do aid agencies decide to disburse health aid in-country?
3. Why do aid agencies have difficulty in coordinating their efforts?

The research is divided into two main parts. The first one, comprised by Chapter 2 is framed within the debate of whether aid works or not, thus focusing on the *quantity* of aid. In particular it asks whether the disbursement of health aid in-country is a factor affecting the effectiveness of aid. The second part includes Chapters 3 and 4 and focuses on how aid works, thus referring to the *quality* of aid. Chapter 3 asks: How do aid agencies decide to disburse aid in-country? It considers the DAH relationships between aid agencies and the recipient country. It is divided into three sub-chapters each one asking: i) how to disburse aid? (section 3.4) ii) who should get aid? (section 3.5) and iii) where to disburse aid? (section 3.6). The last part of the research comprising Chapter 4 asks: why is it so hard to coordinate?

This thesis comprises of three main papers (Chapters 2, 3 & 4) of independent but related research. Chapters 1 and 5 introduce and conclude the thesis, respectively. [Figure 1.5](#) illustrates how the different parts and chapters are linked. Part 1 focuses on understanding if differential amounts of health aid across provinces explain different health outcomes. Part 2 is motivated by the unequal distribution of health aid in-country and analyses why this heterogeneity occurs by focusing on a major determinant of aid effectiveness: aid agencies' behaviour. Specifically, Chapter 3 is dedicated on understanding aid agencies' decision to disburse aid in-country taking into account the relationship with the recipient country. Each subsection focuses on a different level of the aid chain: Section 3.4 looks at the type of provider (public or private); Section 3.5 disaggregates to the channel of delivery; Section 3.6 culminates by discussing the choice of locations and health priorities. Chapter 4 explores the difficulty in achieving an effective coordination.



**Figure 1.5 Analytical map of the research.**

*Note: Aid agencies/organizations refer to the major development actors including multilateral and bilateral organizations, global health partnerships and NGOs.*

## 1.6 RESEARCH APPROACH

This thesis provides an unpacked analysis of aid effectiveness using Mozambique and the health sector as a case-study. Each paper is set within a subset of the wider aid effectiveness literature while offering new insights from a country and sector-level perspectives. Chapter 2 starts from the ideological and methodological debates on the impact of aid on the recipient country, but escapes from the traditional aid-growth analysis in cross-countries to investigate the specific impact of health aid on health outcomes. Contextualized by the literature on conditionality and selectivity and extended to the aid allocation literature, Chapter 3 provides a systematic analysis on the interactions between aid agencies and the recipient country to show how they influence aid agencies' disbursement decisions and further outcomes ahead on the ground. Contrarily to the majority of the literature the focus here is on the financial flow in-country. This chapter extends the still rare, but growing, literature on aid interactions and negotiations while focusing on issues around aid modalities and channels of delivery. The last determinant of aid effectiveness covered in this thesis is the coordination of aid agencies (Chapter 4). The related literature includes topics on fragmentation and proliferation of projects that connects with the discourse on the underlying incentive structure of aid agencies while considering at the same time the interactions between different aid players.

The three determinants that are the focus of this research (distribution of aid, health aid decisions and coordination) by no means represent all potential factors influencing health aid effectiveness. However, they are cited very frequently in the literature and have, each of them, raised a considerable range of debates. Furthermore they are so wide in their form that they are inevitably and intrinsically linked with other areas of the aid effectiveness literature. Specifically in this thesis I made sure those links were evident, clear and well-structured. Broadly speaking, aid effectiveness factors can be examined under three categories: the aid recipient country, the aid donor and the quality of interactions between the recipient and donor (Howes, 2011). In this research I focus mainly on the last two, though providing occasionally references to the quality of the government (in this case the MoH) of Mozambique.

This research aims to contribute to opening the black box on aid effectiveness (Bourguignon and Sundberg, 2007) by asking *what*, *how* and *why* questions. A mixed-methods approach was the natural choice for informing such inquiries. Different methods are used to tackle different questions and a combination of both gives more insight than using one in isolation. According to Creswell (2002) mixed-methods lead to a more comprehensive research as they enable triangulation of research findings and promote complementary research.

Each paper has its own methodology. Chapter 2 uses quantitative methods only. It departs from a general hypothesis: *health aid has a positive impact on health outcomes* and uses multilevel models to test the validity of such statement. This chapter follows the typical structure of econometric studies: it starts with the literature review, followed by presentation of data and model specifications with the results being reported at the end.

Chapter 3 uses mixed-methods. It provides a systematic analysis of the strategic interactions between aid agencies and the recipient country. Qualitative analysis is used to conceptualize the identity and motivations of different actors, while game theory guided the explanation of their interactions. The theory developed in this chapter is grounded on qualitative evidence from fieldwork research in Mozambique. In order to properly understand the processes of aid agencies' decisions to disburse aid a *concurrent transformative strategy* is employed, i.e. in the data analysis the theory develops at the same time as the findings take place (Creswell, 2002). This means that quantitative and qualitative evidence converge in order to provide a comprehensive analysis of the research problem. In this type of strategy the information is integrated in the interpretation of the overall results. In addition, it is *transformative* since the research is guided by a specific theoretical framework, in this case game theory (Creswell, 2002).

The fourth chapter also uses mixed-methods. However, it follows a different structure: it first presents the findings from qualitative evidence and uses collective action and game theory to help with the interpretation of results. Creswell (2002) calls this form of mixed methods approach *sequential exploratory*. The purpose of this strategy is to use quantitative results to assist in the interpretation of qualitative findings; the primary aim of this strategy is therefore

to explore a phenomenon. This chapter also follows a *transformative* approach, since collective action theory is purposely chosen to explore the research question.

Even though Chapters 3 and 4 use the same methods, they differ widely in their approach, research focus and analytical framework. Both chapters provide examples of triangulation: firstly, different qualitative methods are used (interviews, observations, documentary analysis); secondly, they show how qualitative findings can be put together with theoretical frameworks to explain and further elucidate the same phenomenon. Using a mixed-methods approach also makes it possible to link and complement research findings. Whereas the quantitative evidence from Chapter 2 aims to test a general hypothesis, the qualitative findings and theory developed in Chapters 3 and 4 provide insight into the processes and mechanisms of health aid flows in the ground and the underlying motivations and incentives of different actors. Chapter's 2 findings motivated complementary research on the reasoning behind the underlying dynamics of aid effectiveness, i.e., Chapters 3 and 4 can be understood as possible explanations for the results on Chapter 2 - i.e. *why* health aid did not show significant impact on health outcomes. Departing from the premise that the distribution of aid is unequal across provinces, Chapters 3 and 4 explore some of the motives behind that pattern and justify the non-conclusive answer on the causal-effect relationship between aid and outcomes.

When situating the research in broad areas of academic inquiry, this thesis aims to complement existing quantitative and theoretical literature of aid effectiveness. That said, the use of qualitative evidence on Chapters 3 and 4 has an ultimate research purpose of advancing theoretical knowledge on aid agencies' behaviour, using game theory as a model of inquiry. Furthermore, Mozambique and the health sector are here presented as a case study for analysing aid effectiveness. Using Mozambique's example contributes to a better understanding of the determinants that impact on the effectiveness of health aid, which do not pretend to be only relevant and applicable to this specific country but aspire to allow some degree of extrapolation for more general and cross-country conclusions. Although I acknowledge that each context is unique, the theory developed in this thesis focuses essentially on aid actors' motivations, behaviour and strategy. At a

structural level, I would argue that aid actors and recipients everywhere face very similar constraints and objectives, which I have sought to elucidate through Mozambique’s case study. See [Table 1.4](#) for a summary of the research approach and contribution to research of each chapter.

**Table 1.4 Summary of research approach and relevance of research for each chapter.**

	<b>Chapter 2: Let’s look at the ground: Does health aid work? A multilevel analysis.</b>	<b>Chapter 3: Strategy interactions in health aid flows.</b>	<b>Chapter 4: Are aid agencies really willing to coordinate? Reality and prescription disputed.</b>
<b>Main research inquiry</b>	What? / If?	How? (and why)	Why?
<b>Research question</b>	Do differential amounts of health aid explain different health outcomes?	How do aid agencies decide to disburse health aid in-country?	Why is it so hard to coordinate?
<b>Methods, Analytical and Theoretical Framework</b>	Quantitative (multilevel model)	Mixed-Methods • data collection: interviews, observations, documentary analysis • data analysis and theoretical framework: game theory & grounded theory	Mixed-Methods • data collection: interviews, observations, documentary analysis • data analysis and theoretical framework: game theory - collective action ( <a href="#">Schelling’s (1973)</a> diagrams) & grounded theory
<b>Strategy</b>	Quantitative	Concurrent transformative	Sequential exploratory and transformative
<b>Structure of chapter</b>	Literature Review>Hypothesis>Testing> Results.	Contextual literature> Results, theory and literature integrated.	Contextual literature> Results> Theory> Interpretation> Explanation.
<b>Related literature</b>	Aid impact. Aid effectiveness.	Conditionality. Selectivity. Aid modality. Channel of Delivery. Aid interactions. Aid allocation. Aid effectiveness.	Coordination/Fragmentation. Proliferation. Aid interactions. Aid agencies’ incentives. Aid allocation. Aid effectiveness.
<b>Contribution*</b>	Empirical and methodological.	Empirical, methodological and theoretical.	Empirical, methodological and theoretical.

*Note: \* This will be discussed in detail in the conclusion of this thesis (Chapter 5).*



## 1.7 OUTLINE OF THE CHAPTERS

This thesis is structured as follows:

Chapter 2 adds to the literature in employing a new model to study the impact of health aid on health outcomes. By taking into account the heterogeneity that exists in the amount of health aid received between Mozambican provinces, a multilevel model is employed which allows to control for both individual and province-level variables. After recognizing significant variation of health outcomes between provinces I found no statistical evidence that health aid was a cause of those variations. However, the use of health services significantly increases the probability of child survival. Particularly interesting is the random effect of health services' utilization across provinces which suggest that some locations take more advantage of having those services than others. This finding points out that specific health interventions should be targeted to those provinces where the effect of health care utilization is marginally higher.

Chapter 3 provides a systematic analysis of donors' health aid disbursement decisions in-country. In this framework donors make sequential decisions at different levels of the decision tree model: 1) *how* to disburse aid, 2) *who* should get their aid, 3) *where* should aid be disbursed to? Using a game theoretic framework and grounded in qualitative evidence from Mozambique, this chapter shows that donors have allocation tactics other than state-to-state aid to pursue their goals which are translated into opting for alternative channels of delivery. Furthermore it recognizes that donors have different objectives and motivations which are translated into different decisions along the aid delivery chain. Simultaneously this research acknowledges the non-passive role of the recipient country, i.e., donors' decisions of how to allocate aid are mediated by the recipient's response to their actions. This chapter suggests that recipient-donors' strategic interactions are crucial to understand donors' allocation behaviour and have direct consequences for the effectiveness of aid.

Chapter 4 explores empirically and theoretically the efforts of aid agencies to coordinate with each other. Firstly it provides an insight into the implementation of coordination in the health sector in Mozambique as perceived by different

partners. Secondly, based on the distinction between public good and private good coordination, it explores why different agencies differ in their motivations to coordinate. Finally, based on a collective action theory framework and aided by Schelling's (1973) diagrams it illustrates why it is so hard to coordinate. My results show that individual incentives to coordinate are neither strong nor stable. The theory developed in this chapter suggests that the success of coordination depends, inter alia, on the number of agencies that perceive coordination as a public versus a private good and the role and involvement of the lead donor.

Chapter 5 synthesises the main findings of the analysis presented in this thesis while drawing the research together. It raises research and policy questions and provides lessons and policy recommendations that may be learnt from these findings.

## PART I: DOES AID WORK?

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## CHAPTER 2

### LET'S LOOK AT THE GROUND: DOES HEALTH AID WORK? A MULTILEVEL ANALYSIS

#### 2.1 INTRODUCTION

Although aid pessimism or 'aid fatigue' has been a persistent feature of debates about aid, aid is back on the international agenda in an era when the financial crisis is pressuring everywhere around the world. At the same time improvements should be made if aid is to be effective with the Millennium Development Goals (MDGs) still placing a target in the aid agenda.

Debates of the effectiveness and impact of aid have been present in the academic discourse for a long time and the question of whether aid works or not has been approached from different methodological as well as ideological perspectives. Specifically, the impact of aid has been evaluated (i) at micro and macro level, (ii) through cross-country regressions as well as case studies (iii) through the use of quantitative and qualitative methods (Bigsten *et al.*, 2006). At a micro level, the impact of aid started to be measured by project evaluations of specific projects financed by foreign aid. However, project evaluations were far from representative and did not provide any insights on the macroeconomic impacts of aid (*ibid*). In the 1990's, a voluminous literature on the macroeconomic impacts of aid emerged measuring the effects of aid on economic growth, savings and investment. This literature became very popular due to the use of cross-country panel data approach that made possible to control for a variety of variables (see e.g., Levy, 1988; Burnside and Dollar, 2000 and 2004; Hudson and Mosley, 2001; Easterly, 2003; *inter alia*). But while aid seemed to work at the micro level it was not necessarily the case at the macro level –the micro-macro paradox (Mosley, 1987).

When testing the impact of aid on macroeconomics variables, such as savings, investment and growth, scholars reached different conclusions. Some found aid to have a significant positive effect (Hansen and Tarp, 2000 and 2001; Moreira, 2005; Arndt *et al.*, 2010, Clemens *et al.*, 2012); while others did not find any significant effect, even in the presence of a sound environment (Boone, 1996; Easterly *et al.*,

2004; Rajan and Subramanian, 2008). This contradicts Burnside and Dollar's (2000) claim that the effect of aid on growth was dependent on a country's good policies. Different methodological and theoretical perspectives were appointed as explanations for the misleading macro results (Moreira, 2005). Attempting to explain the diverse effects of the macroeconomic impact of aid, Doucouliagos and Paldam (2005) reviewed 97 aid effectiveness studies using a meta-analysis technique and found that in aggregate terms, the average effect of aid is at best positive, but small and statistically insignificant.

Other argument for the disappointing results of most macro effectiveness studies is that GDP growth is not the right measure of aid effectiveness (Masud and Yontcheva, 2005). Boone (1996) referred that aid effectiveness should not be measured by its impact on GDP growth but rather on social indicators. Despite the poor results of studies on growth-aid relationships, Boone (1996: 317) provides evidence that "aid could still reduce poverty through either higher consumption of the poor or greater provision of services to the poor". This point is consistent with the advocates' view that foreign aid is believed to save lives by providing vaccines, eradicating deadly diseases and improving health services (Levine, 2004)<sup>7</sup> and that scaling up health aid will contribute to the accomplishment of the MDGs (Sachs, 2005).

However, evidence is scarce at the sector level of aggregation: most literature is focused on the effectiveness and impact of specific health interventions at the micro level while there is little systematic empirical evidence on how health aid affects health outcomes at a more aggregate level. Few studies have presented evidence on the effect of health aid on health outcomes and they did it using cross-country regressions.

Recently, Mishra and Newhouse (2009) provided the first empirical study to examine the effect of health sector aid on a key health outcome - infant mortality, suggesting that the 'micro-macro paradox' does not apply to the case of health aid, i.e., health aid leads to improvements in health outcomes. Mishra and Newhouse

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<sup>7</sup> See Levine (2004) for a sample of public health programs that prove their impact in saving lives and improve millions more.

(2009) used a Generalized Method of Moments (GMM) for cross-country data between 1975 and 2004 and found that doubling health aid decreases infant mortality by 2 per cent in a subsequent five-year period. Feeny and Ouattara (2013) tested the impact of health aid on an input to health (immunization) rather than on health outputs (such as mortality rates) and found a positive relationship. But on the other hand, Kosack and Tobin (2006), Williamson (2008) and Wilson (2011) found that health aid has no effect on mortality. While Williamson (2008) uses data from the OECD-CRS (Credit Reporting System) database, Wilson (2011) uses data from 96 high-mortality countries from the AIDatabase and provides an extensive sensitivity analysis and alternative specifications reaching the conclusion that aid effectiveness has not improved over time. Wilson (2011) adds an aid allocation analysis suggesting that the ineffectiveness of aid might be linked to the allocation process of donors by showing that Development Assistance for Health (DAH)<sup>8</sup> has been going to states that had the greatest reductions in mortality in the past years.

The few existent studies that analyse the impact of health aid on health outcomes take a cross-country approach and therefore the estimated effect of aid on health outcomes is an average across a very heterogeneous set of countries. While these results are considered as a first step, countries' case studies on the nature and effect of health aid are much needed to provide a proper insight on whether health aid is working on the ground (White, 2007). In fact, I wonder if treating countries as a homogenous unit of analysis might be explaining the contradictory findings on aid impact. Doing so might omit some important links that connect aid with outcomes on the ground. After all, what really matters in the end is the effect that aid has on improving the living conditions of the individual.

This research departs from the fact that there is unequal distribution of aid in-country, i.e., some provinces receive more aid than others. I ask the following: do differential amounts of health aid explain different health outcomes? This research is the first analysing the impact of foreign aid on an outcome measured at the individual-level. In particular, the most innovative aspect of this research is testing empirically the impact of province-level characteristics, in which health aid is

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<sup>8</sup> Development Assistance for Health (DAH) and Health Aid are used interchangeably in this thesis.

particular relevant here, on individual outcomes proxied by infant and child probability of survival. To test this, multilevel models are employed. This research provides therefore a *meso* level of analysis and suggests that looking at this level can advance explanations for the micro-macro paradox.

Mozambique was the natural choice for a case-study as explained in detail in the introduction of this thesis. One additional factor for picking Mozambique is that this country has created a database that enables to track aid agencies' projects and programs in the country - ODAMOZ - which shows its active response in endorsing the Paris Declaration on Aid Effectiveness<sup>9</sup> (2005) and furthermore represents a valuable source of information for this research.

In sum, analysing the specific case study of health aid in Mozambique provides ground to reflect on a number of current debates about the impact and effectiveness of international aid. Using the Mozambique case will contribute to a better understanding of the determinants that impact on the effectiveness of health aid which is not only relevant for the specific case study of Mozambique but also as it can provide some degree of extrapolation for more general and cross-country conclusions. Furthermore this research contributes methodologically to the literature by employing an original application of multilevel models to debate the problem of aid effectiveness, which though being applied to a specific case study in this research, can easily be replicated to other countries' case studies. Empirically, a critical contribution of this research is the employment of merged data from ODAMOZ and the Demographic and Health Survey (DHS), combination that was never used before on any aid effectiveness studies. Specifically it considers disbursement<sup>10</sup> data rather than commitments, which is critical to properly assess whether aid made their way to the intended beneficiaries.

This paper is organized as follows. Section 2.2 presents the data in particular the construction of database and selection of variables. Section 2.3 describes the

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<sup>9</sup> The Paris Declaration on Aid Effectiveness contains 56 partnership commitments aimed at improving the effectiveness of aid and it is founded on five core principles: ownership, alignment, harmonization, managing for results and mutual accountability. For more information see [OECD \(2005/2008\)](#).

<sup>10</sup> Disbursements record the actual international transfer of financial resources, or of goods or services ([ODAMOZ](#)).

analytical and econometric methodology. Section 2.4 discusses the main results. It starts by considering a single-level regression analysis on the determinants of infant and child survival and then moves to the analysis of multilevel models where health aid is included as a province-level regressor. Section 2.5 concludes.

## 2.2 DATA AND MEASUREMENT

### 2.2.1 AN ORIGINAL DATABASE

In order to assess the impact of health aid on health indicators in Mozambique a spatial approach of health aid was chosen. The objective is to take into account the heterogeneity that exists between Mozambican provinces<sup>11</sup>, mainly in terms of the different amounts of health aid received. This study wants to test whether provinces that receive more health aid have better health outcomes. In other words, I want to assess whether the province variation in health outcomes can be attributed to health aid differentials. For the purpose of this research data are collected through the Official Development Assistance to Mozambique (ODAMOZ) website, the only database that provides province aid information in Mozambique. [Figure 2.1](#) shows the total amount of health aid going to each province.

ODAMOZ reports data from bilateral and multilateral donors as well as from the Global Fund Against AIDS, Tuberculosis & Malaria (GFATM) tracking their projects and programs in the country: “where they are operating, who finances them, and which organization implements them” (ODAMOZ). See [Table B1](#) for the full list of development partners for health registered in the ODAMOZ database, by type of aid agency. Data are inputted online by the individual donors/UN Agencies and therefore completeness and exactness is subject to own judgment of those reporting. In this study, aid data from ODAMOZ database are disaggregated to explore the relationship between health-targeted aid and health outcomes. Because the data is not automatically disaggregated by province in the ODAMOZ database, manual work had to be carried out in order to allocate aid to its respective province, according to the information specified for each individual project and program. Data at the province-level were then ordered by date (time period 1996-2010) and further disaggregated by channel of assistance, on-off

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<sup>11</sup> Mozambique is divided into eleven provinces.



budget and type of project. Disbursements are considered and not commitments as the former represent the inflows that really got into the country (see [Appendix C](#) for more details on the database).

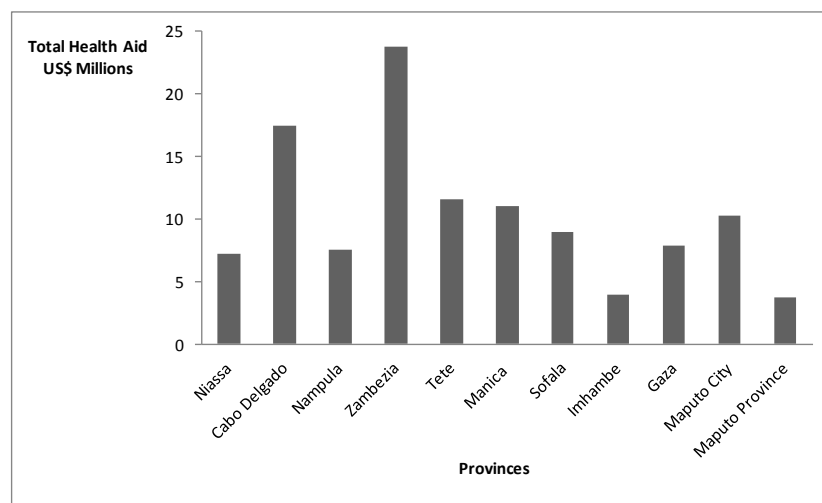
I tried to contrast ODAMOZ database with other databases usually regarded as the main ones for researching aid effectiveness namely OECD (DAC and CRS)<sup>12</sup> (used by [Mishra and Newhouse, 2009](#); [Williamson, 2011](#) and [Feeny and Ouattara, 2013](#)) and AidData<sup>13</sup> (used by [Wilson, 2011](#)); however I found some limitations. Firstly, those databases only report aggregate data at a country level and, therefore, do not capture the aid differentials between provinces, and secondly there is no proper recording on disbursements, i.e. the disbursement data is, in many cases, spotty or missing entirely. The OECD-DAC database only reports commitments for the period 1995-2001 and not disbursements. For the period 2002-2008 I compared totals from OECD-DAC with totals from ODAMOZ and found some differences but not hugely significant and wonder if they might also occur due to different exchange rates: while OECD-DAC uses 2008 constant US\$ millions, ODAMOZ uses the average exchange rate from the Mozambique State Budget 2007 (see [Table B2](#) for a list of exchange rates to US\$ used in ODAMOZ and [Table B3](#) for a comparison between ODAMOZ and OECD-DAC values). ODAMOZ recognizes this limitation and refer the future need to adapt in order to accommodate annual exchange rate based on the OECD/DAC. The difference in disbursement values between both databases might also derive from a divergence on the number of donors with data reported on each database. Finally, I also checked the data from the Institute of Health Metrics and Evaluation (IHME) as this would include private aid as well (aid from foundations and other public-private partnerships); however, once again data was not reported at the province-level.

As a result, ODAMOZ represents the database that best fits my needs.

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<sup>12</sup> OECD data are grouped in two separate databases: the DAC annual aggregate database, which provides comprehensive data on the volume, origin and types of aid and other resources flows, and the Creditor Reporting System (CRS), which provides detailed information on individual aid activities, such as sectors, countries, projects descriptions, etc. Available at: [www.oecd.org/dac/stats/idsonline.htm](http://www.oecd.org/dac/stats/idsonline.htm)

<sup>13</sup> AidData was developed by researchers at the College of William and Mary and at the Brigham Young University. It was formed in 2009 from the merger of two existing programmes: AiDa (Accessible Information on Development Activities) with PLAID (Project-Level Aid) data. Available at: <http://www.aiddata.org/content/index/about>



**Figure 2.1 Total health aid by province between 1996 and 2010.<sup>14</sup>**

*Note: Health aid includes Technical Assistance and Cooperation, Project Aid, and Sector Wide including the funds PROSAUDE, Common Fund for Medicines and Provincial Common Fund, financed by bilateral, multilateral and the Global Health Partnerships. Table B1 includes the list of the funding sources. Health aid is composed mainly by grants with the exception of two loan entries from the African Development Bank. It is considered the total disbursed and not the commitments. The Exchange rates to the US\$ used in ODAMOZ are the average exchange rates used by the OECD in 2007. See Table B2 in Appendix. (Source: author's calculations, ODAMOZ database.)*

The ODAMOZ dataset is merged with a Demographic and Health Survey (DHS), national representative household survey conducted in Mozambique in 2003 for the first cross-section and the Aids Indicator Survey (AIS) in 2009<sup>15</sup> for the second cross-section analysis, both representative at the country, province and urban-rural level. Permission was obtained to access these surveys through the Measure DHS Project. These surveys provide nationally representative data on fertility, family planning, maternal and child health, gender, HIV/AIDS, malaria and nutrition. Firstly, primary data is collected at the household level through questionnaires which are then useful to identify members of the household who are eligible for individual interview including women of reproductive age (15-49) and men aged 15-59<sup>16</sup>. The data is cross-sectional.

<sup>14</sup> Total health aid by province is used here for contextualizing the unequal distribution of aid in Mozambique. Nevertheless, average per capita health aid in US\$ millions will be used in the econometric specification.

<sup>15</sup> At the time when this paper was written these were the last and more recent available datasets.

<sup>16</sup> In 2003, 12315 households were interviewed followed by the interview of 12418 women and 2900 men. In 2009, 6097 households were interviewed followed by the interview of 6413 women and 4799 men. *De facto* region of residence is used, which corresponds to the place where the respondent was interviewed.

One should bear in mind the potential problems associated of using data collected at the women level, namely in terms of the variable mortality which could be biased by under-reporting or even wrong-reporting by women (DHS, 2005). However, collecting data at the level of the individual is less biased than using computed mortality rates that depend on particular estimation procedures.

Additional data on province-level variables comes from the Mozambique Institute of National Statistics (INE). The 2003 cross-section is the main dataset used for this research which is then followed up by a cross-section for 2009.

## 2.2.2 CHOOSING THE VARIABLES

### 2.2.2.1 *Impact measured by health outcomes*

The purpose of this study is to investigate the impact of health aid on health indicators in Mozambique. Infant mortality is usually the main indicator used as a dependent variable in macro-studies for several reasons. Firstly, past research suggested that infant mortality depends on the existence of improved health services through outputs (such as increase number of health workers, availability of medication, number of health units) and outcomes indicators (such as access to health services and vaccination coverage) (see, among others, Filmer and Pritchett, 1999). Infant mortality is therefore a better indicator than life expectancy, for instance, as it corresponds quickly to health improvements<sup>17</sup> (Mishra and Newhouse, 2009). Secondly, infant mortality can also be a proxy for poverty as it is a “flash indicator of improvement in the conditions of the poor” (Boone, 1996: 293) through higher consumption of health services by the poor. Infant mortality is then a good indicator for measuring the relative short-term impact of aid. However child mortality rate (or under-five mortality), that represents the probability of a child born in a specific year or period dying before reaching the age of five (WHO), is also a good indicator for reflecting the impact of aid during a longer period. This indicator is in fact used by other researchers who are interested in a longer effect of health or want to test for robustness (see e.g. Gebhard *et al.*, 2008; Wilson, 2011). In this research both child and infant mortality will be taken into account and their results compared.

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<sup>17</sup> This is due to the fact that infant mortality rate is defined as the probability of a child born in a specific year or period dying before reaching the age of one (WHO).

The DHS database provides the best data available at the level of the individual women on their maternity and birth history. Therefore, although not following the literature on the use of aggregate mortality rate I will take into account the standard ages for infant and child and analyse them separately in this research for allowing the comparison with empirical country analysis results.<sup>18</sup>

For this research birth recodes are chosen as the primary unit of analysis which is common in micro-econometrics models of child health determinants (see, e.g., [Charmarbagwala et al., 2004](#)). The respondent is the child's mother and therefore the birth recodes datasets from DHS are particularly useful for this research as (i) they have data from the respondent (the mother), her household and the birth history, addressing specific information on fertility, maternity and child health (ii) women provide more reliable information on the health of their children as they are the ones who give birth and (iii) being most of the time their care-givers makes them responsible for managing the child's health through their decision in seeking/not seeking health care (see e.g. [Sandiford et al., 1995](#); [Reyes et al., 1997](#)). For obtaining the best proxy for infant mortality the data will be first limited to women who had a child during the year before the impact is being measured (2002 for the 2003 cross-section and 2008 for the 2009 cross-section). A dummy variable is created with the information of whether that child is alive or not at the time of the interview. For computing the best proxy for child mortality, data will be limited to women who had children during the five years prior to the interview. The same dummy variable is created for the 2003 cross-section. For 2009, a dummy variable was created for whether women had all their children alive (independently of the number of children) or at least one had died.<sup>19</sup>

#### 2.2.2.2 Health aid

The main explanatory variable at the province-level is average per capita health aid in US\$ millions constant 2007 exchange rate (see [Figure 2.1](#) under notes, for a

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<sup>18</sup> Maternity and birth history are recorded for each single child a women has, containing detailed information on pre-natal and post-natal assistance, the date of birth, vaccination, weight and height, death and age at death ([DHS, 2003](#)).

<sup>19</sup> A different dummy is created for the 2009 cross-section. This is due to the fact that the 2009 database only contains information at the women level and therefore discards all specific information relative to each birth history. Different models for 2003 and 2009 are specified.

detailed explanation of the components of health aid). Because the health effects of aid projects and programs are not immediate, my first approach is to use six year aid totals and compare with health indicators for the following year. I have chosen to follow Masud and Yontcheva (2005), Gebhard *et al.* (2008), Mishra and Newhouse (2009) and Wilson (2011) who use a one year lag health aid but, as the former did, I will also test the results with alternative lag structures (2 to 4 years<sup>20</sup>). The six years period is chosen for various reasons: (i) health aid has been continuous for a long period and therefore some persistence of the past might still influence the contemporaneous impact on health indicators; (ii) using aggregate six year data for health aid can account for eventual errors of donors who report/input data on the database and finally (iii) the two different years, 2003 and 2009, that are being analysed and compared, have a six year interval. To control for measurement error (Boone, 1996) health aid is averaged over six-year intervals and controlled for population using per capita data. The average per capita health aid from 1997 to 2002 is then compared with its infant/child survival in 2003 and the average per capita health aid from 2003 to 2008 is then compared with its infant/child survival in 2009.

### 2.2.2.3 Additional controls

In order to choose appropriate controls, I reviewed both the aid effectiveness and child health literature for determinants of infant and child mortality/survival at both the individual and aggregate level.

Determinants of mortality in child health literature include child-specific (or biological) characteristics, household characteristics (or socio-economic factors) and community characteristics (or service provision). When service provision data are not available geographical dummies (urban/rural, province/region or cluster) are used to pick those factors. Despite the fact that these dummies are generally significant there is the need to understand what is about different areas that explain differences in child health (Charmarbagwala *et al.*, 2004). Relating with the aid effectiveness literature can provide some insight information on the contextual factors in different areas influencing health outcomes of individuals. In particular,

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<sup>20</sup> There is a debate about which is the best lag aid; however, it is focused on the aid-growth literature. For that reason I will follow what the few health aid literature have done so far.

this research uses health aid as a potential indicator to explain differences in health outcomes across provinces.

To capture the link between diverse, but in my view, complementary areas of research I include both individual and province-level variables. Individual-level controls include children characteristics: infant or child's duration of breastfeeding (in months), gender (female, male); mother characteristics: mother's age (years), mother's education (no education, primary, secondary and higher); household characteristics: wealth index (1 to 5), access to water and sanitation (no access, access) and health care utilization: prenatal assistance and delivery (no assistance, assistance)<sup>21</sup>. In order to arrive to the choice of these controls an extensive analysis was made on the most significant factors that influence mortality (this will be discussed in more detail in section 2.4). Additional control variables tested separately at the province-level include the number of health units, number of doctors, health spending<sup>22</sup> and population. A more detailed description of the databases and specific information on the construction of variables can be found on [Appendix C](#).

## 2.3 METHODOLOGY

### 2.3.1 A MULTILEVEL APPROACH

To verify the hypothesis of whether the context, in particular health aid, influences health outcomes, a multilevel approach, was chosen<sup>23</sup>. Multilevel models allow estimating simultaneously individual and province-level effects and in particular to determine the relative impact of each level of the hierarchy on the outcome and to identify the factor at each level that is associated with that level impact ([Hox](#),

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<sup>21</sup> Vaccination and undernourishment are not included as controls as they only have records for children that are alive. Province-level variables of institutional environment and democracy would be interesting however data was not found at the province-level.

<sup>22</sup> It is expected that health spending is related to health aid since the latter funds the former ([Feeny and Ouattara, 2013](#)). In this sense, health aid also funds health units and doctors, either directly or indirectly. This is tested later on the chapter through pair-wise correlations and was decided not to include these variables in the main model due to collinearity and double-counting problems.

<sup>23</sup> This model has been given different names by different disciplines; in economics the model has been named as random coefficient model, mixed-effects model and hierarchical model, while in statistics it is more widely recognized as the covariance components model ([Hox, 2002](#)).

2002). In this study the outcome of interest is measured at the individual-level (proxy of health outcomes) while the main explanatory variable (health aid) is measured at the province-level. Multilevel analysis is appropriate for the analysis of datasets when comprising several types of unit of analysis as it assumes a hierarchical dataset where individuals are nested or grouped in different contexts, in this case provinces.

In multilevel analysis the dependent variable has to show some amount of residual, or unexplained variation associated with the units (Snijders and Bosker, 1999), e.g. if the study is about infant mortality (Y) of individuals (level 1) in provinces (level 2), this means that individuals in some provinces tend to have higher mortality than in others, even when controlling for individual-level characteristics (e.g. literacy, fertility, wealth, etc.). Equally important in the multilevel analysis is the assumption that individuals in the same group are generally more similar than individuals from different group (*ibid*). Mixed effects models are then an alternative to simple regression models when a hierarchical structure dataset exists. According to Aitkin and Longford (1986) and Burstein *et al.* (1978) the standard single-level approach to hierarchical data gives rise to biased estimates and corresponding standard errors while the multilevel approach does not (Snijders and Bosker, 1999; Maas and Hox, 2004). This is because single-level models assume independence of observations, which is not the case when individuals in the same group share similar characteristics, e.g. the outcomes of individuals living in the same province can be positively correlated as they share several unobserved factors at the institutional level (same infrastructure, same amount of health aid, etc.).

Conflicting advices exist on when to use multilevel models (see, for instance, Searle *et al.*, 1992; Gelman and Hill, 2007: 245-246 for a detailed discussion on the topic). However, the literature is consistent on using multilevel models when the units are randomly drawn from a larger sample but the interest is on the underlying population and when the researcher is interested in the group level 2 coefficients (see Hox, 1995 and 2002; Snijders and Bosker, 1999). For this research the multilevel model is therefore appropriate for the following reasons: (i) both levels of analysis are of interest as I am concerned with the effect of a level 2 variable

(health aid) on a level 1 outcome (infant mortality), (ii) data from the DHS constitute a sample that was randomly selected from the population and because of its representativeness statistical inference is unconditional on the observed units of the sample and (iii) my interest lies on the province group effect on health outcomes.

By allowing nested sources of variability a multilevel modelling has an empirical advantage over standard regression analysis since it does not underestimate standard errors. It also has a theoretical advantage: group threat theory is a theory of groups and thus we are able to draw conclusions at this level of analysis thus avoiding the ecological (interpreting aggregated data on an individual-level) and atomistic (interpreting individual data on a higher level) fallacy<sup>24</sup> (see, for instance, [Gelman and Hill, 2007](#)).

Multilevel models have been more widely used in sociology, epidemiology, education, public health, etc. ([Hox, 1995](#)). This paper presents an original economic/social application of the multilevel approach to the effectiveness of health aid measured at the individual-level, combining different level variables that are interconnected.

### 2.3.2 ANALYTICAL FRAMEWORK

I begin the analysis by fitting a null or empty two-level model:

$$\log\left(\frac{\pi_{ij}}{1-\pi_{ij}}\right) = \beta_{0j} + \beta_{1j}X_{1ij} + \dots + \beta_{nj}X_{nij} + \varepsilon_{ij} \quad (1)$$

where  $\pi_{ij}$  is the probability that the individual  $i$  in province  $j$  is alive or not (is alive = 1 ) and depends on the average survival in province  $j$   $\beta_{0j}$  plus the effects of individual characteristics  $\beta_{1j}$  to  $\beta_{nj}$  (see [Table C1](#) for the full list of individual-level controls) and an individual error  $\varepsilon_{ij}$ .

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<sup>24</sup> Ecological fallacy occurs when the conceptual model being tested corresponds to the lower level (the individual) but the data are collected at a higher level. Atomistic fallacy is the other way around: the conceptual model being tested corresponds to the higher level but the data is collected at the lower level. In multilevel models data are collected at both levels and therefore these problems are avoided ([Gelman and Hill, 2007](#)).



Because there may also exist an effect that is common to all individuals within the same province, it is necessary to add the province-level error. This is done by specifying a separate equation for the intercept:

$$\beta_{0j} = \gamma_{00} + \mu_{0j} \quad (2)$$

(random intercept)

where  $\gamma_{00}$  is the average outcome for the population and  $\mu_{0j}$  is a province-specific effect. The difference with the usual regression model is that it is assumed that each province has a different intercept coefficient  $\beta_{0j}$ . Since the intercept is a random variable that varies across provinces, it is often called as *random intercept*<sup>25</sup> (Hox, 1995). The above model contains only an intercept and therefore no fixed part explanatory variables are specified.

Additionally, in order to test if differences in health outcomes between provinces might be explained by differences in the amount of health aid received, health aid should be included in the previous specification model.

$$\beta_{0j} = \gamma_{00} + \gamma_{01}Z_{1j} + \dots + \gamma_{0m}Z_{mj} + \mu_{0j} \quad (3)$$

(random intercept with control variables)

where  $\gamma_{01}$  to  $\gamma_{0m}$  are the effects of province-level variables on the health outcome. Equation 3 predicts the average mortality in province  $j$  by the respective health aid in that province ( $Z_{1j}$  = health aid by province) and some other province-level characteristics (see Table C1 for the full list of province-level controls). For simplicity, assume that the effects of individual characteristics do not vary across

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<sup>25</sup> There are conflicting definitions of *random* and *fixed* effects. For this research I will follow the generality of multilevel/mixed-effects literature definition with *random effects* referring to coefficients that *do* vary by group (here province) and *fixed effects* referring to coefficients that *do not* vary by group (they are fixed across all groups (here provinces)). For a detailed discussion of the different definitions used for fixed and random effects see Gelman and Hill (2007: 245-246).

provinces and are fixed so that  $\beta_{1j} = \gamma_{10} \dots \beta_{nj} = \gamma_{n0}$ .<sup>26</sup> Combining equations 1 and 3 yields the following:

$$\log\left(\frac{\pi_{ij}}{1 - \pi_{ij}}\right) = \gamma_{00} + \gamma_{01}Z_{1j} + \dots + \gamma_{0m}Z_{mj} + \gamma_{10}X_{1ij} + \dots + \gamma_{n0}X_{nij} + \dots + \varepsilon_{ij} + \mu_{0j} \quad (4)$$

### 2.3.3 ECONOMETRIC APPROACHES

#### 2.3.3.1 Cross-section techniques

Critiques of cross-section versus panel techniques applied to economic problems are common and include aspects such as: i) cross-section studies over long period time spans eliminate short-run fluctuations or business cycle effects, ii) cross-section studies are usually based on average values over long time periods of time which might result in simultaneity problems, iii) and that cross-section analysis may be inefficient since it discards information on within-country variation (see, e.g., [Greene, 2003](#)). However, all these critiques can be overcome if i) the period of analysis can be split to create different cross-sectional databases, ii) by using average values over a shorter period of time and iii) if it is possible to catch within-country variation through the heterogeneity that exists between provinces. As a result, I use two different cross-sectional datasets for 2003 and 2009 which will be separately analysed and then compared as a way to uncover possible time trends. Data on health aid at the province-level will be averaged by 6 years. The use of a multilevel analysis goes further than analysing within-country variation to analyse within and between province variation and capturing the desired heterogeneity.

#### 2.3.3.2 Endogeneity

A main problem identified in the aid effectiveness literature is the potential endogeneity of the variable aid. In the case of health aid specifically, aid might be endogenous because the current health status in a country can determine the amount of health aid received ([Williamson, 2008](#)) possibly leading to an issue of reverse causality. Literature on aid effectiveness has been abundant in trying to

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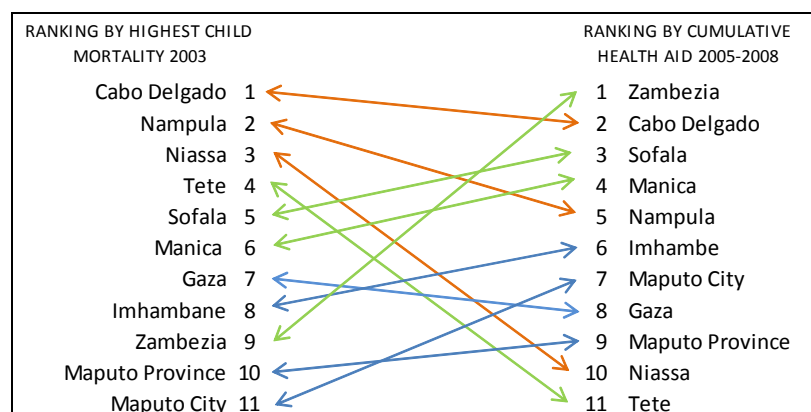
<sup>26</sup> In the empirical analysis on section 2.4 I will test whether individual characteristics have random effects.

address the endogeneity problem (Dalgaard *et al.*, 2003 and 2004; Rodrik, 2005; Roodman, 2008; among others). Scholars have recurrently used instruments for foreign aid such as strategic, military and political variables based on the idea that aid is given based on self-interested motives and not necessarily based on need. Recently, Bearce and Tirone (2010) suggest that all these self-interest variables are highly correlated with ineffective aid in the sense that those are the factors responsible for donors not enforcing conditionality. To account for all these problems lagged aid is commonly used as an instrument.

Some researchers might still think that even if aid is lagged, its coefficient might be biased by endogeneity or reverse causality. Even if one might expect that mortality in the future cannot influence health aid flows today, future mortality might itself be correlated with mortality today. Reflecting on this issue Dalgaard *et al.* (2003 and 2004) argue that endogeneity of aid might not be much of a problem in practice if past levels of mortality are themselves not good predictors of actual deaths which would not create a problem in the case aid allocations were based on past mortality rates. They continue referring that one should, however, take into account the endogeneity of aid once time-averages are employed for both aid and growth which would mean they would be jointly endogenous. Nevertheless, this is not the case in my multilevel specification where averaged aid at the province-level is compared with actual individual deaths in a single year which does not happen in a panel. Following Dalgaard's *et al.* (2003 and 2004) argument I decided to test if past mortality (child mortality in 1997) at the province-level was a good predictor of individual deaths in a single year (2003), using the multilevel specification referred above and found that the variable is statistically insignificant (results not shown for reasons of parsimony).

In addition, one might think that if aid does not follow need, i.e. aid allocations might not be based on past mortality rates, endogeneity might not mask the effectiveness of aid. A recent study by Wilson (2011) showed that aid appears to follow success, rather than causing it, i.e. aid appears to be going to countries where mortality reductions in the past years are higher. This finding is important for the issue of endogeneity of aid. If aid is to be endogenous it must be positively correlated with unobserved factors that increase mortality, i.e. aid has to go

“where it is most likely to do the most good”, where it is more effective (Wilson, 2011: 2038). If aid is to be endogenous it should be positively correlated with past levels of mortality. If aid is negatively correlated with past levels of mortality, endogeneity might not be a threat in explaining the causal effect from aid to outcomes, i.e. reverse causality is non-existent. Wilson (2011) explored this issue by modelling aid allocation as a function of infant mortality and other variables. Here, I simply show a figure that establishes the relationship between the amount of aid received by each province and the correspondent child mortality (see Figure 2.2). In the left-column provinces are ranked according to the highest child mortality rates (2003). On the right, provinces are ordered according to the cumulative amounts of aid receiving by province between 2005 and 2008. The lines connect the provinces, showing the persistent misalignment that exists between mortality and health aid. This is true for all regions in Mozambique but is particular critical for Niassa and Tete and Zambezia and Maputo City who are not receiving correspondent amounts of aid.



**Figure 2.2 Mortality rates versus health aid by province.<sup>27</sup>**

*Note: Orange rows refer to the Northern provinces, green to the central and blue to the south provinces. (Sources: Health Aid: ODAMOZ, Child Mortality: DHS)*

Finally, as Rodrik (2005: 11) wrote about this problem: “it is genuinely hard to find credible instruments which satisfy both the exogeneity and exclusion requirements” because “it is always possible to find a story about why an exogenous variable belongs as a regressor in the second-stage of the estimation (therefore making it invalid as an instrument)”. Roodman (2008) corroborates this

<sup>27</sup> Alternative time frames and average per capita aid flows were tested in order to check for robustness.

idea by referring that different choices of instruments lead to different results on aid effectiveness and it is still unclear which are the best variables to be used as instruments. Overfitting bias caused by using too many instruments can also take place which is equally undesirable. A recent paper by [Deaton \(2009\)](#) discusses in some detail the limits of the process of instrumentation in aid-growth relationships.

Finally, the use of lagged aid is particularly justified in this research as a result of the specific use of a multilevel model. Multilevel analysis tests for the effect of province characteristics on the probability of a single child being alive. By accounting this one-way relationship the direction goes from health aid (a province characteristic) to the single child and not the other way around. As a consequence, reverse causality might not be such a problem in multilevel models between level one and level two variables where the individual is nested in a particular context and not the other way around. Finally, multilevel models also reduce omitted variable biases: province characteristics-specific effects capture some of the omitted variables not previously identified on the child health literature.

#### *2.3.3.3 Sample size and standard errors in multilevel analysis*

Some debate exists on the sufficient sample size for multilevel modelling (see e.g. [Maas and Hox, 2005](#)) since an optimal sample size means minimal standard errors for the parameters of interest ([Snijders, 1993](#)). Some criticisms include the fact that small sample sizes at level 2 may lead to biased estimates of the second-level standard errors because the variability between groups is relatively small. While [Snijders and Boskers \(1999\)](#) provide a rule of thumb saying that if  $N$  is equal to or greater than 10, a mixed-effects model is preferable to a fixed model as a means of regression analysis, [Gelman and Hill \(2007\)](#) go further to argue that there is no minimum number of groups necessary for doing a multilevel estimation. The latter authors emphasize that standard single models are simply multilevel model with group variance set to zero or infinity, which would imply that multilevel models are always appropriate when we expect some variation in level two. As a result the choice of eleven provinces is supported in the literature.

### 2.3.3.4 Software for analysis

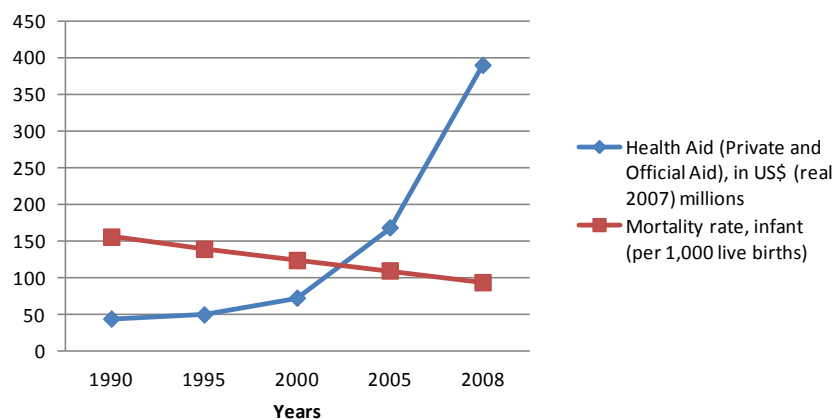
The analysis was conducted in Stata (version 11) using the *gllamm* (Generalized Linear Latent and Mixed Models) program for fitting multilevel models. Although the program has an extremely slow performance it allows the use of sampling weights which was not possible with other mixed models commands. In the DHS surveys it happens that the sample is selected with unequal probability. For this reason weights are applied for the empirical analysis in order to adjust for differences in probabilities of selection and interview between cases in the sample (Hosmer and Lemeshow, 2000). Nevertheless, the results of *gllamm* with no weights were compared with results from the Stata command for multilevel models, *xtmelogit* and *runmlwin* (a Stata command to fit multilevel models in MLwin from within Stata) and found no significant differences even when *gllamm* and *xtmelogit* use maximum likelihood estimation to fit the models and *runlwin* uses quasilielihood estimation.

Adaptive quadrature method was used for numerical integration and the model was refitted with different numbers of quadrature points. Since the parameters' estimates did not vary much, I decided to use Stata's default number of integration points, fixed to seven (used in *xtmelogit*) for *gllamm* as well.

## 2.4 EMPIRICAL ANALYSIS

### 2.4.1 SETTING THE RESEARCH QUESTION

Since the Peace Agreement in 1992 the World Bank and the IMF agreed that Mozambique is a 'success story' in Sub-Saharan Africa (Chao and Kostermans, 2002). Health indicators in Mozambique have generally improved over the last decades. Infant mortality rates, for instance, have declined significantly since 1990 while funding for health aid projects and programs has risen across this same time period. But did these projects contribute to significant increases in the health of developing country populations? (See Figure 2.3 for trends in health aid and infant mortality in Mozambique). Particularly interesting in Figure 2.3 is the sudden rise in health aid flows after 2000 that can be attributed to the tremendous amount of flows from private foundations and global health initiatives.



**Figure 2.3 Trends in health aid and infant mortality in Mozambique, 1990-2005.**

*Note: Health aid (total) includes all financial and in-kind contributions from aid organizations including bilateral and multilateral agencies, private foundations (U.S. based), international NGOs (U.S. based) and global health initiatives (real 2007 US\$).*

*(Sources: Health Aid: IHME 2009, Infant Mortality: WHO)*

## 2.4.2 SINGLE-LEVEL ANALYSIS

### 2.4.2.1 Determinants of infant and child survival

Before jumping into the analysis of health aid as a main explanatory variable for health outcomes, a single-level logistic regression was estimated so as to choose the best controls at the individual-level. Variables were included sequentially by group beginning with child-specific characteristics, mother characteristics, household characteristics and health care utilization.<sup>28</sup> Table 2.1 presents the first set of results for the logistic model where sampling weights were applied. A few remarks are worth making. The beneficial impact of breastfeeding on infant survival is evident. Children that have been breastfeeding for more months have a higher chance of survival. Mother's education also contributes to the outcome of both the infant and the child, to the extent that the odds of a child staying alive are much higher for women with higher education. However it is interesting to notice that when household characteristics and utilization of health care are controlled for, education, though still significant, loses some of its power (regressions 4 of infant alive and regressions 4 & 5 of child alive in Table 2.1). The exception is in regression 5 from infant alive: when prenatal care is added to the regressions, the

<sup>28</sup> A great number of model specifications were analysed before choosing the final model presented here. For collinearity reasons, some variables that one might think to be of theoretical interest for this research were not included in the final model. Some examples of these variables include: child age, number of births per women, birth interval and birth order, access to water and sanitation and degree of ruralness.

effect of mother's education is insignificant. This result implies that prenatal care is extremely relevant for infant survival such that it surpasses the mother's education effect. In terms of delivery assistance, an infant from a mother who received medical care, either by a physician or a nurse/midwife is almost twice more likely to survive than an infant that did not receive any delivery assistance.

#### *2.4.2.2 Comparing infant and child results*

When comparing infant and child results it is quite interesting to notice that infant survival depends more on factors related to childrearing, such as breastfeeding and utilization of prenatal care and delivery services in a medical assisted facility whereas the mother's education is particularly important for child survival. For women with education the odds of having their child alive are higher than for women with no education. Breastfeeding is still important for child survival, however this variable is non-linear and therefore the effect of the duration of breastfeeding is more pronounced at the beginning (first ten months) and attenuates towards the end as the child gets older.<sup>29</sup> Delivery by medical trained personnel is still significant however the coefficient is lower if comparing to the infants' regressions. Prenatal assistance does not seem significant when looking at the child database which is plausible since I am considering a five-year interval and the prenatal effect was eventually smoothed. Finally, my findings are in line with the literature in terms of the insignificance of the wealth index as a determinant for infant and child survival (see e.g. [Charmarbragwala et al., 2004](#) for a review on child health determinants in econometric studies).

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<sup>29</sup> A square-root of the variable breastfeeding is used for the analysis of child survival.



**Table 2.1 Single-level logistic regression, for infant and child survival**

Dependent variable	Infant alive					Child alive				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
<b>Child's characteristics</b>										
Child's sex	0.889 (0.26)	0.899 (0.27)	0.924 (0.27)	0.918 (0.27)	0.836 (0.25)	0.881 (0.09)	0.939 (0.09)	0.939 (0.09)	0.934 (0.09)	1.097 (0.15)
Months of breastfeeding	1.867*** (0.08)	1.938*** (0.10)	1.970*** (0.10)	1.974*** (0.10)	1.958*** (0.10)					
Months of breastfeeding square-root						3.915*** (0.19)	3.951*** (0.19)	3.951*** (0.19)	3.947*** (0.19)	4.306*** (0.32)
<b>Mother's characteristics</b>										
Women education level:										
Primary education		0.770 (0.24)	0.781 (0.24)	0.729 (0.22)	0.604 (0.19)		1.793*** (0.18)	1.794*** (0.18)	1.747*** (0.17)	1.758*** (0.25)
Secondary or Higher education		6.935** (5.58)	7.597** (6.25)	5.347* (4.64)	3.906 (3.29)		6.804*** (2.15)	6.982*** (2.24)	6.276*** (2.02)	5.882*** (2.24)
<b>Household's characteristics</b>										
Wealth Index:										
poorer			1.602 (0.69)	1.479 (0.64)	1.811 (0.80)			1.034 (0.17)	1.019 (0.17)	1.097 (0.25)
middle			1.008 (0.47)	1.014 (0.47)	1.229 (0.59)			1.102 (0.17)	1.097 (0.17)	1.120 (0.24)
richer			0.524 (0.22)	0.525 (0.22)	0.700 (0.29)			0.993 (0.15)	0.984 (0.15)	0.937 (0.20)
richest			0.587 (0.28)	0.584 (0.28)	0.654 (0.32)			0.871 (0.14)	0.864 (0.14)	0.815 (0.19)
<b>Healthcare utilization</b>										
Delivery assistance				1.955* (0.69)					1.316** (0.18)	
Prenatal care					2.360*** (0.72)					1.207 (0.17)
N	2535	2535	2535	2535	2460	9659	9659	9659	9659	6033
r2_p	0.696	0.706	0.712	0.714	0.698	0.407	0.419	0.420	0.420	0.413
chi2	215.525	188.761	204.767	202.012	195.122	801.964	834.149	838.312	846.758	442.762
p	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: This table shows the results for single-level regressions for both infant and child survival using different control variables entered sequentially. Exponentiated coefficients (odds ratio) with standard errors shown in parenthesis. \*, \*\*, \*\*\* stand for statistical significance at 10, 5 and 1% levels, respectively.

### 2.4.2.3 Post-estimation of the single-level model

To begin with, we see that the pseudo R-squared has increased throughout regressions (1)-(4) for both infant and child regressions indicating an improved explanatory power coming from additional inclusion of relevant regressors. It also represents a very good value, comparing to usual low-pseudo  $R^2$  values in logistic regressions. However, as suggested by [Hosmer and Lemeshow \(2000\)](#), the pseudo  $R^2$  does not properly assess the model goodness-of-fit. Therefore, I used the Wald test for assessing the joint significance of the parameters and was able to reject the null hypothesis that all parameters are equal to zero.

A linktest for detecting specification errors was also performed providing evidence that the model was properly specified after controlling for the non-linearity of the logit in the variable breastfeeding. Using [Box and Tidwell's \(1962\)](#) method I found that the best power transformation for the predictor breastfeeding is given by a square root transformation. This is used in child regressions only.

Because multicollinearity could also be a potential problem I examined pair-wise correlations and associations between independent variables and found no serious cases. However, as pair-wise correlation does not provide an infallible guide to the presence of multicollinearity I use multicollinearity diagnostic statistics and found very high values for Tolerance and small Variance Inflation Factors<sup>30</sup>, which support the low multivariate correlation between independent variables. Despite these results one might wonder whether education can still be highly correlated with other variables in particular quintile and delivery assistance. In order to test for the robustness of the model I removed education as a control and found no major changes in both the estimated value of the remaining coefficients and their significance.

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<sup>30</sup> By definition Tolerance =  $1 - R_{sq}$ , where  $R_{sq}$  is the coefficient of determination for the regression of that variable on all remaining independent variables with low values of Tolerance indicating high multivariate correlation. The Variance Inflation Factor (VIF) is  $1/\text{Tolerance}$ , it is always  $\geq 1$  and it is the number of times the variance of the corresponding parameter estimate is increased due to multicollinearity as compared to as it would be if there were no multicollinearity. Values of VIF exceeding 10 are often regarded as indicating multicollinearity, but in weaker models, which is often the case in logistic regression, values above 2.5 may be a cause for concern ([Hosmer and Lemeshow, 2000](#)).

In order to detect influential observations, pearson residuals, deviance residuals and pregibon leverage were analysed. It was decided to remove the most outstanding observations, corresponding to the data points that were three times the average of the leverage. The results reported here already take into account the removal of leverage points.<sup>31</sup>

In sum, all evidence seems to suggest that estimated model is robust. As a consequence, the model is going to be used as a baseline for further analysis, namely when looking into the role of province context variables, in particular health aid, on health outcomes.

### 2.4.3 MULTILEVEL ANALYSIS

#### 2.4.3.1 *Province variation: introducing the multilevel model*

I begin this section by showing the benefits of using multilevel analysis for capturing province-level variation. For simplicity, the following analysis will only consider child (aged 5 or less) regressions.<sup>32</sup> In [Table 2.2](#), regression 2, we can see that the variance component corresponding to an empty random intercept model is statistically significant meaning that there appears to be significant variation in provinces for child survival. This finding is also supported by a standard Chi-square test for association of variables where one is able to reject the null hypothesis of no association between province and proportion of child that are alive. The estimates of the province effects for a random-intercept only model with no controls are displayed in [Figure 2.4](#) and are shown in rank order together with 95% confidence intervals. It is not surprising that Maputo City (the wealthiest province) is the top ranked province, which means that it is the province with the highest number of children alive. Additionally, it is interesting to notice that there are eight provinces in which the 95% does not overlap the horizontal line at zero, indicating that the number of children alive in these provinces is significantly above average (above the zero line) or below average (below the zero line). The

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<sup>31</sup> After running the regressions with and without the outliers, I observed that the estimated coefficients were not qualitatively different and therefore as good practice suggests, I decided to remove the outliers.

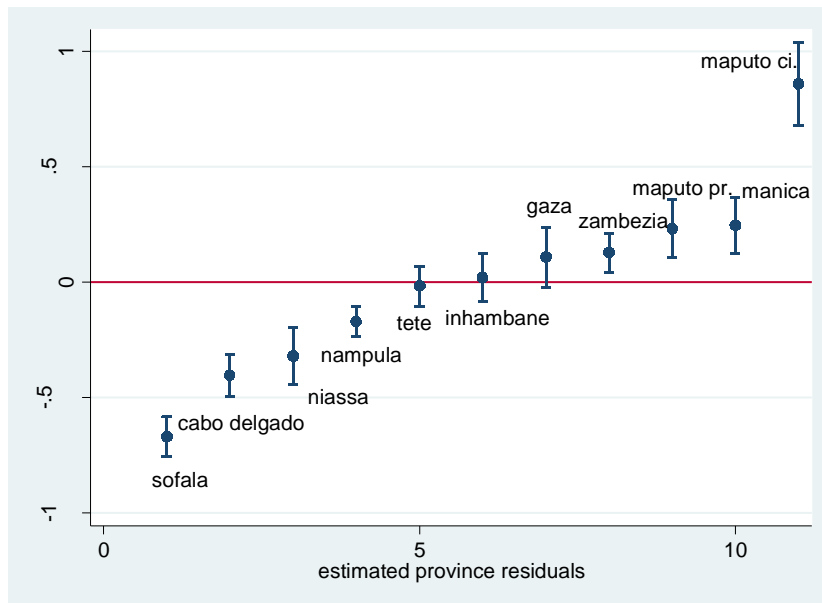
<sup>32</sup> Some results for infant survival are reported later in this chapter under robustness checks (section 2.4.4.1)

likelihood ratio statistics for testing the null hypothesis that  $\sigma_{u0}^2 = 0$  (province variance equal to zero) has a very small p-value, hence there is strong evidence that the between-province variance is non-zero and multilevel model is appropriate.

**Table 2.2 Comparison between single-level model, random intercept model with and without control variables and random slope, for child survival**

<b>Dependent variable:</b>	(1)	(2)	(3)	(4)
<b>Child alive</b>	mlsinglelogit	mlsingle	mlcontrol1	mlrslope
<b>Fixed Effects</b>				
<b>Child's characteristics</b>				
Child's sex	0.934 (0.09)		0.975 (0.28)	0.974 (0.29)
Duration of breastfeeding (square-root)	3.947*** (0.19)		4.389*** (0.41)	4.404*** (0.42)
<b>Mothers' characteristics</b>				
Women education level:				
Primary education	1.747*** (0.17)		1.695** (0.40)	1.681** (0.38)
Secondary or Higher education	6.276*** (2.02)		8.609*** (5.45)	8.676*** (5.33)
<b>Household's characteristics</b>				
Wealth Index:				
poorer	1.019 (0.17)		0.990 (0.16)	0.983 (0.15)
middle	1.097 (0.17)		1.076 (0.19)	1.064 (0.19)
richer	0.984 (0.15)		0.963 (0.09)	0.950 (0.09)
richest	0.864 (0.14)		0.843 (0.13)	0.834 (0.13)
<b>Healthcare utilization</b>				
Delivery assistance	1.316** (0.18)		1.475* (0.33)	1.356 (0.28)
<b>Random Effects</b>				
Intercept		0.179*** (0.09)	0.313*** (0.09)	0.451*** (0.133)
Delivery assistance				0.372*** (0.16)
N	9659	9659	9659	9659

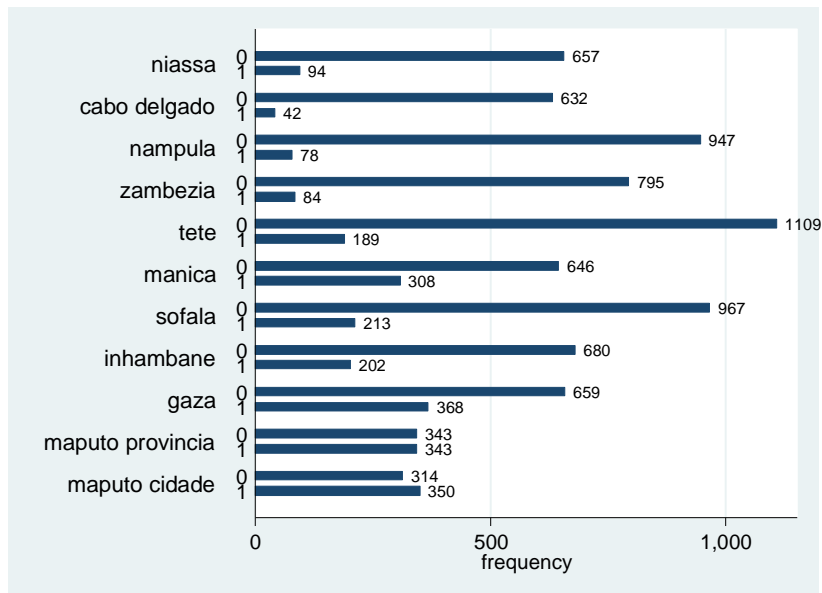
Note: Regression 1 is a single-level logistic regression. Regression 2 represents a multilevel model with an empty random-intercept only. Regression 3 is a multilevel model with control variables at the individual level. Regression 4 is similar to regression 3 but assumes random effects to the variable delivery assistance. Exponentiated coefficients (odds ratio) with standard errors shown in parenthesis. \*, \*\*, \*\*\* stand for statistical significance at 10, 5 and 1% levels, respectively.



**Figure 2.4 Caterpillar plot of estimated residuals for all provinces, for child survival.**

#### 2.4.3.2 Including control variables

After recognizing the existence of significant province variation in an empty random intercept model I introduced control variables that were already found to be significant in the single-level model at the individual-level and noticed that the estimate of the between-province variance increases (0.179 to 0.313) suggesting that the distribution of one or more variables varies across provinces (see regression 3 [Table 2.2](#)). This could happen for instance if some provinces would have a higher proportion of educated women, wealthier households or higher utilization of medical care. Taking a closer look at delivery assistance specifically, [Figure 2.5](#) shows us the uneven distribution of this variable with provinces such as Maputo City and Maputo Province having the highest number of women who had medical delivery assistance. Tete records the highest number of women who did not use delivery assistance.



**Figure 2.5 Utilization of delivery assistance by province, for child survival.**

*Note: Delivery assistance is coded as: 0-No utilization of delivery assistance, 1-Utilization of delivery assistance.*

#### 2.4.3.3 Comparing a single and multilevel model

Regressions 1 and 3 from [Table 2.2](#) show exactly the same control variables but in regression 3 a random effect at the province-level is added. Comparing the two sets of results we see that the coefficients for delivery assistance, higher education and duration of breastfeeding in particular increase which is something I would expect ex-ante. This is due to the fact that the coefficient for a random intercept model has a cluster-specific interpretation ([Gelman and Hill, 2007](#)). For example, the coefficient on assistance represents a comparison between women who had medical delivery assistance or not in the same province. Since there is a positive association between province and both delivery assistance and the probability of a child being alive, an increase in the coefficient of delivery assistance was expected (regressions 1 and 3). In the single-level model, the coefficient of utilization of delivery assistance compares having utilization or not before taking account of province effects (not controlling for province) so it represents a comparison that is averaged across all provinces.

The intraclass correlation approximation for binominal denoted as variation partition coefficient for a random intercept model with control variables is 0.09

which means that 9% of the residual variation in the propensity for a child being alive ( $y^*$ ) is attributed to unobserved province characteristics<sup>33</sup>.

#### 2.4.3.4 Random slope for delivery assistance

Because I am particularly interested in the effect of health care utilization on the odds of a child being alive I tested for a random effect of the variable delivery assistance:

$$\beta_{1j} = \gamma_{10} + \mu_{1j} \quad (5)$$

(random coefficient on delivery assistance)

where  $\beta_{1j}$  is the coefficient of delivery assistance and is composed by a fixed  $\gamma_{10}$  and a random  $\mu_{1j}$  coefficient. In this case the province-level variance has been replaced by a matrix of two new parameters,  $\sigma_{u1}^2$  and  $\sigma_{u01}$ , that represents the variance of delivery assistance and the covariance between assistance and province, respectively. The province-level residuals  $\mu_{0j}$  (intercept only) and  $\mu_{1j}$  are assumed to follow a bivariate normal distribution with mean vector 0 and variance-covariance matrix  $\Omega_u$ :

$$\Omega_u = \begin{bmatrix} \sigma_{u0}^2 & \sigma_{u01} \\ \sigma_{u01} & \sigma_{u1}^2 \end{bmatrix} \quad (6)$$

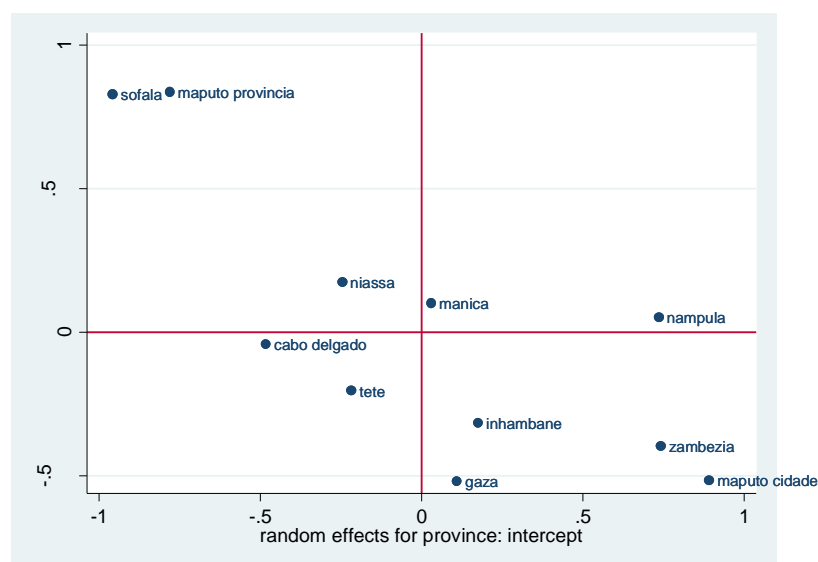
I found that there is significant evidence that the effect of utilization of delivery assistance varies across provinces<sup>34</sup>. The negative intercept-slope covariance estimate (-0.30)<sup>35</sup> implies that provinces with a number of children alive above average tend to have a below-average effect of delivery assistance. In other words: there is less of a delivery assistance effect in the probability of a new child being alive in provinces with a high number of children alive. In [Figure 2.6](#) we observe

<sup>33</sup> This value is computed using the command *xtmrho* after running the multilevel regression in Stata.

<sup>34</sup> Preliminary random coefficients models (not shown) indicated that child-specific variables, mother's variables and household's variables did not vary and were therefore fixed.

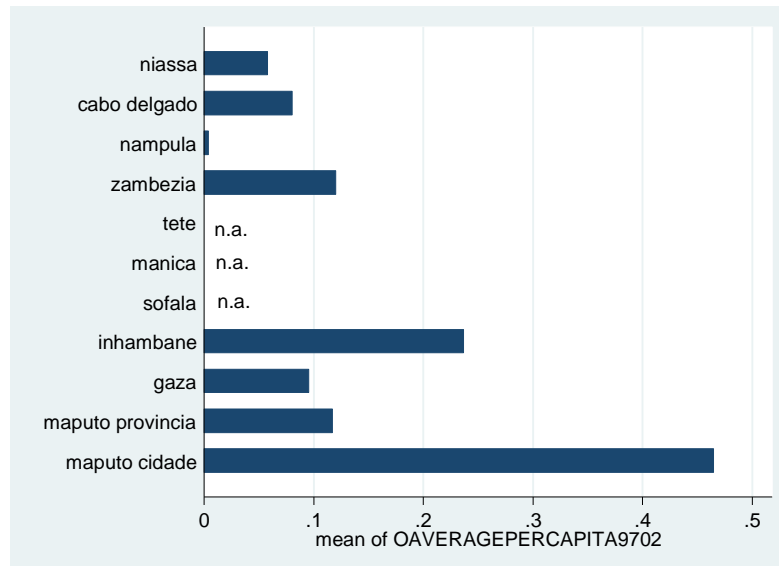
<sup>35</sup> Value computed using *estat recov* command in Stata.

that provinces at the top left up quadrant have the largest negative intercept and positive slope residuals meaning that they have the lowest proportion of children alive after controlling for utilization of health care, and the strongest relationship between children alive and utilization of health care. This conclusion is relevant as it points out that efforts to improve maternal health services, in particular health care delivery assistance, should be targeted towards the provinces at the top left quadrant, namely Sofala, Maputo Province and Niassa. However, with the exception of Maputo Province we see that during the period 1997-2002 the majority of health aid went to Maputo City, followed by Inhambane and Zambezia (Figure 2.7) which are provinces located exactly in the bottom-right quadrant, i.e., provinces where the utilization of delivery assistance does not have such a steep gradient. This means, when comparing to other provinces they would need less “financial” attention than other provinces. A higher impact of health services’ utilization on health outcomes would be expected if left-up quadrant provinces would be tackled. These findings have a parallel with Wilson’s (2011: 2039) discussion on aid allocation across countries. He shows that aid has been going to states that already experienced greatest reduction of mortality in the past and once there, the “money has no added benefit in terms of mortality”. As a consequence aid is not being as effective as it should had been if it had been directed to other states with higher mortality.



**Figure 2.6 Plot of the intercept and slope residuals for provinces, for child survival.**

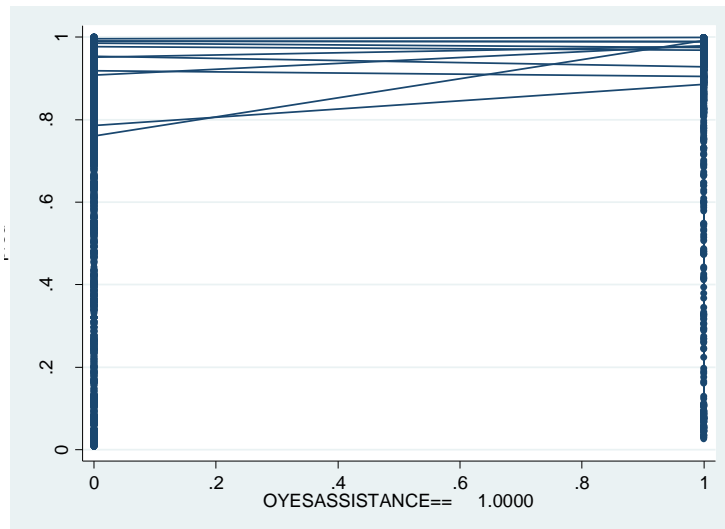




**Figure 2.7 Average health aid per capita 1997-2002, in US\$ dollars (real 2007) by province.**

*(Source: ODAMOZ, author's calculations)*

When plotting the prediction lines for each province we can see the expected positive association and recognize that the lines are more spread out for children who did not have delivery assistance (assistance= 0), meaning that the variability in the log-odds of a child being alive decreases as women use medical delivery care (see [Figure 2.8](#)). In sum, fitting a random slope for the variable utilization of delivery assistance implies that the between-province variation is a function of utilization of assistance, rather than constant as in the random intercept only model. See [Table 2.2](#) regression 4 for a random slope model for delivery assistance.



**Figure 2.8 Provinces' prediction lines for delivery assistance, for child survival.**

*Note: Delivery assistance is coded as: 0-No utilization of delivery assistance, 1-Utilization of delivery assistance.*

#### 2.4.3.5 Health aid and health outcomes

So far I have been considering only explanatory variables at the level of the individual. However, after recognizing the substantial variation at the province-level, the objective is to explore the effects of province-level predictors, in particular, health aid. Results reported in [Table 2.3](#) suggest a positive relationship between health aid and outcomes; however, the relationship is not statistically significant.<sup>36</sup>

That said, the intercept variance representing the between-province variance has decreased slightly from 0.313 to 0.239 with the introduction of health aid ([Table 2.3](#), regressions 1 and 2). This means that even if not statistically significant at usual levels, the inclusion of health aid changed the dynamics of the regression. Not content with the standard view that “aid is not significant therefore it does not work and, as so, no more aid should be given” I inquire possible factors that might be masking aid effectiveness. Could health aid explain some province-level variation in child survival through differentiated use of health services?

In order to understand the differential effect of health aid for children that had medical delivery assistance versus the ones that did not, I carried out a

<sup>36</sup> Due to the high correlation between health aid and other controls at the province-level (see [Appendix D](#) for highly significant pairwise correlations between health aid, number of doctors by inhabitants, health units and health spending) no additional province controls were accounted for in the main model. However, I tested for different specifications where each province-level variable was entered one at a time, excluding health aid. These were found to be statistically insignificant, except for the number of doctors by inhabitants.

comparative statics exercise by contrasting the random slope model on delivery assistance with and without health aid.<sup>37</sup> The between-province variance for women who did not have delivery assistance decreased from 0.451 to 0.345 (Table 2.3 regressions 3 and 4) with the introduction of health aid. The between-province variance for women who received medical care is given by:

$$\text{var}(u_{0j} + u_{1j}X_{1ij}) = \sigma_{u0}^2 + 2\sigma_{u01}X_{1ij} + \sigma_{u1}^2X_{1ij}^2 \quad (7)$$

where  $X_{1ij}$  represents the variable utilization of delivery assistance and takes the value 1 if the child has received delivery medical care for his/her birth. For ease of comparison the between-province estimates from models with random coefficients for delivery care are given in Table 2.4.

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<sup>37</sup> I first checked the existence of a statistically significant pairwise correlation between health aid and health care utilization.

**Table 2.3 Introducing health aid on the multilevel model, for child survival**

<b>Dependent variable:</b>	(1)	(2)	(3)	(4)
<b>Child alive</b>	mlcontrol1	aid8complete	mlrslope	aid8random
<b>Fixed Effects</b>				
<b>Child's characteristics</b>				
Child's sex	0.975 (0.28)	0.628** (0.14)	0.974 (0.29)	0.617** (0.14)
Duration of breastfeeding (square-root)	4.389*** (0.41)	4.515*** (0.45)	4.404*** (0.42)	4.560*** (0.45)
<b>Mothers' characteristics</b>				
Women education level:				
Primary education	1.695** (0.40)	1.735*** (0.25)	1.681** (0.38)	1.762*** (0.24)
Secondary or Higher education	8.609*** (5.45)	5.297*** (2.72)	8.676*** (5.33)	5.504*** (2.75)
<b>Household's characteristics</b>				
Wealth Index:				
poorer	0.990 (0.16)	1.027 (0.23)	0.983 (0.15)	1.016 (0.23)
middle	1.076 (0.19)	1.307 (0.24)	1.064 (0.19)	1.301 (0.24)
richer	0.963 (0.09)	0.928 (0.12)	0.950 (0.09)	0.919 (0.12)
richest	0.843 (0.13)	0.873 (0.19)	0.834 (0.13)	0.869 (0.18)
<b>Healthcare utilization</b>				
Delivery assistance	1.475* (0.33)	1.255 (0.38)	1.356 (0.28)	1.171 (0.33)
<b>Province characteristics</b>				
Av. health aid per capita (97-02)		4.232 (5.96)		4.309 (6.99)
<b>Random Effects</b>				
Intercept	0.313*** (0.09)	0.239*** (0.09)	0.451*** (0.13)	0.345*** (0.14)
Delivery assistance (=1)			0.372*** (0.16)	0.329*** (0.21)
N	9659	6423	9659	6423

Note: Only 8 provinces were considered for the analysis. Aid is included in regressions 2 and 4. This table only includes multilevel regressions. Regression 1 has a random intercept with control variables at the individual level. Regression 2 is similar to 1 but includes health aid as a province-level variable. Regression 3 is similar to regression 1 but assumes random effects for the variable delivery assistance. Regression 4 is similar to 2 but assumes random effects for delivery assistance. Exponentiated coefficients (odds ratio) with standard errors shown in parenthesis. \*, \*\*, \*\*\* stand for statistical significance at 10, 5 and 1% levels, respectively.

**Table 2.4 Estimates of between-province variance for models with random coefficients for delivery assistance**

Utilization of medical delivery	Random coefficient model without health aid	Random coefficient model with health aid
No utilization	0.45	0.35
Utilization	0.22	0.35

Note: The results reported for “utilization” derive from formula 7. The covariance between province and delivery assistance without health aid is -0.3. The covariance between province and delivery assistance with health aid is -0.162 (not reported).

Table 2.4 depicts the following reasoning. Health aid differentials might be explaining some province-level variation in the odds of a child being alive for children that did not have delivery care. Notwithstanding for children that did have medical care the reverse applies (the between-province variation increased from 0.223 to 0.35 with the introduction of health aid). A possible explanation for this might be that children who had medical care would take it independently of whether health aid exists or not. The effect of health aid would then be higher in provinces where people do not make use of medical services. One reason behind the coefficient of aid not being statistically significant might come from the fact that, at the aggregate level, aid is going to places where utilization of health services is already stable rather than going to other places where people need to use health services in order to improve their health outcomes, i.e., where the marginal impact would be greater. In that case aid might not prove significant anytime soon.

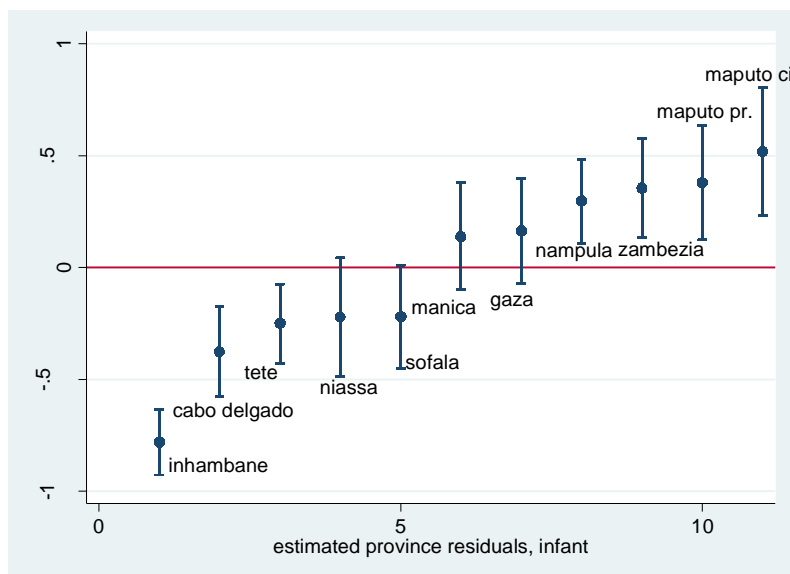
This line of thought follows Wilson (2011)’s discussion of DAH going to better-off places (states with greater reductions on mortality levels). However I go further in considering more than causality between health aid and mortality and explore the role of utilization of health services as a mediator of the relationship under scrutiny. Additionally, in this research I look at utilization of services rather than simply looking at the existence of those services. In a nutshell: utilization of delivery assistance services significantly increases child survival with its effect varying by province. There is a relationship between utilization of health services and health aid. Understanding how that relationship works and acknowledging

the differentiated effect between provinces might be the missing link for advancing the knowledge on aid effectiveness.

#### 2.4.4 ROBUSTNESS CHECKS

##### 2.4.4.1 Results for infant regressions

Up until now, I have been referring to children who are five years of age or below. However, in order to follow the macro effectiveness literature that uses infant mortality (infant up to one year of age) as the main development indicator a comparison was made between infant and child results. The first aspect one would expect is the potential low variance explained at the province-level, once the pseudo-R<sup>2</sup> for a single-level model is very high (above 70%) which would leave less space for province effects to be significant (see Table 2.5, regressions 1 & 2). Nevertheless, as we can see from Figure 2.9 there is still variation at the province-level even if the confidence intervals for random effects for provinces tend to be less dispersed or closer to the yline=0 than the confidence intervals for child survival. The confidence intervals are wider for the infant survival database as the number of observations is much smaller (2435 vs 9720 in child mortality) leading to larger standard errors for the estimated province residuals.



**Figure 2.9 Caterpillar plot of estimated residuals for all provinces for an empty random intercept model, for infant survival.**

From [Table 2.5](#) (regressions 2 and 4) we notice that for a random intercept model with individual controls, the variance at the province-level is only significant at 10% and when delivery assistance is included (as opposite to when prenatal care is included). This might be justified by the fact that prenatal care has higher statistical significance than delivery on the infant regression and therefore when controlling for prenatal care assistance there is less to be explained by province variation.

Looking at the regression 2 from [Table 2.5](#) where delivery assistance is controlled for it is interesting to see that when province variation is included the coefficient on secondary or higher education loses its significance which goes in line with the argument that for infants the mother's education is not as relevant as biological and health care factors as it is for children.

Since there is no substantial province variation, the inclusion of health aid as an explanatory variable at the province-level is not appropriate. Even so, its inclusion was tested and no significant results were found.

**Table 2.5 Multilevel regressions for infant survival**

Dependent variable:	(1)	(2)	(3)	(4)
Infant alive	iinfsinglogitnoc on	infcontrol1	iinfsinglogitnoc onprenat	infcontrol1prenat
<b>Fixed effects</b>				
<b>Child's characteristics</b>				
Child's sex	0.918 (0.27)	0.977 (0.42)	0.836 (0.25)	0.842 (0.40)
Duration of breastfeeding	1.974*** (0.10)	1.992*** (0.10)	1.958*** (0.10)	1.962*** (0.09)
<b>Mother's characteristics</b>				
Women education level:				
Primary education	0.729 (0.22)	0.632 (0.35)	0.604 (0.19)	0.588 (0.30)
Secondary or Higher education	5.347* (4.64)	3.203 (4.17)	3.906 (3.29)	3.482 (4.58)
<b>Household's characteristics</b>				
Wealth Index:				
poorer	1.479 (0.64)	1.486 (0.56)	1.811 (0.80)	1.807 (0.74)
middle	1.014 (0.47)	1.051 (0.56)	1.229 (0.59)	1.234 (0.66)
richer	0.525 (0.22)	0.558* (0.19)	0.700 (0.29)	0.713 (0.25)
richest	0.584 (0.28)	0.589 (0.21)	0.654 (0.32)	0.659 (0.25)
<b>Healthcare utilization</b>				
Delivery assistance	1.955* (0.69)	2.033* (0.85)		
Prenatal care			2.360*** (0.72)	2.350** (0.83)
<b>Random effects</b>				
Intercept		0.278* (0.30)		0.054 (0.142)
N	2535	2535	2460	2460
r2_p	0.714		0.698	
chi2	202.012		195.122	
P	0.000		0.000	

Note: Regressions 1 and 3 are single-level logistic regressions (reg. 1 includes delivery assistance and reg.3 includes prenatal care). Regressions 2 and 4 are multilevel regressions (reg. 2 includes delivery assistance and reg.4 includes prenatal care). Exponentiated coefficients (odds ratio) with standard errors shown in parenthesis. \*, \*\*, \*\*\* stand for statistical significance at 10, 5 and 1% levels, respectively.

#### 2.4.4.2 Alternative lags in health aid

Table 2.6 reports the results of the different specifications where the odds of a child being alive are regressed on lagged average aid per capita (97-02) (regression 1), two-period lagged average aid per capita (97-01) (regression 2), average aid per capita including contemporaneous aid (97-03) (regression 3). I find that health aid remains statistically insignificant when using alternative time periods and lags.



**Table 2.6 Estimated effect of health aid on the odds of a child being alive using different lag structures**

<b>Dependent variable:</b> <b>Child alive</b>	(1) aid8complete	(2) aid59701	(3) aid9703
<b>Fixed Effects</b>			
<b>Child's characteristics</b>			
Child's sex	0.628** (0.14)	0.488* (0.18)	0.723 (0.17)
Duration of breastfeeding (square-root)	4.515*** (0.45)	4.300*** (0.91)	4.651*** (0.46)
<b>Mothers' characteristics</b>			
Women education level:			
Primary education	1.735*** (0.25)	1.361 (0.33)	1.508** (0.31)
Secondary or Higher education	5.297*** (2.72)	3.473* (2.23)	5.077*** (2.17)
<b>Household's characteristics</b>			
Wealth Index:			
poorer	1.027 (0.23)	1.162 (0.34)	1.028 (0.20)
middle	1.307 (0.24)	1.418 (0.47)	1.160 (0.23)
richer	0.928 (0.12)	0.871 (0.19)	0.965 (0.11)
richest	0.873 (0.19)	0.859 (0.32)	0.883 (0.16)
<b>Healthcare utilization</b>			
Delivery assistance	1.255 (0.38)	1.255 (0.38)	1.225 (0.32)
<b>Province characteristics</b>			
Av. health aid per capita(97-02)	4.232 (5.96)		
Av. health aid per capita (97-01)		4.151 (5.14)	
Av. health aid per capita (97-03)			3.656 (3.81)
<b>Random Effects</b>			
Intercept	0.239*** (0.09)	0.1636*** (0.09)	0.218*** (0.10)
N	6423	4059	7634
Number of provinces	8	5	9

Note: Health aid is included in all multilevel regressions using different lag structures. Exponentiated coefficients (odds ratio) with standard errors shown in parenthesis. \*, \*\*, \*\*\* stand for statistical significance at 10, 5 and 1% levels, respectively.

#### 2.4.4.3 Alternative dependent variables

So far I have been measuring the effect at the individual-level represented by the health outcome: mortality/survival. However, alternative health indicators might refer to the utilization of services. Since one could wonder whether the effect of health aid would be easier to recognize if using health utilization indicators as the main dependent variable, I decided to test for the case of immunization of children

as previously done by [Feeny and Ouattara \(2013\)](#). This is because immunizations are more straightforward to administer than other health projects and a great majority of programs have been established especially for this purpose and therefore one might expect that health aid should increase the percentage of immunizations.

The variable on immunization refers to all children (aged 4 year or less<sup>38</sup>) that are alive and were classified as fully immunized or not fully immunized. The first thing to notice in [Table 2.7](#) is the substantial variation at the province-level when a baseline empty random intercept model is specified. This means that individual variance is not enough to explain differences in the use of vaccination and that the variation in health utilization substantially depends on the province the child lives in. One would then enquire if health aid would be explaining differences in provinces' immunization uptake, however we see from [Table 2.7](#), regression 3 that this is not the case as the coefficient of aid, although having the right sign, is not significant at usual levels.

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<sup>38</sup> Although one might think children should be fully vaccinated by the age of one year, many children especially in rural areas do not receive their final immunization until as late as 2 years or older ([DHS](#)). Therefore I include all children aged 4 or less.

**Table 2.7 Estimates for vaccination, for child survival**

Dependent variable: Vaccination	(1)	(2)	(3)
	vacchildempty	vaccnoaidchild	vaccaidchild
<b>Fixed effects</b>			
<b>Mother's characteristics</b>			
Women education level:			
Primary education		1.712*** (0.21)	1.693*** (0.22)
Secondary or Higher education		3.505*** (0.79)	3.348*** (0.92)
<b>Household's characteristics</b>			
Access to improved water source		2.376*** (0.38)	2.589*** (0.59)
Access to improved sanitation		1.509*** (0.178)	1.494*** (0.21)
<b>Province characteristics</b>			
Av. health aid per capita 97-02			1.301 (0.44)
<b>Random effects</b>			
Intercept	0.524*** (0.04)	0.66*** (0.09)	0.678*** (0.05)
N	8766	5831	5831

Note: Access to improved water source and sanitation at the household level are used as proxies for wealth. Regression 1 is an empty random intercept only model. Regression 2 is a multilevel model with control variables at the individual level. Regression 3 is similar to 2 but includes health aid. Exponentiated coefficients (odds ratio) with standard errors shown in parenthesis. \*, \*\*, \*\*\* stand for statistical significance at 10, 5 and 1% levels, respectively.

#### 2.4.4.4 Alternative samples

Results of the present analysis using children as the unit of analysis at level one, were triangulated with results obtained from the same specification but using women as the main unit of analysis and no significant differences were found, which means that data and variables were properly framed (results available upon request). A cross-sectional for 2009 was also performed and no significant difference in the results was obtained (see section on *moving to 2009*).

#### 2.4.4.5 Moving to 2009

Because 2003 might not represent exactly today's trends in child survival and health aid, I tested for another specification where the odds (for a women) of having all children alive (=1) versus having at least one child that died are regressed on a number of individual control variables and health aid specifically. An additional advantage of using the 2009 cross-section is the increased accuracy of health aid data as it refers to a closest point in time and the fact that all

provinces have information on health aid, which contrasts with the 2003 cross-sectional where only eight groups had complete information.

As we can observe from [Table 2.8](#) there is considerable variation at the province-level however the individual factors still carry the strongest power with education remaining significantly important for the odds of having all women's children alive. However, in this occasion the wealth index seems to explain the variation between women's outcomes. This might be due to the fact that now the variable of interest is slightly different as it refers to all under-five children per women in contrast with the 2003 cross-section where children entered individually. Mother age enters in quadratic form and it is statistically significant, meaning that younger women's odds of having all their children alive are lower compared to older women. Despite having significant variation at the province-level it seems that this variation is once again not explained by health aid differentials (regressions 3-5). As a robustness test I used average health aid total (96-08) and contemporary health aid only (2009) and also found no significant results<sup>39</sup>.

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<sup>39</sup> In addition I tested for health aid as reported by the ODAMOZ report (instead of using the database directly) for all the alternative lags structured specified above plus one year lagged per capita aid (2008) and averaged per capita 2005-2008 and found the same insignificant results for aid. Post estimation tests were conducted and the models were found to be properly specified.

**Table 2.8 Estimates for number of children alive per women, 2009**

<b>Dependent variable:</b> <b>All children alive, per women</b>	(1) singlechildrenaliv edum0309noaid	(2) glchildren alivedum0 309noaid	(3) glchildrenali vedummy03 09aid	(4) glchildrenali vedummy96 08aid	(5) glchildrenal ivedumr09a id
<b>Fixed effects</b>					
<b>Mother's characteristics</b>					
Current age	0.834*** (0.02)	0.826*** (0.03)	0.826*** (0.03)	0.825*** (0.03)	0.826*** (0.03)
Age squared	1.001*** (0.00)	1.001*** (0.00)	1.001*** (0.00)	1.001*** (0.00)	1.001*** (0.00)
Women education level:					
Primary education	1.266** (0.12)	1.427** (0.23)	1.427** (0.23)	1.426** (0.23)	1.427** (0.23)
Secondary or Higher education	2.789*** (0.42)	3.518*** (0.85)	3.518*** (0.85)	3.514*** (0.85)	3.519*** (0.84)
<b>Household's characteristics</b>					
Wealth Index:					
poorer	1.335** (0.17)	1.193* (0.11)	1.193* (0.11)	1.194* (0.11)	1.194* (0.11)
middle	2.037*** (0.27)	1.403* (0.27)	1.403* (0.27)	1.404* (0.27)	1.403* (0.27)
richer	2.231*** (0.28)	1.487*** (0.15)	1.487*** (0.15)	1.489*** (0.15)	1.488*** (0.15)
richest	3.485*** (0.46)	2.034*** (0.21)	2.035*** (0.21)	2.039*** (0.21)	2.038*** (0.21)
<b>Province characteristics</b>					
Av.health aid capita (03-08)			0.969 (0.18)		
Av.health aid capita (96-08)				1.005 (0.03)	
Health aid capita (09)					1.024 (0.20)
<b>Random effects</b>					
Intercept		0.276*** (0.14)	0.2761*** (0.14)	0.283*** (0.14)	0.323*** (0.127)
N	5841	5841	5841	5841	5841
r2_p	0.170				
chi2	667.783				
p	0.000				

Note: Regression 1 is a single level logistic regression. Regression 2 is a multilevel regression. Regressions 3-5 are multilevel regressions that use different lag structures. Exponentiated coefficients (odds ratio) with standard errors shown in parenthesis. \*, \*\*, \*\*\* stand for statistical significance at 10, 5 and 1% levels, respectively.

## 2.5 CONCLUSION

This paper revisited the debate on aid effectiveness, more precisely the question of whether aid works or not. This research adds to the literature by employing a new model to study aid effectiveness where both individual and context factors are taken into account.

I constructed a multilevel model of aid effectiveness for the case of Mozambique, in order to assess the potential link between health aid and health outcomes. More specifically, I recognized the variation at the province-level in terms of health outcomes and queried if health aid was a significant cause of those variations.

My results can be summarized as follows. First, one should not discard the importance of individual factors in determining the odds of health outcomes. However, it is clear that there is significant variation at the province-level and therefore the odds of positive health outcomes differ according to the province the individual lives in. Particularly relevant for this research are the effects of individuals' actual utilization of health services on improving the odds of child survival. My results suggest that provinces that have below-average utilization of health services could more strongly benefit from more targeted interventions in comparison to other provinces where the effect of health services' utilizations is not as strong. This finding is based on the fact that resources are being disbursed to provinces where utilization of services is already at reasonable standards which might mask the true impact of improved health services.

Secondly, despite a positive sign of the health aid coefficient, I did not find a statistically significant effect of health aid in improving health outcomes, results that are in line with [Kosack and Tobin \(2006\)](#), [Williamsom \(2008\)](#) and [Wilson \(2011\)](#). Finally, after considering an association between health aid and utilization of health services, I explored a potential reason that might be masking aid significance: when controlling for random effects on health care utilization coefficient (e.g. delivery assistance), aid could eventually play a role for individuals that were not using health services, which is not the case for those who already use delivery care. My findings corroborate [Wilson's \(2011\)](#) discussion on aid chasing after development has already occurred, rather than causing it as the money is not

having the expected added benefit in terms of mortality because it is being directed to places less in need. This research adds to [Wilson's \(2011\)](#) discussion by acknowledging the differentiated effect of utilization of health services in mediating the causal relationship between health aid and outcomes.

Failing to attribute a causal effect between health aid and health outcomes, this research has more to it than a call to increase or decrease aid flows. In sum, it provides us three main findings: i) the effect of health services' utilization on child survival varies across provinces ii) that effect is higher in provinces with a number of children alive below average iii) the insignificance of health aid might be justified by aid being directed to provinces where the impact of health services' utilization on health outcomes is small.

These findings deserve more attention in the future: a possible extension of this model would be to explore other moderators of health aid, such as utilization of target services (e.g. HIV, family planning, general medicine, emergency, etc.). Another interesting extension would be to analyse the impact of different types of aid, such as aid that comes from the Ministry of Health (MoH) versus private aid disbursed directly by NGOs and/or delving deeper on the disbursement from major players, such the U.S. Finally, taking into account the interesting finding on the constant and coherent significance of female education on health outcomes, an exploration of the effect of education aid on health outcomes would make an attractive story. This would raise the question whether female education should be prioritized over the health sector.

This research provides ground to reflect if the main question is not whether aid works or not, but how it works. It suggests further exploration on uncovering the roots of aid effectiveness since it appears to be strikingly masked by factors other than health aid differentials. It therefore redirects us to the *quality of aid* strand of literature and policy arena, where questions are made about why aid is working or not and how can it be improved. As stated by [Bourguignon and Sundberg \(2007: 316\)](#) "making further progress on aid effectiveness requires opening the black box". And here is when the third chapter starts...

## PART II: HOW DOES AID WORK AND WHY?



# CHAPTER 3

## STRATEGIC INTERACTIONS IN HEALTH AID FLOWS

### 3.1 INTRODUCTION

The motives behind aid allocation have been studied with debate starting broadly on whether donors have self-interested or altruistic motives (Burnside and Dollar, 2000; Alesina and Dollar, 2000). Alesina and Dollar (2000) found that donors are considerably motivated by political and strategic considerations, such as a recipient's<sup>40</sup> history of colonization, commercial and strategic interests. They stressed however, that not all donors behave the same and some countries allocate aid based on good policies in recipient countries.

Literature on aid allocation has then become more interested on the influence of domestic factors on donors' behaviour and not only on donors' self-interested foreign policy goals. The report *Assessing Aid* (World Bank, 1998) already advocated a selectivity approach in which aid allocation should be targeted towards recipients with good policies which was also defended later by Collier and Dollar (2002). However, some subsequent studies have shown that reality is different from the prescription. Alesina and Weder (2002) found no evidence that corruption discourages aid. Neumayer (2003), when studying multilateral aid agencies, found that good governance was not a strong motive for allocation as other measures of recipient need or donor interest which was shared by Bueno de Mesquita and Smith (2007, 2009).

Although Burnside and Dollar (2000) found aid to be more effective in countries with a good policy structure, soon these claims were contested (Hansen and Tarp, 2001; Dalgaard *et al.*, 2004) while others found aid to reduce poverty independently of recipient policies (Mosley *et al.*, 2004; Gomanee *et al.*, 2005). In what concerns aid as a lever for good governance, Burnside and Dollar (2000) pointed out some case studies that show positive effects of conditionalities on policy reform. However, literature started questioning the effectiveness of political

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<sup>40</sup> Throughout this thesis the "recipient" refers to the recipient country, sometimes also called the "main recipient".

conditionalities (e.g., Crawford, 1997; Collier *et al.*, 1997; Killick, 1997; Gibson *et al.*, 2005). A key insight drawn from this literature refer that state-to-state contracts might not offer the sufficient incentives for recipients to align (Killick, 1997) and that conditions are not credible as donors are unable to punish recipients who do not comply with them (Svensson, 2000).

In the meantime, the old ex-ante conditionality deemed ineffective by literature in general gave rise to a new style of conditionality, called 'consensual conditionalities' which pushed for a negotiated approach with the recipient governments (Killick, 1997; Mosley *et al.*, 2004; Mosley and Abrar, 2006) and have consequences on the type of aid provided (Clist *et al.*, 2011). The principles underlying a new aid architecture (post 2000 endorsed by the Paris Declaration in 2005 and the Accra Agenda for Action 2008) reports a donor-recipient relationship based on principles of ownership, donor coordination efforts and coherent packages of conditionalities. But how effective are these new political conditionalities?

All of the past studies have focused on understanding state-to-state relationships taking a global macro view into account. However, selectivity is just one aspect of aid quality (Amprou *et al.*, 2006) and it is usually part of the allocation process that is centralized (Svensson, 2003). The actual disbursement decision is decentralized and occurs in-country (*ibid*). The decisions about the amount of aid to be allocated and the country to select are just the beginning of a more complex set of decentralized decisions ahead about *how* to actually disburse aid namely the choice of delivery channel or aid modality. At the same time, understanding the failure or success of conditionalities can only be done at a country level while recognizing that what might work for a country might not work for others.

As Radelet (2004: 12) advocates:

*"Aid should be delivered to countries with better governance very differently than to countries with poor governance. To date, the move towards greater country selectivity has been conceived primarily as allocating more Official Development Assistance to countries with better policies and stronger institutions. However, the idea that aid is likely to be more effective in well-governed countries should influence more than just the amount of aid that donors provide -it should change the way that donors administer aid".*

Most donor allocation literature looks at a two stage model when donors first decide which country to disburse aid followed by a choice on the quantity of aid. Limited theoretical literature began elaborating an extension of a two stage model where donors make an additional decisions of how to actually disburse aid. Recent literature began analysing the relative effectiveness of different aid instruments, in particular conditional budget support and project aid (Cordella and Dell’Ariccia, 2007; Clist *et al.*, 2011). The literature on the advantages or disadvantages of those two instruments was already abundant by then; however no formal comparison had been modelled taking a particular look at the incentive structure underlying principal and agent contracts. While Cordella and Dell’Ariccia (2007) assume that donors have to choose between modalities, Jelovac and Vandeninden (2008) extend the model by allowing donors to also have a mix set of modalities, which is naturally more adapted to the reality of aid. Clist *et al.* (2011) using a contract theory approach, argue that donors exercise selectivity over the aid modality, focusing on the decision of two multilateral donors to provide budget support.

Other literature has focused instead on the channel of delivery or type of aid provider. Van de Walle (1999) drawing on a political economy analysis reviews four proposals for increasing aid effectiveness including aid being selective, aid following a needs-based allocation, promoting government ownership and focusing aid on non-state actors. The author concludes that although the proposals are desirable they might not be compatible; selectivity is contrary to needs based allocation and calling for more aid to the private sector cannot be pursued at the same time as there is a call for public ownership and involvement, i.e. donors do face tradeoffs.

Dietrich (2011) shows empirical evidence that donors have allocation tactics to ensure that aid is implemented effectively and would decide to bypass the government and contract private actors if they are disbursing to poorly governed countries. This literature argues that the conventional perception that aid is driven by donors’ self-interest changes when accounting for the different channels of aid delivery. By extending the state-to-state relationships to include non-state actors active in the aid delivery business, donors’ real concern is how aid is actually

implemented in a way that maximizes its intended purpose. Hawkins and Jones (2011) take a similar approach to Dietrich (2011) but assume that donors do not only analyse the quality of the governance systems but also look at the quality of the NGO sector. Some NGOs might have lower capacity than others, which is generally the idea when comparing local NGOs to international ones. Will a donor still decide channelling its aid to a NGO that has low capacity?

But when does this game end? This research goes even further to analyse the full five stage game of when donors actually look into each country and decide *who* should get their aid (in the public sector: the central or provincial directorates, and at the private level: international or local NGOs) and *where* (to which locations, to which areas and priorities), adding therefore, through an original piece of research, a new piece in the aid puzzle.

This research can be integrated into the small, but growing literature that looks upon donors and recipients' strategic interactions. In particular, it shows that donors have allocation tactics other than state-to-state aid to pursue their goals which take into account the recipient's behaviour. It uses a game theoretic framework to look at the negotiation dynamics between donors and recipients which influences the choice of aid delivery channel. This research can also lead back to the broader macro level literature on aid allocation, selectivity, conditionality and aid effectiveness while at the same time entering into new *terra incognita*. Firstly, it focuses on donors' motivations and preferences at the country level. Secondly, it analyses selectivity on the delivery channel accounting for the existence of alternative providers while looking at the entire aid flows' decisions in-country. Thirdly, it explores how a new consensual conditionality takes place at the country level and whether it is effective when accounting for different forms of aid delivery. Finally, it falls within the aid effectiveness field by acknowledging that different donors and recipient's behaviour do impact on the effectiveness of aid.

## 3.2 METHODS, THEORETICAL AND ANALYTICAL FRAMEWORK

### 3.2.1 METHODS AND ANALYTICAL FRAMEWORK

The results reported in this paper form part of a larger study that was set up to shed light on aid agencies' dynamics and strategic interactions with each other and with the recipient country. The findings presented in this paper represent the subset of the data collected, concerning health aid agencies' disbursements decisions in Mozambique. A qualitative case study approach was first adopted to properly explore how aid agencies decide to disburse aid. Specifically, fieldwork research aimed to elicit: i) which factors influence aid agencies' motivation to disburse aid ii) to what extent does the recipient's behaviour influences aid agencies' choices of channel of delivery iii) why do aid agencies behave differently and iv) how it is reflected on diverse disbursements patterns and v) how different disbursement decisions culminate on different outcomes on the ground. Data collection took place in Maputo from February 2012 to June 2012. The research included the following methods:

a) fifty in-depth interviews were carried out with key stakeholders active in the health sector in particular representatives from: NGOs (international and local), bilateral and multilateral organizations, global health initiatives, MoH, Ministry of Planning and Development and other groups (consultancy organizations, research institutes and former MoH and aid workers). The selection of interviewees was purposive at first combined with snowball techniques (Patton, 2002)<sup>41</sup>. An ad-hoc quota was established to ensure that a considerable number of representative and relevant respondents from different types of organizations were addressed. More than 60% of relevant partners active on health were interviewed. Relevant partners represent those whose budget and involvement in the health sector is considerably high. Interviews took place in Maputo since this is the place where all development agencies' main office is based and where the most important development decisions are taken. Although the data collection was mainly at the national level, province and district views were captured through discussions on specific level questions and involvement of informants in the field. All interviews

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<sup>41</sup> Purposive/purposeful sampling aims at selecting information-rich cases strategically and purposefully. Snowball or chain sampling involves the identification of cases of interest from sampling people who recommend key informants that should take part of the study (Patton, 2002).

were tape-recorded and transcribed. Interviews were conducted using both a semi-structured approach as well as informal unstructured conversations (see [Appendix E](#) for the semi-structured interviews' questions). All interviews were conducted by the author, most of them at the respondent's place of work and for an average of one hour each. Interviews were conducted in Portuguese or English depending on the nationality of the informants.

b) Policy documents were collected and analysed which included both published and unpublished documents. Documents relevant to the research topic included health sector plans and reviews, sector and budget performances, memorandum of understanding between partners, minutes of meetings, agencies' reports, etc. Documents and reports were accessed through: email list from the Health Partners Group (HPG) and Pre Partners Forum (PPF), access to the HPG's intranet webpage, participation in meetings and information from interviewees.

c) six different meetings were observed. These included a HPG monthly meeting, a HPG full-day retreat, a PROSAUDE meeting, a PPF meeting, a National Aids Council (CNCS) communication group meeting and a NAIMA (standing for Network of Organizations working in Health and HIV/AIDS) meeting<sup>42</sup>. Observation helped in mapping the organizations involved in the field, provide insight to which actors actually participate in the meetings and what were the main issues discussed, observe the dynamics of interactions between different stakeholders and their behaviour and views on specific topics, network and gain access to inside information, inform the choice of key informants, triangulate agencies' behaviour with information provided through interviews. The observations were non-participatory and therefore the researcher did not actively participate nor attempt to influence the discussions.

In addition to the above methods, field scope visits took place in 8 out of 11 provinces. During these visits a number of health facilities were observed and some informal interviews took place. These visits were crucial to have a clearer understanding of the country's reality and a taste of the different contexts that characterize each province.

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<sup>42</sup> Detailed information of these groups will be given in Chapter 4 of this thesis.

Respondent validation was sought by presenting my findings to some of the interviewees. To balance the scope for errors and bias and assure reliability, triangulation of different sources was used (interviews, observations and documentary analysis) and was complemented by cross-checking the data with literature on the topic. Data was consistent and no correction resulted from the triangulation process. In addition a comprehensive record of the data collected was maintained. This includes 303 pages of transcribed interviews and notes from the meetings and policy documents. Interviewees gave their consent first by email, by agreeing to participate in the research and then by signing a consent form while on the interview. Confidentiality of data was maintained throughout the research process and no names of individuals interviewed nor the organizations they work for were disclosed. Ethical approval was given by the University of East Anglia.

The analytical process followed a thematic content approach (Ritchie and Spencer, 1994; Patton, 2002) and involved first familiarization with the data collected (including data cleaning and checking for consistency), development of a coding scheme based on the identification of a thematic framework, mapping, charting and interpretation. Qualitative analysis is used to conceptualize the identity and motivations of different actors, while game theory guided the explanation of their interactions. The theory developed in this chapter is grounded on qualitative evidence from fieldwork research in Mozambique. In order to properly understand the processes of aid agencies' decisions to disburse aid a concurrent transformative strategy is employed, i.e. in the data analysis the theory develops at the same time as the findings take place (Creswell, 2002). This means that quantitative and qualitative evidence converge in order to provide a comprehensive analysis of the research problem. In this type of strategy the information is integrated in the interpretation of the overall results. In addition, it is transformative as the research is guided by a specific theoretical framework, in this case game theory (Creswell, 2002).

### 3.2.2 THEORETICAL FRAMEWORK: GAME THEORY

Recipient-donors interactions are crucial to understand the aid negotiation process, to analyse donors' allocation behaviour and the consequences for aid effectiveness. Traditional aid literature focuses on donors' behaviour on one hand

or recipient's characteristics on other, thus assuming a somehow passive role of the recipient on the allocation of aid. However, reality shows that recipient's behaviour has not only a direct impact on the effectiveness of aid but also an indirect effect on donors' decision to allocate aid. Like donors, recipients are rational actors who want to utilize external funds to maximize their welfare whilst facing budgetary constraints (Mosley *et al.*, 1987). Game theory is used to best account for these strategic interactions. Game theory is a theory of interaction between rational actors which presumes that each actor's pursuit of their goals depends on the behaviour of the other actor. When pursuing their goals, actors are maximizing their utility.

More specifically, a principal agent framework is used. This model has been used for some scholars when researching the incentive structure affecting agent's behaviour in the aid delivery process (see, among others, Killick, 1997; Svensson, 2000; Martens *et al.*, 2002). In the standard aid literature, donors are the principals and the recipient countries are the agents. However, in this research framework consisting of a five-stage game with different actors, complex categorizations arise. A principal (e.g. donor) might transfer its power and role as a principal to a recipient (e.g. recipient country), by choosing to provide budget support which assumes recipient's total responsibility for managing the funds. As a consequence throughout this thesis, the principal represents the entity that holds responsibility for deciding the disbursement of resources.

Donors' decision on *how* to allocate aid is therefore mediated by the recipients' response to their actions. More precisely donors' decision in terms of aid providers is a function of both their interests and the recipients' behaviour. Donors can choose to disburse their aid to different types of agents. To get a formal sense of the problem I consider a game with two players: a representative donor (player one) and a main recipient (player two). The alternative recipient (e.g., a NGO) acts in the background, i.e., a donor who chooses not to deliver aid to the main recipient (player two) opts for delivering aid to the alternative one. Throughout this analysis the donor has two main strategies:

- (1) *{to disburse to the main recipient} = {d}*
- (2) *{not to disburse to the main recipient but disburse to the alternative one} = {n}*



I acknowledge that different donors have different objectives and motivations which are translated into different decision options along the aid delivery chain. As a consequence, I modulate different games using different types of donors that I categorized through evidence gathered from fieldwork research (e.g., a public sector donor versus a private sector donor). For this research I abstain from modelling problems arising from coordination issues since coordination could not be controlled for in a theoretical model with such a complexity of players and interactions between them. Dynamics of coordination between aid organizations will be analysed separately in the fourth chapter of this thesis.

Payoffs represent a measure of ordinal utility and capture the player's ordering of preferences; however they do not provide a measure of the intensity of a player's preference nor can be compared across players (Hargreaves-Heap and Varoufakis, 2004).

### 3.2.3 DECISIONS IN HEALTH AID FLOWS

This framework looks at the decisions donors make at different levels of the decision tree model. In the first stage decision donors, at a global level (head offices), decide *who* gets aid. In a second stage they choose the *amount* of aid to allocate to the selected country. So far this is where most literature focuses on –the *quantitative* aspect of aid - which involves the discussion around the concepts of selectivity and conditionality already discussed in the previous section. It is also within these stages that donors decide how much to allocate to the health sector as opposed to other sectors. While some donors, like multilateral organizations and global health initiatives might decide for the sector beforehand (stage 0) since they have ex-ante money designated for specific purposes, bilateral donors' decision on the sector might occur after the amount of aid has been specified. Nevertheless, the choice of sector happens before the third stage decision.

In the third stage donors<sup>43</sup> decide *how* to disburse aid in-country – the form of aid which will determine its *quality*. While some recent literature on this topic focuses

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<sup>43</sup> Throughout the text I do not differentiate between head-office donors and in-country donors. This is because in some cases head- offices hold power for this level of decision while in others that is a responsibility of in-country donors or they can influence decisions to a certain extent. For simplicity reasons I refer them generally as donors.

on the modality of aid, usually budget support or project aid (see e.g., [Cordella and Dell'Ariceia, 2007](#); [Clist \*et al.\*, 2011](#)), other authors focus on the type of provider or channel of delivery, usually distinguishing between the public and the private sector (see e.g., [Van de Walle, 1999](#); [Dietrich, 2011](#)). I will follow the latter as my main goal is to understand the interactions between different players in the aid delivery process. However, naturally, different players encompass different aid modalities so at the end both approaches will be taken into account. Donors can then decide: i) to give to the private sector and bypass government/state/public institutions, ii) to encourage more integration of programs into the public sector or iii) to have a combination of both approaches.

My extension to the existing model brings on a fourth stage where donors decide *who* should spend their aid in-country. In case of public sector donors they can deliver aid centrally or directly to the province-level. In this research I am focusing on the health sector and therefore the central decision body is the Ministry of Health (MoH) and the provincial decision bodies are the Provincial Directorates of Health (DPS)<sup>44</sup>. Donors can provide sector budget support or fund vertical alternatives. If choosing the private sector<sup>45</sup> donors can decide between international and local NGOS<sup>46</sup> to channel their funds.

Finally, the fifth decision concerns *where* to disburse aid to. Where is aid disbursed at a country level? Which province gets more aid and why? Which are the main health priorities? This is a stage where the decisions of both the public and private sector culminate no matter the path that they follow in between, i.e. different principals end with the same options (e.g., to choose between provinces, to choose which priority areas, etc.). A second group of questions arise about who makes this decision? Is the public sector recipient acting as a principal responsible for managing and directing its budget? Can NGOs act as principal at this stage or do they remain agents?

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<sup>44</sup> In Mozambique the health sector is defined as the health system (Ministry of Health, Provincial Directorates and Hospitals) and the HIV/AIDS system (National AIDS Council) ([UNICEF/FDC, 2012](#)).

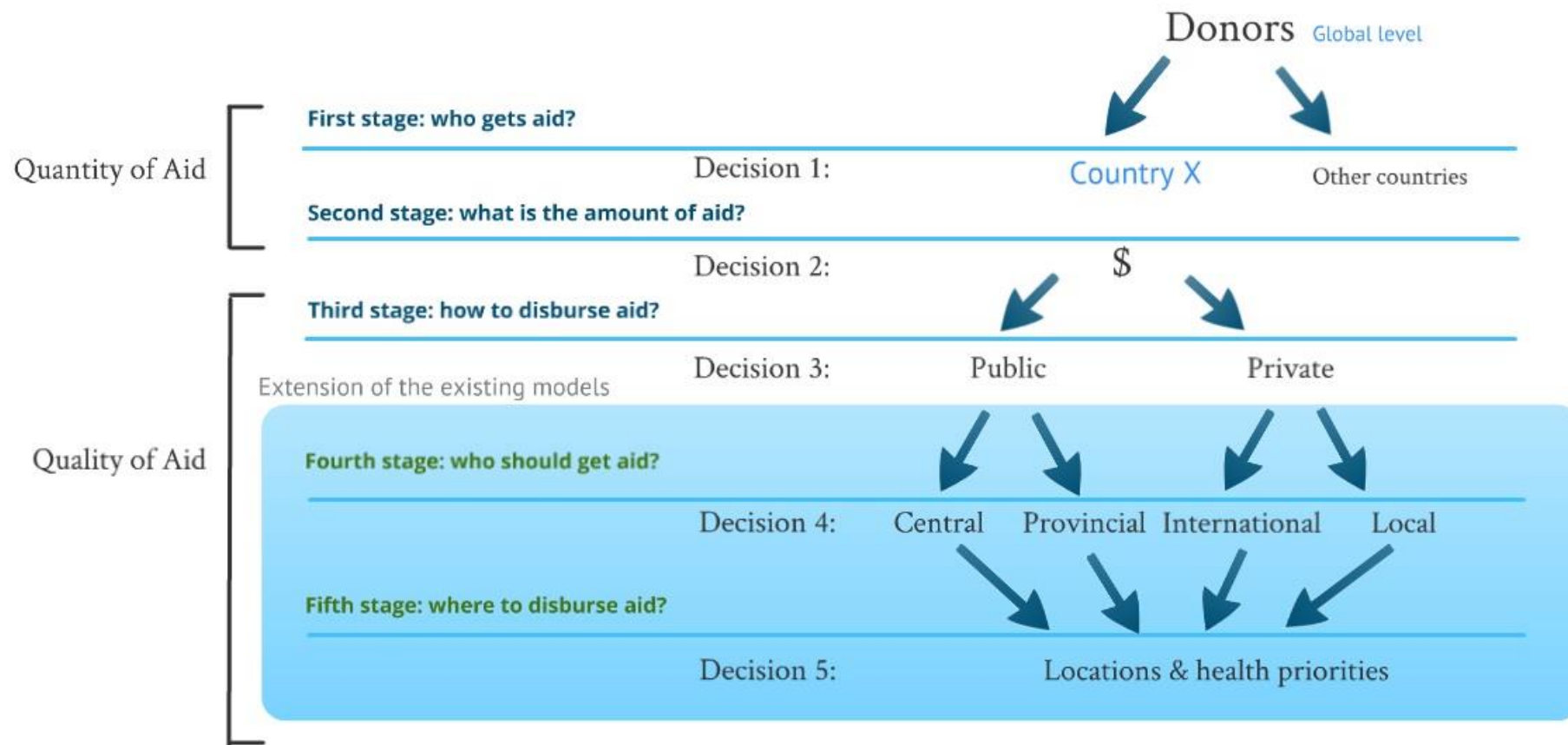
<sup>45</sup> In general, private sector actors might include private corporations, charities, NGOs. For this research I am just considering non-profit organizations, local and international who receive funding from donor agencies.

<sup>46</sup> Local NGOs are sometimes called civil society organizations.

This research focuses on the *quality* of aid therefore starting on the third stage of the decision ladder, looking specifically at the health sector in Mozambique (see [Figure 3.1](#) for a framework of the five-stage model). Only donors who finance for health in Mozambique are taken into account. When using quotations, informers are coded according to the type of organization they belong and further assigned a specific number<sup>47</sup>. Quotations used are from the following types of agencies: bilateral (**BIL**) and multilateral (**MUL**) organizations, global health initiatives (**GHI**), international (**iNGO**) and local (**INGO**) NGOs and networks (**NET**). Information shared by consultants (**CONS**), former aid workers and captured while observing the meetings is also taken into account. Although a reference is made on in-kind contributions such as technical assistance and capacity building whenever relevant, the focus of this paper rests mainly on financial contributions. This is because unlike in-kind support, financial support entitles an accountability relationship between donors and recipients.

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<sup>47</sup> Quotations are widely used in this chapter. However no attempt was made to include quotations from all the 50 interviewees. Rather, quotations were purposely chosen to elucidate and emphasize specific points considered essential for supporting the theory developed in this research.



**Figure 3.1 Decisions in health aid flows: a five-stage game.**

Note: This research focuses on the quality of aid therefore starting on the third stage of the decision ladder. This is a stage where donors have already decided how much aid to allocate to the health sector as opposed to others sectors.

(Source: author's illustration)

### 3.3 INTRODUCING TRUST

Although trust is a concept that is always intrinsic to literature on aid, specifically in the fields of conditionality and selectivity, the way this concept is formed and sustained as modulating the relationships between donors and recipients is rarely formalized in the literature. In an original approach to this topic [Mosley and Abrar \(2006\)](#) explain the modelling of relationships in which trust, used in the sense of social capital<sup>48</sup>, is the key variable. They build on previous work from [Mosley et al. \(2004\)](#) who argue that as long as trust remains about the fundamentals a poor performance of recipient countries is tolerated up to some level and a new form of conditionality could prosper. [Mosley and Abrar \(2006\)](#) argue that trust games could substitute the traditional non-cooperative games if there is sufficient trust between parties who would reach a collaborative equilibrium.

Conditionality failure occurs when the partner government, who agreed to undergo certain policy measures as a condition of the aid disbursed by the donor, fails to implement them. Failure to meet conditionality could result in a reduction of the agreed commitment amount and to a decision on not to disburse the next instalment or more drastically to withdraw the entire funding. This last scenario of conditionality failure is however atypical since the donor and recipient have no real interest on breaking down their relationship ([Mosley and Abrar, 2006](#)).

A more typical scenario of failure of conditionality occurs when disbursing continues but the donor fails to induce policy change. To illustrate this [Mosley and Abrar \(2006\)](#) model conditional program lending under an asymmetric one-sided game where the donor has a trusting behaviour and therefore disburses but the recipient is untrustworthy (see [Table 3.1](#)). In this case the donor has a payoff of 1 due to the fact that it continues lending and does not break the relationship. The game is asymmetric because it is not clear what the donor would gain from not disbursing to a trustworthy recipient and therefore the payoff in that case is zero but the recipient gains from being able to get the disbursement without being trustworthy (payoff of 3). The Nash equilibrium is *Trusting-Untrustworthy*.

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<sup>48</sup> This concept will be explained in section 3.3.1.

**Table 3.1 One-sided asymmetric Prisoner's Dilemma**

		Player 1 (Donor behaviours)	
		Trusting (e.g. disburse)	Not disburse
Player 2 (Recipient responses)	Trustworthy (e.g. comply with conditions)	2,2	0,-1
	Untrustworthy (e.g. not comply with conditions)	1,3	0,0

Note: Payoffs are given in order (player 1, player 2). Payoffs represent a measure of ordinal utility. Nash equilibrium is Trusting-Untrustworthy.  
(Source: Mosley and Abrar, 2006)

### 3.3.1 TRUST MADE RATIONAL: A COORDINATION GAME

By disbursing to an untrustworthy recipient the donor lacks credibility and the recipient does not comply with conditions. As described before, with this picture in place some scholars and policy practitioners, would vote for abandoning conditionality and use “selectivity” instead, i.e. give aid to countries which already have satisfactory policies. However Mosley and Abrar (2006) remember the problems associated with favouring selectivity, in particular the moral hazard, based on which after receiving aid the recipient is insured against poor performance and therefore does not have incentives to perform well. Based on numerous success stories of conditional aid Mosley and Abrar (2006) advocate that the old conditionality game should be transformed in what they call a *new-trust* or *quasi-trust game* so that when trust is made rational the optimal payoff is a trusting behaviour by the donor and a trustworthy recipient's response (see Table 3.2). This would be the payoff dominant Nash equilibrium (3,3).

**Table 3.2 A coordination game: trust made rational**

		Player 1 (Donor behaviours)	
		Trusting (e.g. disburse)	Not disburse
Player 2 (Recipient responses)	Trustworthy (e.g. comply with conditions)	3,3	2,-2
	Untrustworthy (e.g. not comply with conditions)	-2,2	0,0

Note: Payoffs are given in order (player 1, player 2). Payoffs represent a measure of ordinal utility. Nash equilibrium is Trusting-Trustworthy and Not disburse-Untrustworthy. (Source: Mosley and Abrar, 2006)

Mosley and Abrar (2006: 314) use trust in the context of social capital referring to the “formation of linkages within a specific network, consequent on the reduction of perceived risks within the network”. Those perceived risks come from the interaction between the backward looking (affective) and forward looking (predictive) components of trust. Affective drivers of trust are based on experience of past behaviour such recipient’s compliance and donor’s aid stability. Predictive trust is based on incentives for trusting behaviour and can include *actions* (e.g., program initiation), *signals* (e.g., corruption, military spending) and *procedures* (e.g., frequency of contacts).

To “insure” the donor is protected if trust disappears, Mosley and Abrar (2006) consider the use of alternative channels of delivery, like NGOs, that would replace the government and would act as the substitute agent in case the recipient is untrustworthy<sup>49</sup>. This leads to a second Nash equilibrium where the donor does not disburse to an untrustworthy recipient (0,0) (see Table 3.2). This is usually called a coordination game (also known as *assurance game* or *trust dilemma*) and basically reflects a situation where there is a conflict between cooperating (disbursing) and defecting (not disbursing) (see Table 3.2).

NGOs, as external agencies, can act as an incentive for the recipient countries to be trustworthy (the predictive driver of trust (Mosley and Abrar, 2006)). However, it

<sup>49</sup> Naturally, Mosley and Abrar (2006) assume that the alternative agent, e.g., NGOs are intrinsically trustworthy. This issue will be discussed latter.

might as well happen that instead of aiming for an increase of trust in one recipient, the donor can search for substitutes recipients which leads to vulnerability associated with the concept of trust. On one hand agencies might compete in terms of trust-relationships with the donor; on the other hand donors might want to look for a relative trust rather than an absolute one, i.e., they might want to disburse to the agent they trust the most. This is what the authors called *quasi-trust* games and it is where my research departs from. However unlike [Mosley and Abrar \(2006\)](#) I prefer not to call this parameter by “insurance” which is a concept that gives rise to the idea that the donor is protected ex-post in case trust is misplaced and therefore risk is compensated. Alternatively, I argue that nowadays donors have information ex-ante, as they have been operating in-country for some time which contrasts with [Mosley and Abrar’s \(2006\)](#) scenario where donors are still deciding: 1) who gets aid (the selectivity) and 2) the quantity of aid (allocation) at a global level (first and second stage decisions).

Donors have already played a simultaneous game in the majority of countries and have now to choose whether to disburse, and if so how based on trust from past relationships –the third stage. Donors are expected to have a more affective – backward looking than predictive-forward looking - behaviour based on past recipient’s behaviour. As a result aid decisions today might be understood within a sequential/dynamic game rather than a simultaneous game, as the player who chooses at the end has knowledge about the first player’s moves, due to continuing aid trust-relationship in the past. In this particular scenario, recipients have information about donors’ earlier decisions and operations/financing in-country. In addition, donors make a decision based on recipients’ response: either they disburse or they do not. Therefore unlike [Mosley and Abrar’s \(2006\)](#) I prefer to call player one actions as “donor’s choices” rather than “donor’s behaviours”.

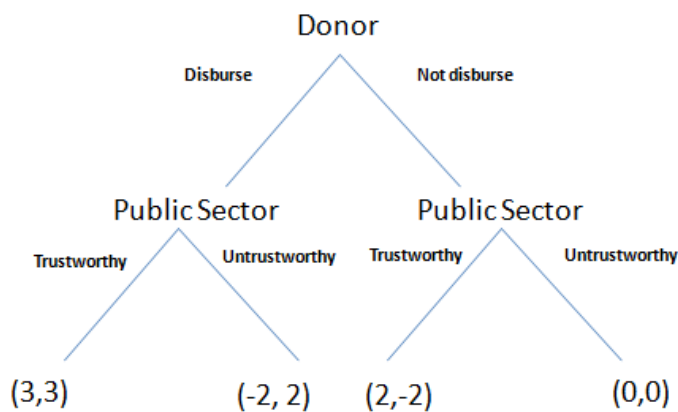
In this research I am concerned with the way donors make their decisions about how to channel health aid. As a consequence, I consider a framework where donors move first as they are the budget holders responsible for deciding where to disburse their funds. However, as stressed before, donors’ decision today is based on past experiences and relationships with the recipients, i.e., donors have



gathered information on how the recipient is likely to perform and will choose accordingly.

### 3.3.2 QUASI-TRUST IN A DYNAMIC GAME

Let's start by analyzing [Mosley and Abrar's \(2006\)](#) game ([Table 3.2](#)) now using a sequential/dynamic form. For this game I use backwards induction to calculate the Subgame Perfect Nash Equilibrium (SPE)<sup>50</sup> which takes into account what would be the best response of player two (the public sector), taking into account player one (the donor's moves) (see [Figure 3.2](#)). In case the donor disburses to the public sector, the latter would prefer to be trustworthy as it will receive a higher payoff ( $3 > 2$ ). However, if the donor chooses not to disburse to the public sector, the latter would prefer to be untrustworthy ( $0 > -2$ ). Knowing this, the donor would definitely choose to disburse and therefore receive a payoff of 3 rather than not to disburse and receive 0; this is the SPE. The *Not disburse-Untrustworthy* payoff that was a Nash Equilibrium in the [Mosley and Abrar's \(2006\)](#) game, when presented in a dynamic form represents a non-credible threat, i.e., the donor threatens that it will not disburse if the recipient is untrustworthy but at the end it fails to act accordingly to its plan.



**Figure 3.2 Quasi-trust game, sequential/dynamic form (based on [Mosley and Abrar's, 2006](#))**

*Note: Payoffs are given in order (player 1, player 2). Payoffs represent a measure of ordinal utility. Subgame perfect equilibrium (SPE) is Disburse-Trustworthy. Not disburse-Untrustworthy is not a credible threat. (Source: author's illustration)*

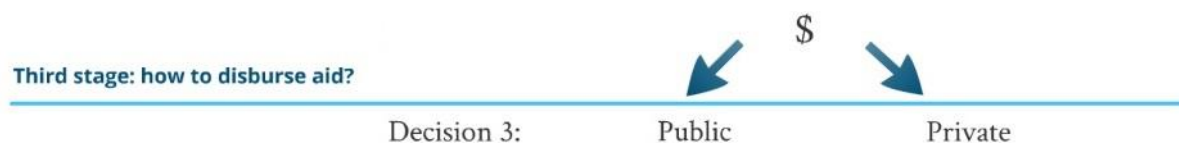
<sup>50</sup> In game theory a Subgame Perfect Nash equilibrium is a refinement of a Nash equilibrium used in dynamic games ([Hargreaves-Heap and Varoufakis, 2004](#)).

My argument is however that a *Not disburse-Untrustworthy* situation might in fact be a credible threat in a dynamic game if we consider that the donor has other options, such as disbursing to the private sector and it actually goes for it. This is how reality looks like for some donors when accounting for the private sector as an optimal alternative recipient of aid. The alternative player acts in the background of the donor-recipient game.

Using Mozambique and in particular the health sector as a case study my goal is to exemplify that over time a simultaneous game might have changed into a sequential game and this has implications on the choice of the provider. Particularly, donors' decision to disburse aid is influenced by the quasi-trust they have in different providers and not the complete trust. This acknowledges that some parameters act as substitutes of trust and impact directly on donors' decision to disburse aid and consequently on the choice of provider and aid modality. The theory developed in this research is grounded in qualitative evidence from interviews and observations of key meetings with the development partners for health in Mozambique.

### 3.4 THE THIRD STAGE DECISION: HOW TO DISBURSE AID?

#### THE RISE AND FALL OF TRUST



**Figure 3.3 The third stage decision: how to disburse aid?**

(Source: author's illustration)

#### 3.4.1 GAMES PLAYED IN THE HISTORY OF HEALTH AID IN MOZAMBIQUE

##### 3.4.1.1 *The beginning of aid*

The history of aid in Mozambique started during the civil war (1990-92) when emergency-oriented projects increased and with them the number of agencies that started operating in the country (Pavignani and Durão, 1999).

This was a situation where trust was not really taken into account in the sense that players were still getting to know each other. Initially player one, the donor, did not prefer to disburse to the public sector, i.e., it preferred disbursing to NGOs. The recipient, on the other hand, would prefer to get the money directly than through NGOs and would prefer not to comply with the conditions. As a consequence the equilibrium was a *Not disburse-Untrustworthy* situation since donors were naturally bypassing weak government structures and channelling aid through NGOs, who were implicitly trusted, to ensure that aid was getting fast to the ones needing it the most. Naturally this game was also driven by global development thinking, in a time where the discredit on state institutions was big and therefore aid agencies were more in favour of projects delivered by NGOs than state and budget support. At this time both donors and recipients did not have much information about each others' behaviours or motivations and therefore this was a simultaneous game (Table 3.3). The game was symmetric.

**Table 3.3 The NGO boom, 1990-1992**

		Player 1 (Donor choices)	
		Disburse	Not disburse
Player 2 (Recipient responses)	Trustworthy (e.g. comply with conditions)	1,2	3,-2
	Untrustworthy (e.g. not comply with conditions)	-2,3	2,1

*Note: Payoffs are given in order (player 1, player 2). Payoffs represent a measure of ordinal utility. Nash equilibrium is Not disburse-Untrustworthy.  
(Source: author's illustration)*

### 3.4.1.2 The formation of trust and move to a sequential game

Although external aid was essential to rebuild the social infrastructure, in particular the health system, many scholars started criticizing the flood of uncoordinated agencies that delivered inefficient work (Pavignani and Durão, 1999) and more importantly the increase of donors' economic power (Cliff, 1993) who were given total control. Frequently, the government did not have any knowledge about external funding coming to Mozambique or any investment decision by the agencies (Cliff, 1993). The government legitimacy was questioned while NGOs were acting independently launching their own projects with their own staff, supplies, budget and logistics. NGOs' funding was largely financed by bilateral and multilateral organizations which channelled their activities following their own political interests instead of actual population needs. "NGOs went where the donors wanted them to, not where the needs were greatest" refer Pavignani and Colombo (2001: 61). This was the time when the *Not disburse-Untrustworthy* equilibrium started being questioned in Mozambique and other aid-dependent countries, specifically when debating the role of the state in delivering services.

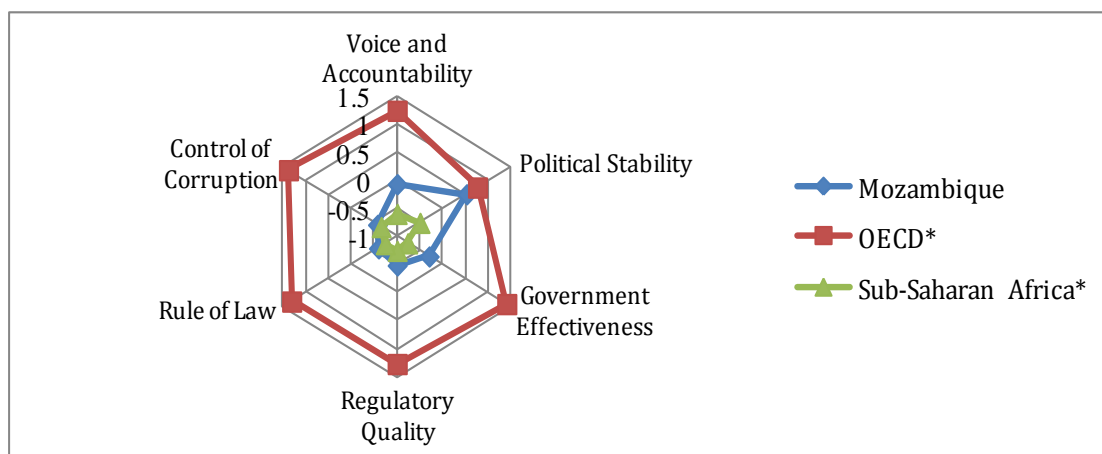
The health sector was characterized by fragmented, donor-assisted projects.

*"The war destroyed a lot of the infrastructure but after we had two things: we had lots of foreign agencies that came to help the MoH and that wasn't in a systematic way and we also had a MoH that still had a very socialist mentality trying to centralize everything. And I think those two things caused problems because what happened was that: 1) different agencies adopted different provinces but also 2) the way the MoH was headed was that everything had to be managed from Maputo which was very difficult*

*because it was not responsive from what was happening in the field”*  
[BIL/1]

The efforts to improve donor coordination and effectiveness started during the Normalization period (1994-1999) when original tools to manage external resources were introduced (e.g., sub-sectoral common basket funds) and elements of deregulation emerged. These changes did not just reflect changing circumstances in Mozambique but they also reflected changing global models of aid allocation. The policy dialogue between donors and the MoH gained strength, development aid agencies redirected their action to the new context of development, bilateral agencies were gaining more recognition than multilaterals and more qualified staff was contracted (Pavignani and Colombo, 2001). In 2000 it was signed the ‘Kaya Kwanga Conduction Code’ which established the central role of the MoH in the definition of health priorities and politics (Pfeiffer, 2003). Since then, a variety of coordination mechanisms (pool funding) have been developed (Ferrinho and Omar, 2005) (see Appendix A).

In 2001 Mozambique started reinforcing the health sector coordination and strengthening the national capacity. As a result it carried out a reform of health sector financing based on a Sector-Wide Approach (SWAp) which brought together twenty six donors in a partnership with the MoH committed to overcome the bottlenecks that limited aid effectiveness (Pavignani and Colombo, 2001). Donors considered Mozambique to be a “good, reliable partner to work with” (Commins *et al.*, 2009: 149), a “weak but willing state” (Patrick, 2006), defining it as an “easy partnership country” or a “stable low income country” where progress could be achieved if governments were willing to cooperate (Hog, 2008). When analysing Sub-Saharan Africa indicators, Mozambique was showing an overall better performance in all governance indicators (though still away from reaching the levels of OECD) (Figure 3.4).



**Figure 3.4 Governance indicators for Mozambique, OECD and Sub-Saharan Africa, 2006.**

Note: \* arithmetic average

Source: data from Kaufman et al. (2008).

At this stage, trust was starting to build up based on experiences from players' behaviour. The recipient was showing willingness to engage and comply with conditions and by providing stable aid donors were being trusted as well. A new equilibrium was emerging with donors disbursing to a recipient they would consider (relatively) trustworthy. Coordination between donors and recipient started taking place, communication increased; both the government and the donors started signaling they wanted to play a coordinated game, like the one previously illustrated in Table 3.2.

In 2005 Mozambique showed an active response in endorsing the Paris Declaration of Aid Effectiveness. At the macro level general budget support (GBS) was also gaining strength with an increase from 3% of total Official Development Aid (ODA) to Mozambique in 2000 to 21% in 2006 and 31% in 2008 (Visser-Valfrey and Umarji, 2010). Until 2008, three common funds (CF) were in place in the Health Sector (the Provincial CF, the CF for Drugs, and the PROSAUDE I). In 2008, the first two were merged into PROSAUDE II which became the only joint funding mechanism to the sector (Visser-Valfrey and Umarji, 2010). Donors and the MoH had a specific Memorandum of Understanding (MoU) where all the planning, budgeting and reporting cycle was settled. This modality helped reducing transactions costs and better link up sector processes with GBS (ibid). Nowadays around 30% of external funding to the sector is channelled through

PROSAUDE (*ibid*). As one informant described, in Mozambique donors and recipient were very *Paris-friendly* [BIL/2], which was not the same in other African countries like Tanzania or Ghana, for instance.

At this time a simultaneous game was changing into a sequential game where donors and recipient had some information about each others' behaviours and had already built a trust relationship. As one informant said

*"We used 20 years of building up trust with the system"* [BIL/3]

For some time donors and recipient were playing a coordination game reaching a *Disburse-Trustworthy* equilibrium. However this equilibrium was not the only one for some donors. Some donors would still disburse to NGOs making the *Not disburse-Untrustworthy* situation equally optimal, as they would prefer to play safer. The United States (U.S.), for instance, who became the largest contributor to the health sector, was not disbursing money to the government systems (they were off-treasury and off-budget<sup>51</sup>). In recent years vertical off-budget funding has increased and projects remained numerous. Some donors opted only for NGOs while others split between the public and private sector. The target of 50% of funds to be channelled through PROSAUDE has not yet been reached [BIL/2]. Why is that the case? Is it just about trust?

#### 3.4.1.3 A Quasi-Trust game: control as a substitute of trust

*"The whole idea is that we have sufficient trust and confidence in the functioning of the MoH realizing that the MoH knows a lot better than we do how to achieve its objectives. So if you fund someone else you are saying: I know better what to do (which I doubt very much from a practical point of view) or I do not trust the systems sufficiently."* [BIL/4]

Based on data collected on the ground and analysis of the literature I categorized three types of donors: a public sector donor, a private sector donor and a public-private donor.

The public sector donor either: i) believes that the best way to deliver aid is through the state or ii) seeks power to participate, to be involved and to influence domestic affairs. Based on this ideology, the public sector donor promotes trust

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<sup>51</sup> Off-budget refers to foreign funds that are not recorded in the approved budget or in the government accounts. Off-treasury happens when external financing is executed outside the governmental systems (Visser-Valfrey and Umarji, 2010).

and tries to ensure that donor-recipient's relationship is stable and strong. Particularly, for this type of donor there is more tolerance on what the fundamentals of trust are about. This is the donor that makes serious attempts to involve the public sector and therefore promotes greater ownership. As a consequence public sector donors advocate for sector budget support and a solid policy dialogue between donors and recipients' countries. In Mozambique these are the donors that contribute to PROSAUDE and are currently fourteen.

*"(...) it is a little like: if we have a business and we are buying shares in that business, these shares are the political leverages and dialogue we have with the government."* [BIL/3]

These donors also condemn an aid delivery model that is dominated by NGOs.

*"It is worrying... NGOs are saying that they are here to help providing services on behalf of the ministry but I think you should think about the future of Mozambique where you reduce the capacity of your ministry and you have to rely on international NGOs to provide services...where is the sustainability of such a system? And I think it is a consideration that each agency has to make - what is acceptable and what is not acceptable. And where do you serve your own interests and where it is beneficial to the ministry."* [MUL/1]

Literature had already recognized the drawbacks of using NGOs as a channel of delivery as their projects tend to lack sustainability (Edwards and Hulme, 1996), have high transaction costs (Quartey, 2005) and can hamper partner country's ownership (Marshall and Ofei-Aboagye, 2004).

However, NGOs can be fast and quicker implementers, which are important factors for outcome-oriented donors, here defined as private sector donors. They seek a relative and not absolute trust, i.e., they disburse the money to the agent they trust the most, usually a private sector agent. These donors maximize their utility namely in terms of *control* and more efficient implementation of projects. They want their projects to be implemented quickly and in order to achieve that they need a targeted intervention delivered by NGOs [BIL/4]. NGOs deliver projects which are the most earmarked type of aid; projects are delivered through parallel systems that bypass the government and the donors' *control* is obtained by substantial involvement in the contract with the agent, i.e. by deciding over the design, monitoring, disbursement, accountability and implementation (Foster and Leavy, 2001).



In some way donors face a trade-off:

*“With the PROSAUDE donors have more power but lose some control. It is a decision of power versus control.” [former MoH worker]*

Some donors do not want to choose between disbursing to the public or to the private sector. In ideological terms, these are the donors that believe there is place for everyone: public and private sector acting together in a coordinated way. A public-private donor spreads the risk over both sectors while securing at the same time control and influence. Global Health Initiatives are examples of these types of donors.

#### 3.4.1.4 The solution

From [Figure 3.5](#) we can see that a donor can choose among two possible strategies or a combination of them:

(1) {disburse} = {d}

(2) {not disburse, and disburse to the private sector} = {n}<sup>52</sup>

The recipient can have two behaviours once the money is disbursed:

(1) {trustworthy} = {t}

(2) {untrustworthy} = {n}

In a coordination game the recipient is willing to cooperate and have a trustworthy behaviour. Being so, when the donor (player 1) disburses to the public sector {d}, the recipient (player 2) prefers to be trustworthy  $P_2^{dt} > P_2^{dn}$  ( $3 > 2$ ). However, if the donor disburses to another agent {n}, the recipient has no incentive in performing as expected, i.e., to have a trustworthy behaviour  $P_2^{nt} < P_2^{nn}$  ( $-2 < 1$ ). Unlike [Mosley and Abrar \(2006\)](#) that assume a (0,0) payoff for a {n,n} strategy I consider that the public sector has a positive payoff, even if the money is not directly disbursed to them, since alternative agents are also working on behalf of the country - this means that the money is not lost but simple channelled differently ([Figure 3.5](#)). Knowing this, the public sector donor would prefer to disburse to the public sector, such that  $P_1^{dt} = 3$  and the players reach a SPE: *Disburse-Trustworthy* {d,t}.

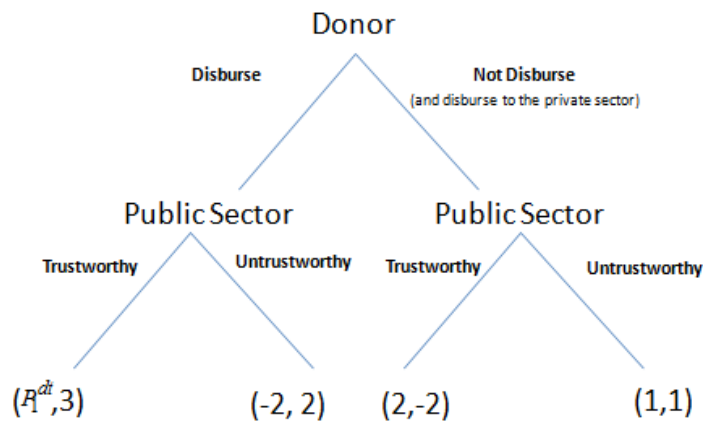
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<sup>52</sup> Throughout this chapter not disbursing to the main recipient implies disbursing to the alternative one.

The scenario is not the same for a private sector donor. This donor has in general less tolerance for untrustworthy behaviour, searches for trust in other agents, focuses on having control over their money and/or wants to ensure their programmes have real and measurable impact. In a game theory wording this means that disbursing to alternative agents represents credible threats. As a consequence a private sector donor prefers first to disburse to the private sector  $\{n\}$  since its trust on the recipient is limited and less subject to tolerance. In this case  $0 < P_1^{dt} < 1$  and the SPE is *Not Disburse-Untrustworthy*.

In the case of a public-private donor  $P_1^{dt} = 1$ , which means that donors might choose disbursing to both the public and the private sector. There are two SPEs: *Disburse-Trustworthy*  $\{d,t\}$  and *Not disburse-Untrustworthy*  $\{n,n\}$ . Both donor and recipient cooperate or both defect.

This last scenario frames a standard picture of donors and recipient's interactions in Mozambique. Different donors have different motivations, goals and behaviours. However the recipient has to have an overall strategy to respond to all types of donors. As illustrated above different donors have different strategies but the recipient keeps its strategy constant. What differs is the equilibrium. Taking into account that the recipient has to deal with different donors having two SPE represents the most typical scenario.



**Figure 3.5 Quasi-trust game, sequential/dynamic form.**

Note: Payoffs are given in order (player 1, player 2). SPE is Disburse-Trustworthy if  $P_1^{dt} = 3$ ; Not disburse-Untrustworthy if  $0 < P_1^{dt} < 1$  or both if  $P_1^{dt} = 1$ .  
 (Source: author's illustration)

### 3.4.2 MOZAMBIQUE TODAY

#### 3.4.2.1 Looking at the recipient: capacity as a substitute of trust

Analytical and empirical work has been done on the effectiveness of donors' aid implementation. The finding is that aid disbursements to recipient governments are at great risk of being mismanaged. Mismanagement of aid by the recipient government can either occur by diversion of aid through corrupt authorities/bureaucrats, what Svensson (2000) and Winters (2010) call aid capture, or by wasting aid due to lack of absorptive capacity of the recipient. On the other hand recipients with greater capacity might have better knowledge than the donor about what is best for the country and have a more cost-effective implementation. Donors thus want to increase the probability that their money will be used for the intended outcomes and to reduce the incentive of recipient governments to engage in corruption and rent-seeking.

So even if donors trust the public sector, lack of capacity can act as a substitute of trust. In particular, Dietrich (2011: 9-11) argues that donors are more likely to channel aid away from recipient governments and towards other aid implementers when the quality of governance in the recipient country is low.

Although recognizing that some private sector agents, in this case NGOs, might lack capacity as well, the scenario for a private sector game offers a much wider choice. Contrarily to the monopoly of the public sector, the private sector consists of a variety of NGOs, local and international, that in a fierce competition for funding increase the capacity standards of that market. In addition, donors can choose between different NGOs and assess which one is the most effective channel of delivery.

But do all donors behave the same way? For a public sector donor there is more tolerance in what the “fundamentals” of trust are about. On the other hand, donors which are outcome-oriented seek to improve their immediate aid impact and as a consequence they respond tactically to the capacity of the government by conditioning their delivery choices (Dietrich, 2011).

#### *3.4.2.2 Are capacity and control threatening trust?*

Independently of whether Mozambique’s MoH mismanagement also includes aid capture, there is definitely a problem of absorptive capacity that donors did not anticipate. In other words, public sector donors believed that a common fund for health, like PROSAUDE, would be an optimal situation given the recipient’s trustworthiness and expectation on its capacity.

Nowadays, it was noticed that donors are very concerned about the low absorptive capacity of the MoH which is causing mismanagement problems and it is also making them question their trust on the MoH, i.e., until when they will allow slippages of a given performance criteria defined by themselves.

*“The SWAp suggests that you have sufficient trust/confidence in national systems in order for them to do the planning and budgeting and implementation and reporting to the extent that you satisfactorily can monitor that. BUT THAT IS NOT THE REALITY!!!(talks effusively). The MoH is struggling with a basic capacity in this.” [BIL/4]*

Simultaneously, some donors are questioning the appropriateness of a common fund modality for a country like Mozambique. Sector budget support modality was in vogue in the past but for some donors it is becoming old-fashion.

*“In PROSAUDE we have a MoU that was designed in 2008 when we thought that capacity would be there; now we are realizing that capacity is no*

*longer there. It has taken us two years of trying and some donors are actually questioning the MoU and questioning if the modality is appropriate because it is not working as well as we thought.” [BIL/1]*

Thus, the new question for the donor community is:

*“What can we do for the SWAp, instead of what can the SWAp for us.”*  
**[HPG meeting]**

At the moment donors feel they are pushing for the SWAp to work while the fundamentals of SWAp defend non-push behaviour. So if SWAp is about trust, are donors pushing for trust? Donors feel they are pressuring for accountability<sup>53</sup> when the associated modality is not supposed to provide it. As referred in the literature (e.g., [Hutton and Tanner, 2004](#)) the SWAp mechanism involves a reform in the way aid is given and in the relationship between donors and the government, which means it will take time for the impact to be seen. In other words

*“We try to make sure that the money disbursed to MoH is spent wisely so we want to know how it is spent.” [HPG meeting]*

*“According to OECD, sector budget support is about whether you focus your policy dialogue as oppose to whether you focus your resources.”*  
**[BIL/2]**

But why are donors pressuring for accountability? Time-inconsistencies<sup>54</sup> are challenging donors’ behaviour; due to the financial crisis, head offices are pressuring for quick results, now more than ever. Donors are forced to have more control over their money and ensure accountability. Building trust relationships is being overcome by a desire to measure and provide results that are short-term. In the end, trust is under threat because of lack of recipient’s capacity or change in donors’ behaviour.

*“Growing demand for donors to be accountable to their own tax payers has increased focus on results chains (input-output-outcome-impact), results-based management and reporting, and monitoring and evaluation (M&E)*

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<sup>53</sup> Accountability here refers to the institutional arrangement through which the recipient reports the use of public funds, in this case externally financed, for public programmes and public service delivery ([Bernasconi and Tediosi, 2007](#)).

<sup>54</sup> Also called dynamic inconsistencies, time inconsistencies refer to situations when a player’s preference changes over time in such a way that a preference, at one point in time, is inconsistent with a preference at another point in time. In game theory it means that a player’s best plan for a future might not be optimal when the future comes ([Hargreaves-Heap and Varoufakis, 2004](#)).

*systems. One of the paradoxes here is that in order to demonstrate good practice, donors may consider that they need to by-pass the central element of the aid effectiveness agenda –i.e. national ownership.” (OECD, 2011a: 3)*

Shifts in global fashions are affecting donor behaviour just as much as donors perceive trustworthiness of recipient countries. This suggests that donors need to make extra efforts to demonstrate trust when the global climate is less conducive to working with governments.

*“To me the principles of Paris are “nice” but they don’t really work. You cannot take a country-a government with such low capacity, and have the kind of flexible financing agreement that we have and still satisfy our political and economic realities. I think there are good intentions and 2005 was a different point in time but right now every country is under extreme economic pressure: there are a number of very right-wing, increasingly right-wing, political governments around the world. And a tax-paying population that is educated and is asking us some questions and so when you have tax payers asking/challenging their governments in what they are doing, and those questions are driven by self-interest, not by concern about people in Mozambique- I think it changes things.” [BIL/3]*

*“The problem is that the context has changed a lot, there is more scrutiny, more emphasis on corruption and public financial management particularly because of the financial crisis in countries, but also because the MoH does not have the capacity to actually deliver on those things, to be more accountable and transparent. So we have the capacity issue on the recipient side and the crisis on the donor side.” [BIL/1]*

Increasingly, donors refer to the concept of fiduciary risk, a jargon borrowed from the financial sector referring to the risk that funds entrusted to an agent are not properly managed. In the case of PROSAUDE, “fiduciary risk can be defined as the risk that funds: (i) are not used for the intended purposes; (ii) are not properly recorded and accounted for; and (iii) do not achieve the value-for-money<sup>55</sup> objectives of the programmes they finance. A high fiduciary risk does not necessarily mean high corruption, but may simply result from organizational inefficiencies or capacity weaknesses.” Fiduciary risk covers both management systems and accountability mechanisms (Bernasconi and Tediosi, 2007: 4).

Communication which was part of the cooperative game, seems to be lacking at the moment when donors are failing to explain to the MoH the reasons why they are now pressuring for a non-accountable modality to be accountable.

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<sup>55</sup> “Value for money refers to the 3 e’s: economy (procuring inputs at a reasonable price), efficiency (link between input and output, i.e., service provision) and effectiveness (achieving development outcomes of the service provision).”(Bernasconi and Tediosi, 2007: 4)

*"I don't think we are communicating well enough that because of what is happening in Europe we have to explain better what is happening with our money. The idea of Paris was great on paper, I mean: give them the money let them manage-it is fantastic! And the minister was bought into that; into getting money without really being very accountable to how it is spent and we have changed the way we want the money to be reported on and we haven't really told them." [BIL/1]*

But does this mean that the recipient is not trustworthy anymore? While some donors think so, others do not agree. The question then is: will trust still remain about the fundamentals as proposed by Mosley *et al.* (2004)?

### 3.4.2.3 Trust under threat, a new game for Mozambique

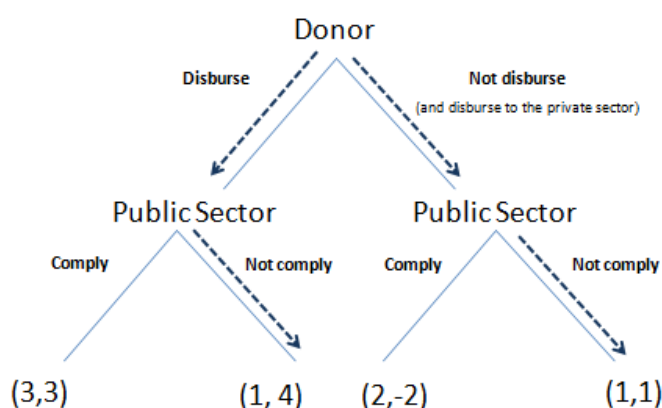
As we have seen before, different donors have different degrees of tolerance for slippages of performance and consequently trust. While some donors have not lost trust completely, for others trust is obsolete. If we substitute trust by SWAp, as suggested by the informants, this means that while for some donors SWAp might still work for others it means that SWAp is out of date. As a consequence, in the new game I simplify the recipient's response as being either "comply with conditions  $\{c\}$  or not comply with conditions  $\{n\}$ ", therefore removing the "trust" concept.

Mozambique's trust game is therefore moving from the scenario depicted on Figure 3.5 to that on Figure 3.6. The recipient does not comply with the conditions in any scenario, i.e., independently of whether the donor disburses  $\{d\}$  or not the money  $\{n\}$ ,  $P_2^{dn} > P_2^{dc} \wedge P_2^{nn} > P_2^{nc}$  ( $4 > 3$  &  $1 > -2$ ). The recipient's response seems to be unaffected by donor's allocation patterns which might also be a reaction from having to confront with different donors' motivations (see Figure 3.6). Donors in Mozambique now face a dilemma: is it still better to disburse the money to the public sector or to go privately<sup>56</sup>. Currently there are two new SPEs: a *Disburse-Not comply*  $\{d,n\}$  and a *Not disburse-Not comply*  $\{n,n\}$  (see Figure 3.6). While the first SPE gives donors influence but no control or accountability the second gives them control and effective implementation. What will donors do? Are donors willing to take the risk and disburse to the public sector while still gaining influence and knowing in the background this should be ideally the best way to deliver aid? Are

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<sup>56</sup> In addition, increasingly there is a third option: private-for-profit organizations and health care providers that although not being taking into account in this research are worth remembering.

donors going to be rational, pressured by the financial crisis and lack of recipient's capacity, and disburse money to the private sector? Are donors ready to give away influence to obtain control and fast short-term results? Insight to these questions will be given in the section 3.5 of this chapter.



**Figure 3.6 Trust under threat, a new game for Mozambique.**

Note: Payoffs are given in order (player 1, player 2). SPE is Disburse-Not comply  $\{d,n\}$  and Not disburse-Not comply  $\{n,n\}$ . Blue arrows point the direction of the equilibrium decisions.  
(Source: author's illustration)

### 3.4.3 CONCLUSION

This section only focused on *the third stage decision: how to disburse aid?* In this section I depart from debates around selectivity, conditionality and allocation of aid to arrive to the analysis of strategic interactions between donors and recipients in-country. Using game theory I acknowledge that donors and recipients respond tactically to each other's behaviour which is translated into opting for different strategies for disbursing aid. Based on work by [Mosley and Abrar \(2006\)](#) I shown how a trust-relationship between a donor and a recipient can be under threat when acknowledging the existence of alternative agents to whom aid can be disbursed. In particular I have shown that the history of health aid in Mozambique was modulated by an evolution in the concept of trust. Trust started to be built up after recognizing the need to coordinate the flood of foreign agencies operating in country, culminating in a coordination game when a SWAp was introduced. This game started to be threatened by substitutes of trust which included donors' desire for control and accountability together with a weak capacity of the recipient.



Nevertheless, not all the donors behave the same: public sector donors have more tolerance for what the fundamentals of trust are about. On the other hand, private sector donors are more outcome-driven. At the same time, a simultaneous game evolved into a sequential game when donors could opt for more informed strategies taking into account the recipient's behaviour in the past. Having all the information in hands the donor has to choose whether to still disburse to the public sector or not.

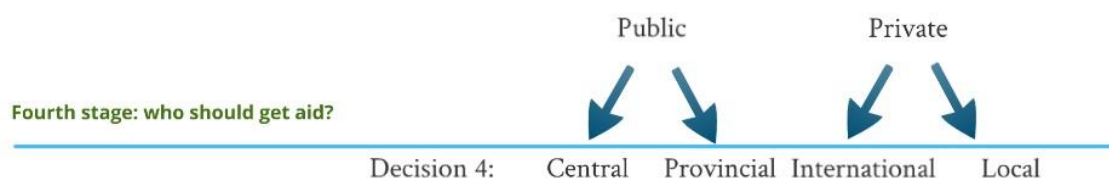
### *Time for a new game*

Fortunately for donors there are not only two options where if they decide for the public sector they have to disburse to the MoH and if they go for the private sector they have to go for a one-type NGO. Donors have another stage of decision where if they opt to channel aid to the public sector they can still do it in two ways: either they disburse centrally to the MoH or decentralize aid to the province-level through the Provincial Directorates of Health (DPS). Furthermore, if donors opt for the private sector they also face a dilemma: should they disburse to international or local NGOs?

These new possibilities provide alternatives for donors thinking that a SWAp approach is not the most effective way to deliver aid without them needing to necessarily bypass the government systems but simply choosing a different route - a straighter one that goes directly to the provinces. So how do donors choose to whom they should disburse aid?

### 3.5 THE FOURTH STAGE DECISION: WHO SHOULD GET AID?

#### REVEALING PLAYERS' IDENTITY



**Figure 3.7 The fourth stage decision: who should get aid?**

*(Source: author's illustration)*

From the previous game we know that the recipient did not comply with conditions either because of its lack of capacity or due to donors' change of behaviour. The donor has the option to still choose disbursing to the public sector or not. If it disburses to the public sector it can disburse centrally, to the MoH, or to the provinces, to the Provincial Directorates of Health (DPS). If it disburses to the private sector the donor can choose to channel aid through international or local NGOs.

Donors' choice on the channel of delivery, more precisely on who should spend their aid in-country is influenced by the recipient's (MoH) behaviour, in particular whether it follows their preferences or not. As we have seen, different donors have different motivations, goals and objectives which are translated into different preferences on the ground. But is the degree of attachment for a given set of preferences equal across donors? In this paper I am focusing on two types of donors' preferences: health priorities and choice of locations (in particular choice of provinces). The public sector and the private sector game are analysed separately. In the public sector game, player two is the central MoH whereas the DPS acts in the background. In the private sector game, player two is now an international NGO, with a local NGO acting in the background.

#### 3.5.1 GAME ONE: THE PUBLIC SECTOR GAME

A first differentiation between public sector donors and private sector donors was made in the previous section. Interestingly, I found that within those categories donors still differ from each other. To better illustrate what actually happens on the ground I further disaggregate public sector donors into two illustrative types of

donors. Donors who decide to continue disbursing to the public sector despite its lack of compliance with conditions can be divided into two main categories:

- the *centralist donor* is the one that: i) considers that the best way to deliver aid is through the central level and/or ii) seeks power to participate and be involved in the domestic affairs.
- the *local donor* is the one that acknowledges the role of the state to deliver services but is concerned about the long term impact of their actions and ways to address a system with serious capacity issues. This donor favours disbursing aid locally to provinces since they can have more control over their money, accelerate some processes and be closer to the service delivery.

#### *3.5.1.1 The centralist donor*

These donors are the ones trying to completely engage with the Paris Declaration of Aid Effectiveness contributing to the promotion of the government ownership, alignment and harmonization of aid. They believe that changing aid modality, i.e. discouraging PROSAUDE, is not going to alter things but changing the way they do things can lead to better outcomes [BIL/2]. Naturally, these donors tend to favour a longer-run approach that contrasts with the instant-results mode of the outcome-oriented donors. They consider that potential costs to the donor are compensated by centralizing aid.

*“In budget support and sector budget support we are paying for the policy dialogue and for political leverage.” [BIL/2]*

For this type of donor it does not make sense to fund a common fund like PROSAUDE and at the same time to fund a province or a project within the public sector [BIL/4]. According to these donors, allocating aid directly to the provinces diverts them from interacting with the central level where they think the main long-term development focus should be, allowing them to intervene in the way national systems should work.

These donors are the ones who also doubt of the capacity at the provincial level referring that decentralization, although appealing, is not appropriate in a country like Mozambique. In other words they often refer that “If they don’t have capacity at the central level, they certainly don’t have it at the provincial level.” For these

donors money that is disbursed to the provincial level adds another layer of complication in terms of financial accountability and weaker management [BIL/4].

Most of these donors give also aid to general budget support (GBS). Some of them advocate that this modality is ideally even better than sector-budget support. It has been noted that some donors may decrease their participation or even quit PROSAUDE as a result of their increased participation in GBS (Visser-Valfrey and Umarji, 2010).

A few donors, like some multilaterals, do not give financial contributions but instead provide in-kind donations, technical assistance to the MoH with a focus on strengthening the health system.

### 3.5.1.2 The local donor

The local donor is a donor that also recognizes the importance of the state to deliver basic health services. This ideology is reflected by the type of aid modality, where disbursing to the central level through a common fund approach is the preferred choice.

*“Where is this going? I just keep my fingers crossed that they will not go back to projects and programs support...and I do hope they continue to fund PROSAUDE...it is very difficult to argue that this is not the right way-that’s development aid - that is the direction we should move to. But I can understand if Mozambique or the MoH is not ready yet...” [BIL/1]*

However, these donors distinguish themselves from the centralist donors as they are aware of the current capacity issues threatening budget support. As one informant referred: *“we have to be realistic about the relationship we have with the MoH and align with the reality.” [HPG meeting]*

*“So the more we contribute to centralization (in weak systems), the more we contribute to corruption if you don’t have democratic systems...” [BIL/3]*

As a consequence, while some donors will opt for reducing their contributions to the central MoH others have risk distribution strategies, namely decentralizing aid to the provincial level. For some donors this decentralization process not only acts as insurance, but it is also part of their ideology on getting aid closer to the beneficiaries at a faster rate. These donors are aware that inefficiencies in financial

management systems at the central level create huge problems in the timely disbursement of aid and the quantity of aid that is somehow “lost”. What is happening with PROSAUDE right now, as donors have informed, is that the headquarters decide what is allocated into provinces and then provinces decide what goes into districts. At this moment there is no PROSAUDE money that reaches the districts at all. Although the government has begun engaging in a decentralization process, this process takes time. Donors recognize that improvement in budget allocation is not yet to take place and therefore they think they can help in the short-term by giving additional resources to the DPSs. By decentralizing funds, aid money is transferred on time and faster, a practice not commonly seen within the government, and this allows the DPSs to scale up their activities. However, these donors believe that if the system would strengthen enough enabling equitable and timely distribution of resources, than their contribution to the provincial level would diminish and eventually disappear with their role becoming a more technical/advisory one.

Donors disbursing to the provincial level are aware of the risks associated with the low capacity of DPSs but are prepared to work on building that capacity. Even though disbursing to the province directly still takes away donors’ power as budget holders, donors can at least have better control over their money than if they would disburse it centrally. Firstly, there are very few people working for the DPSs which facilitates tracing individuals that are untrustworthy. Secondly, donors have already built a trust relationship with some DPSs so they hold more direct accountability to each other than at a central level. Decentralization to provinces is not new in Mozambique; it dates back to the 90’s. For some time disbursing to the province-level was the preferred modality which ended up placing different donors in different provinces. Soon after, enforcement was made towards adopting the SWAp and disbursing to the provincial level decreased considerably with some provinces ending up not receiving more direct funds. Interestingly enough, it was noticed that the disappointment towards the SWAp is making this decentralization model flourish again [MUL/3]. Nowadays most of the donors still hold special connections with particular provinces due to their long-term relationship. Finally, there are fewer, or no other donors at the provincial level which enables a single

donor or a few of them to better engage and coordinate with the local system while at the same time being able to influence local decisions.

### 3.5.1.3 The solution

A public sector donor can choose among two possible strategies or a combination of them:

(1) {disburse, central} = {d}

(2) {not disburse, and disburse to the provincial level (DPS)} = {n}

The aid implementation agency, in this case the central MoH has two options once the money is disbursed and is under its management:

(1) {follow donor's preferences} = {f}

(2) {ignore donor's preferences} = {i}

For a centralist donor who chooses the strategy {d} the recipient, at the central level, can either follow donor's preferences or not. We might think that following donor's preference would be the wisest thing to do: first of all the recipient has not been complying with conditions (as we have seen in the previous section) and therefore aligning with the donor now would show a desire to cooperate and keep receiving funds. However this might not work for three reasons. Firstly, even if the recipient wants to consider donor's preferences it might not end up doing it:

*"The resources' allocation is not clear. In theory it works, but you don't see it applied in practice. Everything is written but at the end it does not work." [MUL/2]*

Some donors attribute the recipient's response to lack of capacity while others are more convinced that it is lack of will. Secondly, ideologically, the recipient might argue it knows better than the donors which are the country's priorities and might not want to follow donors' preferences. This was what happened in 2005 when the MoH in a very nationalistic fashion tried to get rid of all foreigners working at the MoH while at the same time tried to centralize everything, even what had already been decentralized. This recipient's behaviour ended up creating a lot of tension with the cooperation partners. The leadership of the MoH has changed and the new one engages much more with the health partners. Nevertheless, the new MoH's ideology still impacts on the way aid is delivered.

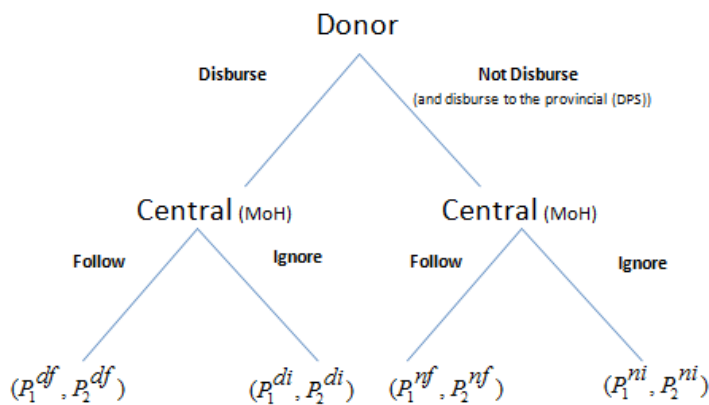
*“Mozambique is still a communist country with a communist ideology and communist way of thinking. They say they have broken out and are now socialist, democratic, whatever, but the whole line of thinking is so centralistic. For example, in the Ministry of Health national directors cannot make any decision, whatever small it might be, without asking the minister for permission.” [BIL/3]*

Finally, although we are here abstracting from coordination issues, which is the topic of Chapter 4, at this stage we have to consider that recipient countries do interact with a variety of donors who have different preferences, strategies and budgets. As a consequence, the recipient is not able to consider all donors’ preferences, i.e., it has to harm some donors’ preferences in detriment of others.

So if the donor chooses  $\{d\}$  the recipient will prefer ignoring the preferences  $P_2^{di}$ , such as  $P_2^{di} > P_2^{df}$  (Figure 3.8). In case the donor decides to go for strategy  $\{n\}$  the recipient might have two reactions: either it follows donor’s preferences  $\{f\}$  or ignores them  $\{i\}$ . Acknowledging that there is a power struggle between the central and the provincial level in Mozambique, the recipient’s reaction to the donor’s choice of disbursing to the DPS is to ignore donor’s preferences and disburse aid according to its own criteria ( $P_2^{ni} > P_2^{nf}$ ). The recipient does not have any incentive to follow donor’s preferences. This attitude signals that the recipient dislikes the fact that aid is disbursed locally and not centrally, and in case the donor continues to do so, the recipient would keep on not following donor’s preferences. The recipient’s utility can be ordered such as  $P_2^{di} > P_2^{df} > P_2^{ni} > P_2^{nf}$  (Figure 3.8).

The main difference between a centralist donor and a local donor is that the former will always prefer to disburse to the central level even if the recipient ignores its preferences such that  $P_1^{df} > P_1^{di} > P_1^{nf} > P_1^{ni}$  (see Figure 3.8). Some donors in Mozambique, even aware of all the capacity issues threatening the effectiveness of a common fund managed by the MoH, still considered it to be the best way to deliver aid and decided to maintain or even increase their contributions to this modality. Knowing that their best options are  $(P_1^{di}, P_2^{di})$  or  $(P_1^{ni}, P_2^{ni})$  the centralist donor would choose  $(P_1^{di}, P_2^{di})$ . The SPE is then *Disburse-Ignore*  $\{d,i\}$ .

On the other hand, a local donor would prefer to spread the risk and disburse both to the central  $\{d\}$  and provincial level  $\{n\}$ . This donor does not have any incentives for disbursing only to the provincial level as it would lose all its influence and chance of a policy dialogue with the central level. Knowing all the facts and acknowledging that the recipient might ignore its preferences, the donor cannot do more than spreading the risk over two different providers. In that case there are two SPEs: *Disburse-Ignore*  $(P_1^{di}, P_2^{di})$  and *Not disburse-Ignore*,  $(P_1^{ni}, P_2^{ni})$  taking into account that  $P_1^{di} = P_1^{ni}$ . This does not change however the assumption that in an ideal world the local donor would still prefer  $\{d\}$ , and therefore  $P_1^{df} > P_1^{nf} > P_1^{di} : P_1^{di} = P_1^{ni}$ .



**Figure 3.8 The Public Sector Game.**

Note: Payoffs are given in order (player 1, player 2). Payoffs represent a measure of ordinal utility. For a centralist donor the SPE is  $(P_1^{di}, P_2^{di})$ . For the local donor there are two SPE  $(P_1^{di}, P_2^{di})$  and  $(P_1^{ni}, P_2^{ni})$  taken into account that  $P_1^{di} = P_1^{ni}$ . (Source: author's illustration)

### 3.5.2 GAME TWO: THE PRIVATE SECTOR GAME

The private sector donor tends to limit the scope of state activity in untrusting environments. They advocate for disbursing aid to the private sector through international and local NGOs, multilateral organizations and private contractors. For these donors the main goal is to improve health indicators effectively and efficiently and if that means going through NGOs because the government lacks capacity, that should be the way of doing it **[BIL/5]**. In addition, disbursing to the



public sector has the problem of lack of attribution of results and therefore aid agencies cannot observe the direct link that goes from their money to the impact on the ground.

NGOs, on the other hand, have to make sure donors know them, know their know-how, their strengths, so that whenever any project crosses their minds they think about them **[iNGO/1]**. Local NGOs are important for donors as they are the closest point to the beneficiary. However not all local NGOs have the desired capacity to implement donors' projects. As informants mentioned

*"We want to give more to local NGOs, but first there are not many and second they lack capacity."* **[BIL/9]**

*"If giving to local partners does not help to improve health indicators that means we have to rethink it..."* **[BIL/5]**

As a consequence, donors who are outcome-driven and seek short-term priority indicators tend to disburse their funds to international NGOs who can then channel some funds to local NGOs. Sometimes donors also fund multilateral organizations that work on the ground. According to the informants, organizations such UNICEF or UNFPA<sup>57</sup> are important implementing partners. One informant noted that "multilaterals have three important characteristics: they are effective, work on multi-level operations and have the capacity to quickly mount interventions and sustainably ensure long-term development programs." **[MUL/3]**

#### *3.5.2.1 Do NGOs anticipate donors' preferences and expectations? An ex-ante game to disbursement*

In addition to analysing the capacity of potential aid implementers, donors have a set of different preferences, such as disbursing aid to particular provinces or to tackle specific diseases. Do NGOs take into account donors' preferences when applying to funds?

*"Donors announce they are going to put out a request for proposals. However they have their restrictions, e.g., it has to be focused on newborn or maternity or only NGOs that begin with S can apply or whatever they want - it is their money! And we need to pick that up and say: OK fine let's respond to that and see if it fits in our profile, if it fits in what we want to do and what we think is needed."* **[iNGO/1]**

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<sup>57</sup> UNICEF stands for United Nations Children's Fund and UNFPA stands for United Nations Population Fund.

By considering donors' preferences NGOs are taking into account the type of project that is preferred, the donors' expectations in relation to health indicators, the location of projects, the area of specialization, etc. Some NGOs anticipate donors' preferences and try fitting them with their goals. In this case, NGOs bear the cost of having to adapt their strategy but help guaranteeing future funding and securing the existence of the organizations. This situation is particularly critical for small or local NGOs. Small NGOs or NGOs that only rely on donors' funding for their survival tend to be more dependent of donors' preferences and expectations. Local NGOs are an example of a small type of NGO that cannot compete with international ones. These organizations cannot afford to deviate from aligning with donors' preferences otherwise they cannot even sustain themselves. In short, donors propose a highly conditional donation.

*"Donors come to us and say: I have the money for this project. Either you align or you don't. Honestly speaking we end up compromising ourselves because we are in a context of lack of resources." [INGO/1]*

If the NGO ignores donors' preferences, it is signalling that it is reluctant to accept preconditions on receiving such funding. By doing so, the NGO should look for alternative sources of funding.

*"We are an independent organization only financed by individual donations. This is core in our mission/vision. We do not feel "pressured" by the donors and we feel free to talk and act as we think. If we were "non-independent" we would have to make the donors feel pleased about our behaviour in order to get funding for the next project and therefore we would not express "whatever we would like to" but would act strategically in order to capture donor's attention and guarantee the next funding." [INGO/2]*

For the donor, this expectation of compliance and alignment with their activities acts as a predictive driver for trust. Private sector donors want to disburse their money to potential trustworthy agents, i.e., to agents that will follow their preferences. Trust relationships are as important in the private sector game as in the public sector game. Donors in Mozambique have now a very good understanding of which NGOs they are willing to work with and which ones they trust the most. In some way they have created a kind of path dependent relationship with some NGOs. New incomers or local NGOs face some barriers to enter in this market. They need to create a good reputation from scratch in order to attract donors' attention while they compete with incumbents, usually large-

scale NGOs, most of them operating in the country for a long time. More on NGOs' competition will be discussed on Chapter 4 of this thesis.

### *3.5.2.2 The ex-post game of disbursement: large versus small-scale donors*

NGOs' strategic behaviour depends on the type of donor they are dealing with. Donors can be divided into large-scale or small-scale donors according to their donation volume.

A large-scale donor has more leverage on the disbursement than a small-scale donor. A large-scale donor is very goal oriented and gives less flexibility for the agent to independently perform its choices. The NGO has to keep a regular communication with the donor informing of each project's current progress. The donor's donation is attached with conditions on obtaining specific results such as improvements in specific health indicators. A large-scale donor wants to ensure the money is spent on projects that are its priority and in locations of its choice. For the NGO it is important to be trustworthy while showing strong capacity so as to successfully implement the project according to the donor's expectation but also to keep a good reputation in order to secure future funding. A NGO working with a large-scale donor will always want to comply with the expectations and follow donor's preferences. Not complying means not receiving more funding from that donor and damaging its reputation.

*"If it is not in the proposal we can't do it. Everything has to be agreed before the projects starts." [iNGO/3]*

Some donors like the U.S., are extremely demanding and want NGOs to report every single action that is taken under their project. One informant referred that

*"As an employee you are a stamp of the U.S. government. They want to know everything-when someone travels you have to have their permission, when you buy computer you have to have their permission, and so on." [iNGO/1]*

On the other hand, a small-scale donor lacks the power to pressure the NGO. The monitoring of information is less frequent and the NGO has more flexibility and autonomy in designing and implementing its projects. The incentives of following

donors' preferences depend on the size of the NGO they are dealing with. Large-scale NGOs have more leverage than small-scale NGOs<sup>58</sup>.

### 3.5.2.3 The solution

The private sector donor has two options:

- (1) {disburse, international NGO} = {d}
- (2) {not disburse, and disburse to local NGO} = {n}

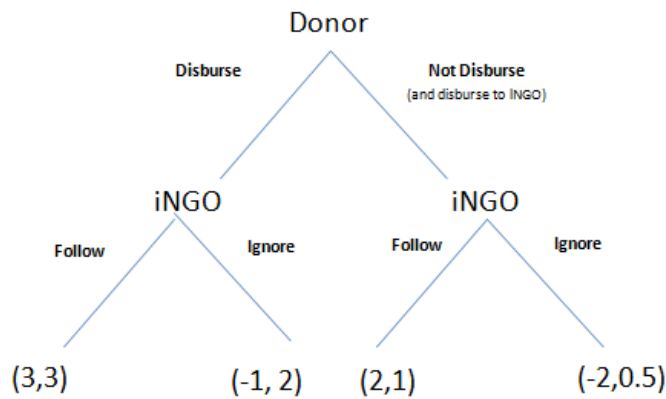
Once a NGO has secured funding it has two options:

- (1) {follow donor's preferences} = {f}
- (2) {ignore donor's preferences} = {i}

A large-scale donor will always prefer its agent to follow its preferences such that  $P_1^{df} > P_1^{nf} > P_1^{di} > P_1^{ni}$  (see Figure 3.9). In the case of a large-scale donor, the international NGO would prefer to follow donor's preferences after the money had been disbursed  $P_2^{df} > P_2^{di}$ . The international NGO maintains its behaviour if, for some reason, the donor decides to disburse to local NGOs ( $P_2^{nf} > P_2^{ni}$ ). This is because NGOs want large-scale donors to recognize their work, so the closer they work to donors' preferences the better. A donor knowing this would then opt for disbursing to international NGOs {d,f}, reaching a SPE where they disburse to NGOs who follow their preferences ( $P^{df} = 3,3$ ) (Figure 3.9).

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<sup>58</sup> Actual examples of how these relationships play out namely in terms of what is the money disbursed towards and where to, will be discussed in the fifth stage decision, particularly in section 3.6.2 of this chapter.

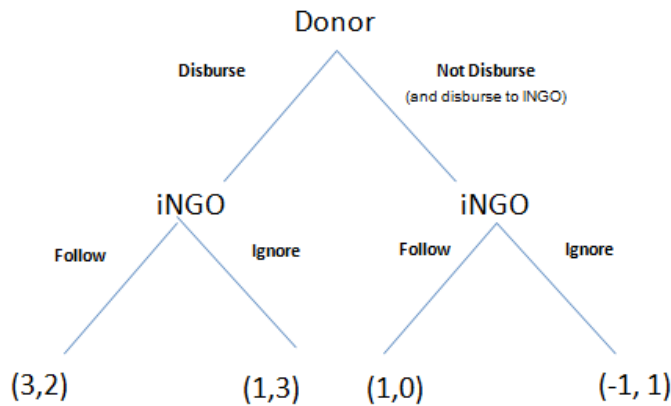


**Figure 3.9 Private Sector Game with a large-scale donor.**

Note: Payoffs are given in order (player 1, player 2). Payoffs represent a measure of ordinal utility. SPE is Disburse-Follow {d,f}  
 (Source: author's illustration)

In the case of a small-scale donor, the NGO's response depends on its size. As we have seen before, small NGOs tend to consider donors' preferences and expectations in order to attract funding. Likewise, if they are being granted money by a donor they do not have any incentive not to follow its preferences. The game of a small-scale donor with a small NGO is pretty much like the game depicted in Figure 3.9 where both donor and NGO's utility order remains, i.e.,  $P_1^{df} > P_1^{nf} > P_1^{di} > P_1^{ni}$  and  $P_2^{df} > P_2^{di} > P_2^{nf} > P_2^{ni}$ .

On the other hand, if the small donor disburses to a larger NGO (which holds increased leverage) the later would prefer to ignore donor's preferences or at least hold more flexible arrangements (see Figure 3.10). Facing this reality the donor would still prefer to disburse to international NGOs than to local NGOs who cannot compete in terms of capacity ( $P_1^{di} > P_1^{ni}$ ). By doing so, donor and NGO sign a softer contract where more flexibility from the donor is required and more autonomy from the NGOs is agreed upon. The SPE is Disburse-Ignore {d,i}, with ignore actually corresponding to negotiated and flexible approaches (Figure 3.10).



**Figure 3.10 Private Sector Game with a small-scale donor and a large NGO.**

*Note: Payoffs are given in order (player 1, player 2). Payoffs represent a measure of ordinal utility. SPE is Disburse-Ignore.*

*(Source: author's illustration)*

Donors in Mozambique now want to disburse to local NGOs. However due to capacity issues of these organizations it is not clear if they would ever get to an equilibrium, i.e. if donors would prefer to disburse to local NGOs given their lack of capacity. That is why at the moment donors prefer either to contract international NGOs, who would then sub-contract local NGOs, or to disburse small amounts of money to local NGOs that would not imply large risks, while at the same time disbursing to international NGOs.

### 3.5.3 GAME THREE: THE PUBLIC-PRIVATE GAME

I consider two types of public-private donors:

- Horizontal public-private donor (HPPD)
- Vertical public-private donor (VPPD)

#### 3.5.3.1 The horizontal public-private donor

A HPPD focuses on strengthening the health system as a whole. These donors advocate for horizontal health programmes that address a broad range of needs or try to coordinate related disease programmes. They are ideological closer to the public sector donors, more specifically to the local donors. However they consider that the private sector has a role to play and both games can co-exist in a coordinated way.

HPPD donors do not see NGOs' support as a sustainable and major alternative for a low-capacity public sector. Most of these donors tend not to provide large amounts of project support to NGOs or when they do so, it represents a very targeted, focused and small section of their budget, i.e. it does not change their ideology but simply complement their work. As a result, giving private contributions is usually *additional* or *complementary* to their standard budget. *Additional* means that donors' support to some small NGOs, is not in detriment of their preferred contributions to the public sector. *Complementary* refers to situations when donors require NGOs' assistance to help them accomplish a certain goal in a given province or project they are supporting.

As part of the "going local" slogan, so much pronounced by some, these donors would prefer supporting local NGOs, rather than big international NGOs, although as we have seen it has not been a common practice at the moment.

Without necessarily funding for governance, these donors believe that funding for health at the local level by providing health budget support at the province-level and disbursing to local NGOs which are closer points of service delivery, acts as a means of supporting decentralized democracy and good governance.

#### *3.5.3.2 The vertical public-private donor*

A VPPD focuses on target medical interventions and disease-specific programmes. A VPPD often has business aptitude and strives for timely and quantitative results. VPPDs revise the grants provided to agents based on performance indicators, i.e., they favour a special type of conditionality -performance-based funding- where disbursing is subject to good performance and attainment of results as previously agreed. These donors can either fund the public or the private sector. For instance, the Global Fund to Fight for Malaria and AIDS (GFATM) when disbursing grants nominates one or two organizations to serve as a principal recipient, responsible for the local implementation of the grant which might include oversight of sub-grants given to sub-recipients. Principal recipients can be governmental, non-governmental or private organizations (national or international). If sub-recipients are appointed these are responsible for implementing a portion of a grant, reporting directly to the principal recipient. A huge difference between a VPPD

donor like the GFATM and a public sector or a private sector donor is that the VPPD is mainly understood as a financing mechanism to which individual countries have to apply for grants. This is different from other types of donors who choose to get into a given country with no pre-application from that country. VPPDs might also provide technical assistance in support to their vertical initiatives in order to strengthen the management and capacity building and increase the success of their programmes.

### 3.5.3.3 The solution

A public-private donor can choose between four different strategies or a combination between them:

- (1)  $\{\text{disburse, central}\} = \{d\}$
- (2)  $\{\text{not disburse, and disburse to provincial level (DPS)}\} = \{n\}$
- (3)  $\{\text{disburse, international NGO}\} = \{d\}$
- (4)  $\{\text{not disburse, and disburse to local NGO}\} = \{n\}$

The recipient can either:

- (1)  $\{\text{follow donor's preferences}\} = \{f\}$
- (2)  $\{\text{ignore donor's preferences}\} = \{i\}$

For the HPPD the SPE is the same that was reached in both the public and private sector games. In the public sector game the donor has a behaviour that is closer to the local donor and therefore the SPE is either *Disburse- Ignore*  $(P_1^{di}, P_2^{di})$  and *Not disburse-Ignore*,  $(P_1^{ni}, P_2^{ni})$  taking into account that  $P_1^{di} = P_1^{ni}$ , i.e. the HPPD will disburse both to the central and provincial level. This donor can find two other SPEs that complement the public sector game with the private sector game:  $\{d,f\}$  or  $\{d,i\}$  depending on the scale of the donor. The choice between public or private strategies depends on a variety of factors such as the balance between influence and control, the capacity at the central level, the capacity and needs of NGOs, the strategy of the donor and the wider economic and political context. This donor has therefore flexibility in terms of whom to choose to implement their programmes.

Let's now consider a situation where the MoH at the central level is the principal recipient of a vertical fund by a VPPD. In that case, the MoH is under a rigid contract and a constant monitoring process, which differs from the case when



donors provide funds to a common fund that is managed by the MoH. In this case, the MoH is obliged to follow the VPPD's indications in particular the disbursement of aid to specific purposes, diseases or programmes, i.e., the recipient has to strictly follow the donor's preferences. If the recipient ignores those, the VPPD will cancel the next disbursements and in the future it would choose to play a private sector game instead. The recipient will therefore always want to follow the donor's preferences. In case the VPPD decides to go for an alternative recipient (DPS), the MoH does not have any incentive to follow donor's vertical preferences. The SPE is then disbursing to the MoH who then follows donor's preferences. One could argue that due to fiduciary risks, performance-based indicators might be compromised in Mozambique right now. That is true. The GFATM, for instance was not pleased with the MoH's performance last year. However, I do not consider it to impact on this SPE since I am considering the recipient's response of following donor's preferences in terms of disbursing to preferred locations and health priorities, i.e. "qualitative dimensions" of performance represented by an ordinal and not cardinal utility.

In the case that the VPPD plays a private sector game it would reach the equilibrium of disbursing to international NGOs which follow donor's preferences. Taken into account that a VPPD is always a large-scale donor the recipient will always follow donor's preferences.

#### 3.5.4 CONCLUSION

This section departed from the third stage decision when donors decided how to disburse aid, choosing between the public and the private sector. In *the fourth stage decision: who should get aid?*, it is recognized that donors' options are not limited and vary greatly which are translated into different possible strategies. The recipient's response is about deciding to follow donors' preferences or not, with preferences referring to the ordinal utility given to certain locations and health priorities. Three types of games were analysed: a public sector game, a private sector game and a public-private game. In each game different categories of donors arose which had implications on both the way donors chose and on the recipient's reaction to those choices. In public sector games, where aid is disbursed to government systems, the recipient does not follow donors' preferences. While

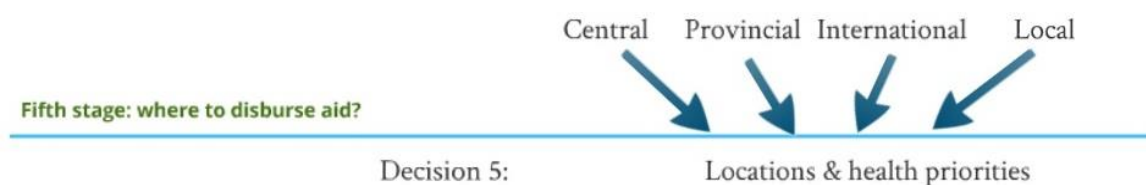
centralist donors would still prefer to disburse to the MoH, local donors prefer spreading the risk and decentralize to the provincial level. In the private sector game large-scale donors can pressure for NGOs to follow their preferences however the scenario is not the same for a small-scale donor where the NGO's response depends on its size, i.e., large NGOs tend to have more leverage than small NGOs. In a public-private game donors can opt between four strategies or a combination of them. There are two types of public-private donors: HPPD and VPPD. The VPPD by providing vertical funds, focus on having timely and fast results and therefore the recipients are under rigid contracts that have to be followed and applied. The SPEs are a combination of those found in the public and the private sector games.

### *The implications of following or ignoring donors' preferences*

Donors' strategic paths have strong implications on where is aid actually disbursed on the ground, to which locations and to which health priorities. A recipient that follows donors' preferences has few or no input in the decision of where aid should go. Contrarily, a recipient who opts for ignoring donors' preferences is signalling its will to exercise authority on the definition of priorities. How is this translated into practice? Which areas and locations get more funding? Why is it so important for some donors to define their priorities and what are the implications of different principals' behaviours? How flexible are contract arrangements with the agents and how is ownership manifested in practice? These are some questions that will be addressed in the next section.

### 3.6 THE FIFTH STAGE DECISION: WHERE TO DISBURSE AID?

#### DECISIONS ON THE GROUND



**Figure 3.11 The fifth stage decision: where to disburse aid?**

(Source: author's illustration)

#### *Whose decision now?*

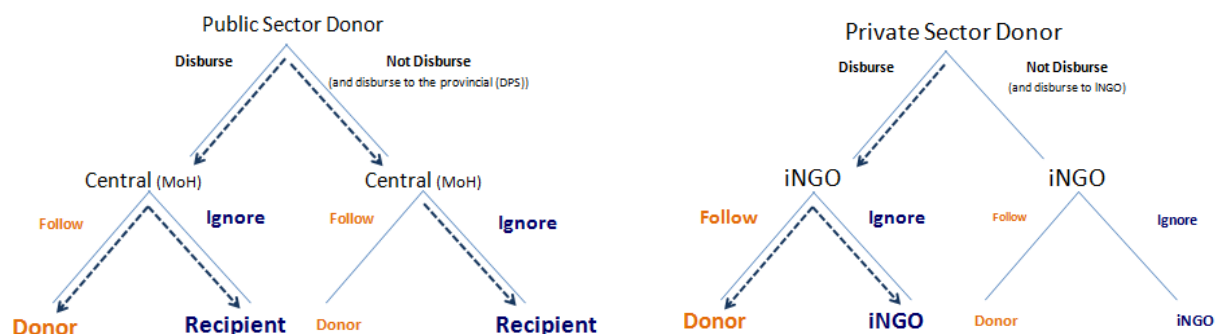
After disbursing to the public and/or the private providers, principals have to decide where to disburse aid. I focus on two main decisions regarding aid disbursement: health priorities and locations' preferences (proxied by provinces).

According to the game theoretic model, it would now be the turn of the donor to decide – and by this I mean “play” - again. However, this conceptualization of a donor as the principal and the recipient as an agent suffers some changes in practice. For instance, if the recipient (MoH) is dealing with a vertical donor it has to follow its preferences, acting predominantly as an agent obliged to a given contract. However, if a common fund is entitled to the MoH, it starts a new role as a principal holding power for deciding where and how to disburse the funding. This is particularly true if the recipient does not follow donors' preferences.

A similar logic applies to the private sector game. NGOs which are not granted money by donors or have flexible agreements can exert some degree of autonomy when deciding the direction of their activities, acting as principals of their own budget. However, this does not hold for the most typical case where NGOs are “acting as the arms and legs of a given donor” [iNGO/1 & CONS/1], i.e., the agent is under a contract or rigid cooperative agreement (see [Figure 3.12](#)).

This section will discuss the consequences on budget disbursement decisions when donors and recipients act as principals or agents. This is the stage where the final disbursement decisions are made. In particular this is where principals

exercise their power and are responsible for the final decisions of the five-stage donor-recipient game.

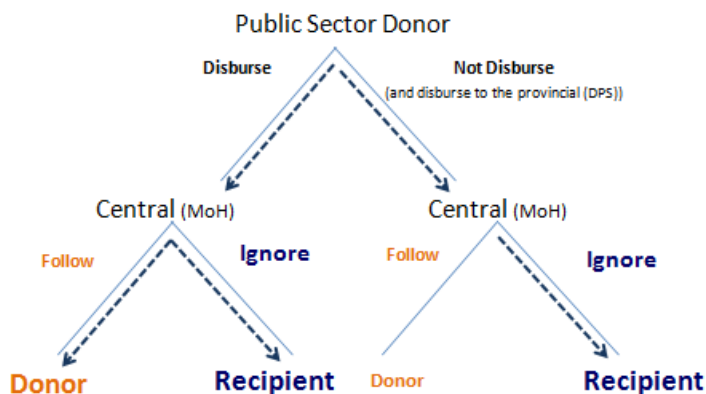


**Figure 3.12 Whose decision now?**

*Note: The public sector donor has two options: to disburse or not to disburse to the central level (MoH). The MoH can then follow or ignore donor's preferences; if it follows it acts as an agent and the donor is in charge of the disbursement decisions. By ignoring donor's preferences the recipient (MoH) acts as a new principal. The same logic applies to the private sector donor.*

*(Source: author's illustration)*

### 3.6.1 THE PUBLIC SECTOR GAME



**Figure 3.13 The public sector game: whose decision now?**

*(Source: author's illustration)*

#### 3.6.1.1 Recipients as agents: the implications of following donors' preferences

Recipients act as agents when donors decide where they want their money to go to. Vertical donors, including those who disburse to the public sector, have earmarked money designated for different purposes. Although recipients might have to sub-contract other sub-recipients or implementing agencies, they are under the guidance of vertical donors who have strict and concrete goals. The

Global Fund and PEPFAR (U.S. President's Emergency Plan for AIDS Relief) are some of the major donors in Mozambique. While the former focuses on three diseases: Tuberculosis (TB), malaria and HIV, the latter works exclusively with HIV. For these donors focusing their aid on one area is the key to achieving best results. Not surprisingly, there has been a disproportional funding for these diseases. These donors tend to focus on provinces where the prevalence of these diseases, in particular HIV, is higher. Although they tend to cover a vast geographic area of the country, their main focus is on the Southern provinces, known for having worse HIV-related outcomes.

One of the main criticisms appointed to these donors by some informants is that they discourage a horizontal approach to the health system. Even though some donors now started integrating health systems' strengthening in their strategies; their focus is primarily on specific diseases with the health systems being improved as a consequence. For instance, some donors built a number of health centres, labs and trained medical staff however these were always HIV-related. These donors acknowledge that ultimately they are looking towards HIV outcomes and those are what they measure; however they also have a secondary impact on other areas such as building infrastructure, human capital, etc.

*"At the end our funding ends up covering wider parts of the system than just HIV; however the focus remains specifically on the disease and not on the system." [GHI/1]*

By following donors' preferences the recipient's role becomes passive. This is reflected on the compromise to fund specific areas. At the moment HIV is totally externally funded and the MoH does not seem to be doing anything to contradict it, i.e. to start providing internal resources to HIV. Nowadays, donors are becoming more critical about the lack of government ownership in HIV programmes. An immediate consequence of this dissatisfaction was translated into major donors withdrawing their funding from the National Aids Council.

### 3.6.1.2 Recipients as principals: the implications of ignoring donors' preferences

#### *Defining health priorities*

As soon as the recipient (MoH) receives sector budget support (PROSAUDE) it is its responsibility to manage and disburse it accordingly. While until now the recipient was only negotiating at a higher macro level from this moment on, the recipient changes its level of action to the ground level. As a principal now accountable to the country beneficiaries, the MoH has to decide to which DPSs to disburse aid, to which health facilities and eventually to which civil society organizations or local NGOs. At this moment the MoH is not anymore an agent who is acting in conformity with donors' preferences but exercising the right of ownership in its own country. Ownership, a well known jargon in aid effectiveness, in its simplest form is referred as the degree of commitment to a chosen policy direction, strategy and priority of the country (Visser-Valfrey and Umarji, 2010).

However, the way money is managed and prioritized by the MoH is not always very well appreciated by the donors' community. Even acknowledging that it is not the donors' role to define the funding allocation in-country anymore, donors expect some accountability, especially when priorities were set together ex-ante the disbursement and a MoU was signed. But that does not always happen; as we saw the MoH prefers not to follow donors' preferences (SPE: *Disburse-Ignore*). For instance, according to the informants, community involvement has been the number one priority for two or three years now, human resources have also been a top priority and public financial management is going up in the agenda. Both donors and recipient seem to agree on this and a MoU was signed; however when the end of the year came the budget did not reflect those priorities and the priorities' plan for the following year had changed. As one informant refers

*"In that case we have a problem! The priorities are reflected by something else. You see the money going somewhere else and wonder why, because those are not the priorities."* [BIL/1]

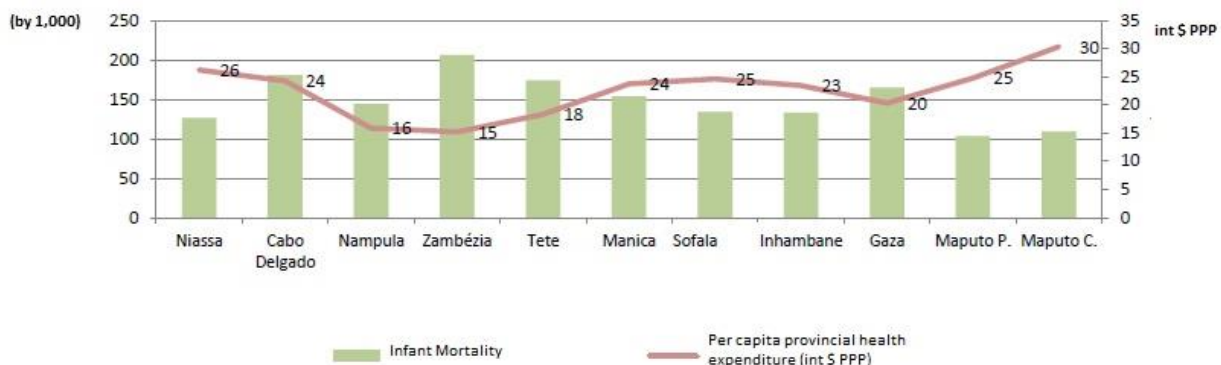
Donors recognize that there are many areas that donors and recipient are not in compliance, which does not mean that the MoU is wrong, but is not applied in practice [BIL/3]. There seems to be an increasing fight between a global donor agenda and a political agenda in country [BIL/3]. What donors would like was to

see the MoH to actually appropriate their projects and put their money into what they say are the top priorities. “But a great deal of political will would be needed to actually change things” [MUL/3]. Donors are convinced that if they would decide to pull out overnight there would be no more internal funding to previously agreed priority programmes, such as community involvement which is completely dominated by external funding [BIL/1].

This situation reflects a particular case of fungibility, where the recipient’s spending on a particular purpose decreases with increases in donors’ spending, i.e. aid substitutes rather than complements local spending (Foster and Leavy, 2001). Here the degree of fungibility is exercised at the level of the health priorities within the health sector. Fungibility, usually highlighted as a case of aid ineffectiveness has been described in different ways: while some consider it synonymous of corruption (Lahiri and Raimondos-Moller, 2004) others consider it a rational response from the recipient due to a conflict of interests between donors and recipients’ priorities (McGillivray and Morrissey, 2000), which ends up with the recipient reallocating the available resources according to its priorities (Waddington, 2004).

### *Choosing locations*

Not surprisingly, there has been an unequal distribution of health resources across provinces. According to the informants there is no clear criteria for per capita allocation in the health sector, which ends up benefiting the country’s southern provinces. For instance, Zambezia and Nampula (in the north) are the most populated provinces, but have the lowest per capita budget, US\$15 and US\$16, respectively which contrast with Maputo City of US\$30, the highest in the country and where infant and child mortality rate are the lowest (see Figure 3.14).

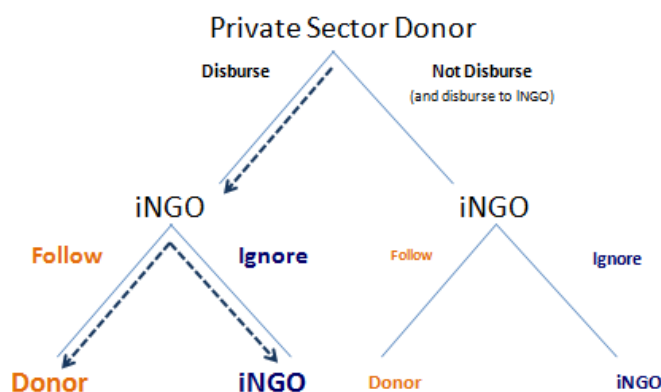


**Figure 3.14 Per capita provincial health expenditure (2012) and Infant Mortality Rate per Province (2008).**

(Source: UNICEF/FDC, 2012: Health Sector Budget Brief)

We have seen that being aware of this some donors (the local donors) try to compensate the unequal distribution of health resources and give money directly to the DPSs. However donors acknowledge that the overall situation is quite complex and not as clear as it seems. The recipient which does not have incentives to follow donors' preferences ( $P_2^{ni} > P_2^{nf}$ ), takes into account the disbursement made individually by each donor to a given province and discounts that when deciding for the allocation of resources to that province, i.e. donors' money to provinces might end up being substitute rather than additional. Simultaneously, the recipient does not have a complete picture of all the operations of the private sector donors in different provinces. So at the end of the day it is hard to calculate exactly the most equitable formula for resources' allocation.

### 3.6.2 THE PRIVATE SECTOR GAME



**Figure 3.15 The private sector game: whose decision now?**

(Source: author's illustration)



### *3.6.2.1 NGOs as agents: the implications of following donors' preferences*

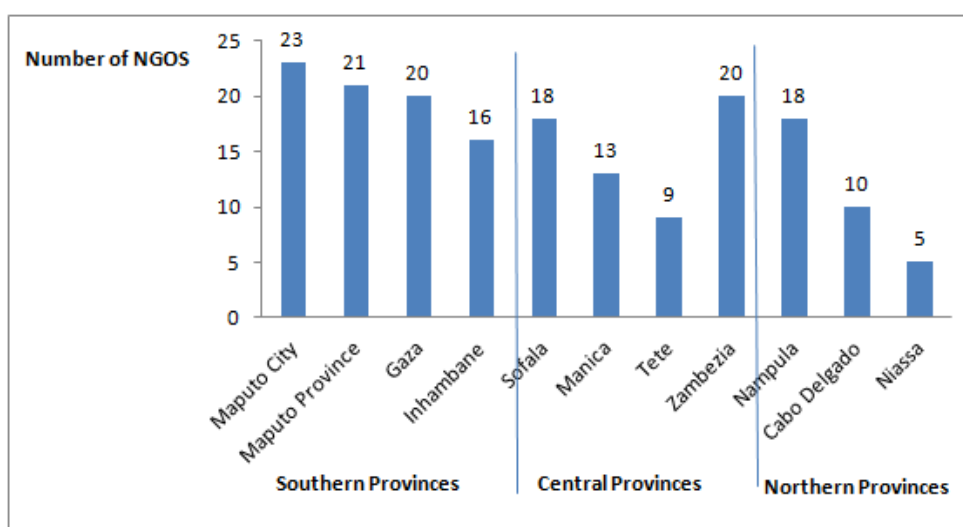
Being recipients of donors' money means, most of the times, that NGOs act as agents under a co-operative or contract agreement. This contract affects NGOs' incentives and limits their locations' choices. In fact, a NGO that follows donors' expectations is exchanging its autonomy and a role as a principal for reputation and security of funding. In this case donors remain the principals of the relationship having leverage for deciding where they want their projects to be implemented. As [Edwards and Hulme \(1996: 970\)](#) argued: "NGOs become the implementer of the policy agendas of governments". The main difference between the public and private sector game is that in the latter donors' priorities are fixed and established before starting the game. Donors that go privately have a specific agenda they want to achieve which is known in advance before actually entering the country. The question is then: what are these donors' priorities?

It is known that NGOs that compete in the market for funding and are dependent on it for their survival, have little leverage on the choice of service they provide, especially if they are small-scale NGOs. Naturally they have to specialize in one area or other, but even that can be adapted. For instance, knowing that the majority of funding goes to HIV, NGOs do adapt their strategy to include something HIV-related **[iNGO/1]**. An informant had even revealed that his NGO's struggle for funding has to do with the fact that the NGO decided to reduce substantially its activities on HIV **[iNGO/4]**.

Donors that provide vertical funds have money designated for specific purposes. For instance, the U.S. has specific types of funding they get from the U.S. Congress; within the sector they have money exclusively for HIV, maternal-child health, family planning, TB or malaria. As a consequence, when donors target some provinces they vertically fund according to what they have money for, and not necessarily what the provinces need the most. Naturally, donors try to go where the burden of a specific disease is higher; however it is not really clear how they assess the relative need of one province or district versus the other. Surprisingly enough, when I asked to a major donor: "are the provinces that receive more money the ones better off?"; the answer was: " I don't know...it is a good question: if it correlates necessarily to need. I don't know..." **[BIL/6]**

Informants tend to refer to the northern provinces as the most disfavoured part of the country. As we can see from [Figure 3.16](#) the northern provinces have 33 iNGOs for health which contrasts with the southern and central provinces that have 80 and 60 iNGOs, respectively<sup>59</sup>. Why is that? The U.S. is the major funding agency in Mozambique with around 80% of its funding going to HIV [BIL/6]. Apparently, northern provinces are the ones where traditionally the HIV prevalence is lower, which therefore attracts fewer attention from donors like the U.S. However, having lower HIV rates does not mean that these provinces are better off in terms of general health indicators; in fact the opposite happens. Northern provinces have the highest level of poverty, the worst health services, the highest rates of malaria and highest levels of child and infant mortality.

NGOs who act as the arms of a vertical donor have to go to the provinces they are directed to go independently of their preferences. This situation stands for a long time now, so NGOs have been placing themselves in those provinces that tend to attract more funding. It might not be that they suddenly change their location completely but have been doing so for the past years.



**Figure 3.16 Number of health NGOs per province.**

(Source: author's illustration based on [NAIMA, 2011](#))

<sup>59</sup> There are more iNGOs for health operating in Mozambique. This data only refers to NGOs which are part of NAIMA (Network for International Organizations). Nevertheless, all the large-scale and more outspoken iNGOs are registered in this network.

The difference in locations' preferences of a large-scale versus a small-scale donor has to do with different donors' priorities in the country. Usually a large-scale donor wants to promote a wider program, sometimes national, and therefore it tends to cover the maximum possible number of provinces. On the other hand a small-scale donor does not intend to have a wider impact but its main concern is on the local support to a specific province, that for some reasons, maybe historical, it has been supporting. A small-scale donor would tend to target its aid to one or limited number of provinces.

#### *3.6.2.2 NGOs as principals: the implications of ignoring donors' preferences*

Sometimes NGOs can also act as principals themselves when: i) autonomy and flexibility is given by the funding agency once the funds have been disbursed or ii) they were not given funding by a donor (and are self-financed). In both situations NGOs, as new principals, decide where to disburse aid and eventually whether to contract other agencies (such as community based organizations) to implement their projects.

But does it mean that by having more flexibility NGOs are more grassroots oriented and acknowledge geographic inequities when deciding their location? In other words, when the donor gives the NGO flexibility for deciding their location or NGOs do not depend on donors' funding do they go to the provinces that need the most? Although some perceived NGOs as flexible, innovative and efficient vehicles for delivery basic services that reach poor communities and remotes areas and identify local needs (Vivian, 1994); others report that there is evidence that NGO's effectiveness remains weak and they are not as grassroots oriented as expected (Edwards and Hulme, 1995). According to Gauri and Fruttero (2003: 4) "in addition to the existence of donor pressures, perceptions about NGOs vary because of ideas of what NGOs are not like to." As they say: "unlike government, NGOs are supposed to be innovative and to respond flexibly to their clients; unlike firms, NGOs are supposed to prioritize the poor and to serve public, rather than private purposes. The problem with these negative definitions is that the same economic, social, and political pressures that influence public sector and firm behaviour eventually affect NGOs."

As a consequence, the motives behind NGOs locations' choice might not be as altruistic as one would expect (Gauri and Fruttero, 2003). Interestingly, the majority of iNGOs' informants went blank when I asked the simple question: "what are your criteria for allocating aid to different provinces?" A few would not simply know the answer to this question. Others start thinking of some potential explanations. The first one was *historical*, as one informant referred: "basically we just kept the same provinces" [iNGO/4]. "If you look back in history", one informant explained, "you would see that there are provinces that received a larger percentage of aid after the war as they were particularly affected, like Zambezia, for instance, and today the same NGOs are still operating there" [CONS/2]. In some cases it happened that NGOs would come into the country during the post-war period and the government would allocate them a given province [iNGO/1]. For the NGO it was better to have the chance to operate in the country independently of the province they were designated than having nothing. NGOs would then start implementing according to their mandates in a given province and most of them remain in their original locations. At the end of the day it did not really matter if the main priority in that province was aligned with NGOs' mission. So NGOs would implement their projects not necessarily on provinces that would need the most. Most NGOs lacked resources and they could not afford to go further way. "Nowadays it might seem non-logical that NGOs are operating in certain locations as time has moved on and these provinces' main needs have changed". [iNGO/1]

Naturally, historical reasons are attached to having *established facilities and infrastructures* in one site which has advantages such networking and knowing the place, costs saving, concentrating activities and eventually maximizing the impact of their actuation. iNGOs referred that it is very difficult to suddenly decide to open a new field site where they do not have anything: where they do not have office, infrastructure, people and where they do not know the place. Occasionally NGOs decide which districts and communities they go to, but even that can be restricted by organizational pressures; NGOs like any private firm feel the pressure to deliver results and to be cost-effective.

It seems that NGOs face a trade-off: either they comply with donors' preferences, secure funding and act as agents or have full autonomy and fight strongly to ensure

the effectiveness of their organization. By saying this I do not mean that NGOs do not have altruistic motives, which I am certain they do. However NGOs do want to maximize the success of their operations and therefore comparing the relative need of one location versus another is not as important as selecting a location where they have already competitive advantage.

To demonstrate success NGOs are not willing to face the risks associated with operating in an unknown zone. As a consequence NGOs tend not to go to difficult environments (Koch *et al.*, 2009). 90% of the iNGOs' informants acknowledged that Niassa, one of the northern provinces, was disproportionally resourced by the international community and was clearly one of the provinces that needed most aid. However as informants pointed out:

*"Niassa is far away and partners tend to concentrate in bigger urban centres for obvious reasons: aid workers want to be closer to a health post, they want to have easy access to other services. In Niassa the roads are terrible; communication is hard which ends up disfavouing this place. And not only Niassa but all those environments that difficult NGOs' operations will tend to have less partners."* [iNGO/5]

*"Niassa is a forgotten province with very few NGOs. Anyway what would you expect? The roads are so bad..."* [iNGO/6]

*Cultural contexts* seem to impact as well on location decisions of NGOs. An interesting story was told by an informant who referred that in Niassa a large percentage of the population is nomad, which implies that from time to time a whole village migrates to another location. For an impact-driven NGO this means no ability to monitor and evaluate the impact of their projects. No NGO would decide to establish a project in a place where they could have sunk costs, no continuity and inability to measure impact [iNGO/5].

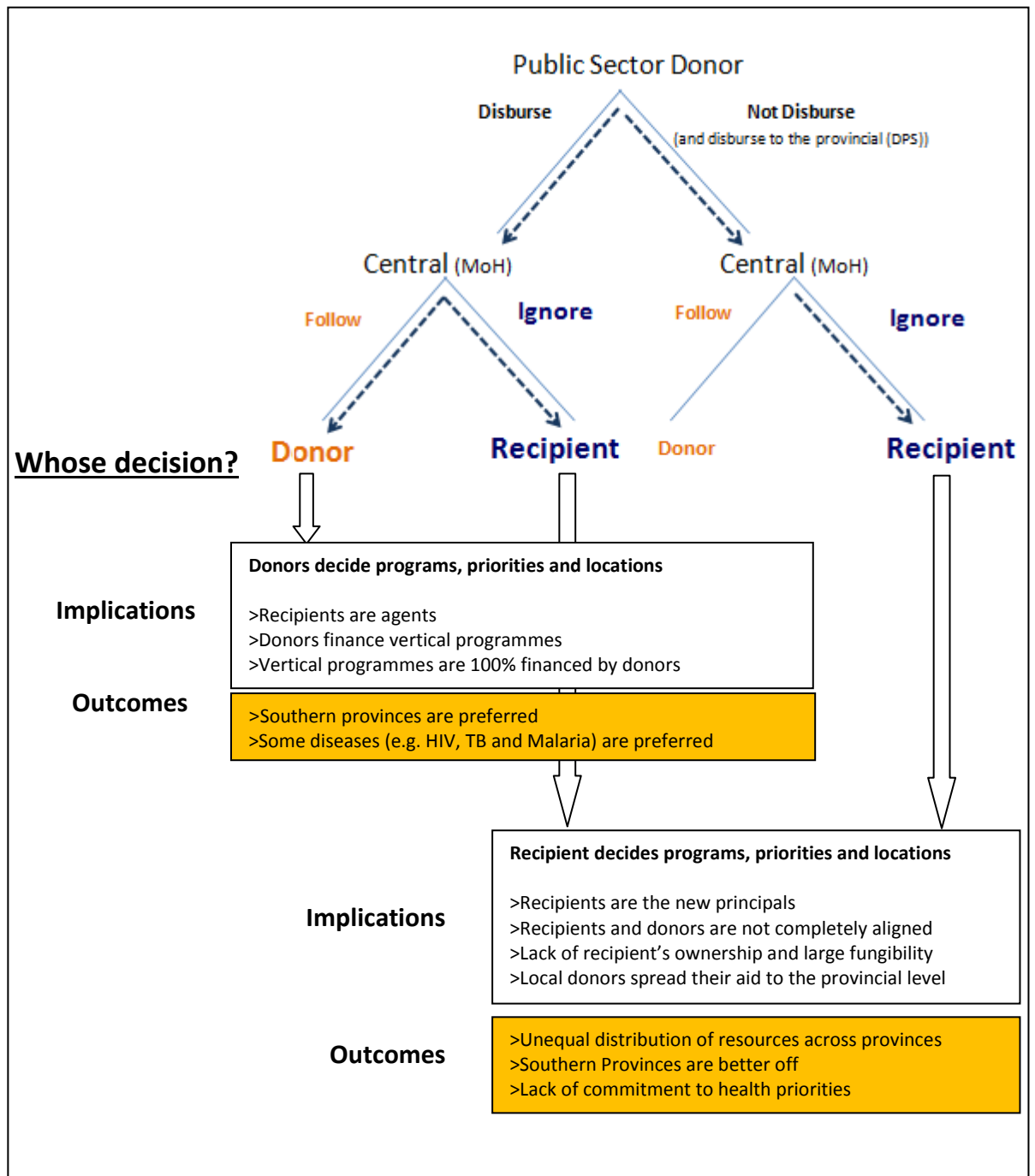
Working as principals means that NGOs have authority to contract partners, usually community based organizations (CBO) to whom they generally provide capacity building or delegate minor activities. Increasingly in Mozambique, subcontracting local NGOs has been taken into consideration. Informants referred however that CBOs have some fundamental problems. The major one is that they might arise for a specific project announced by an iNGO but in the following project they might not have staff anymore or not even exist. This situation creates not only a problem of institutional memory but also implies costs for the iNGOs and has

direct consequences on the effectiveness and impact of their programmes. As a consequence CBOs are also determinants of iNGOs' decisions about whether to disperse or concentrate geographically. In general, NGOs have lack of trust in CBOs which implies that the big share of time is firstly spent on training in order to build their capacity. By concentrating geographically NGOs have more control of CBOs' work and ensure that a better training is provided.

### 3.6.3 CONCLUSION

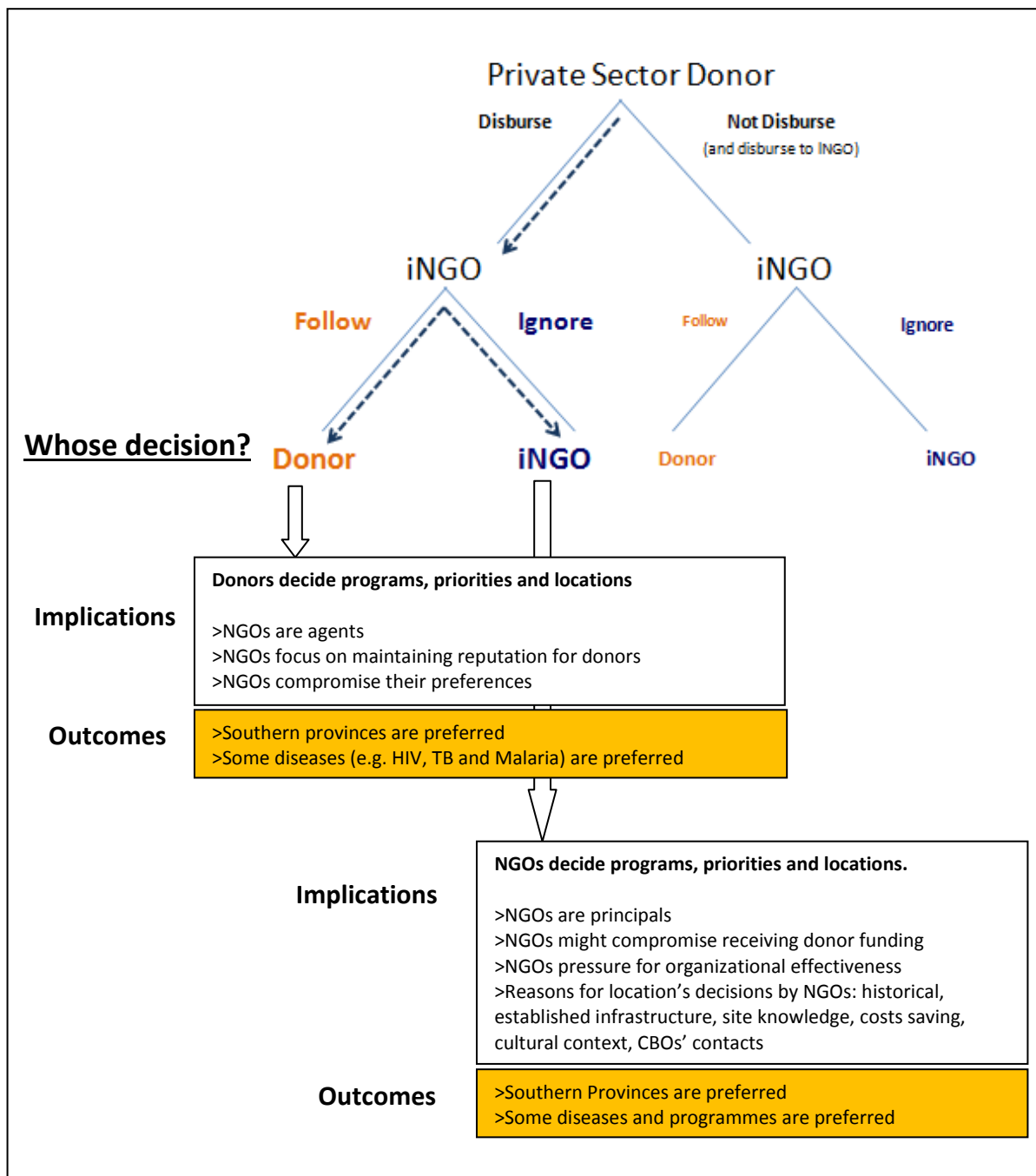
In this section, *the fifth stage decision: where to disburse aid?*, I discussed how a change in recipient's behaviour, specifically whether it decides to follow donors' preferences or not, has implications on its role and on health outcomes ahead. When the recipient follows donors' preferences it continues acting as an agent under a rigid contract that is determined by the donor which has a specific health agenda. On the other hand, if the recipient decides not to follow donors' preferences it starts acting as a new principal now more accountable to the population with autonomy and flexibility for deciding where to disburse aid.

In practice what we see in Mozambique is that both decisions have their own drawbacks. In the case of vertical initiatives, present in both the public and the private game, southern provinces are preferred and specific diseases such as HIV, TB and malaria attract the majority of funding. There is lack of systemic approach to the health sector and some geographical areas and health problems are neglected. However, when the recipient is in charge, the scenario is not necessarily better. In the case of a public sector game there is unequal distribution of health resources, also concentrated on the southern provinces and a lack of commitment to health priorities. We would therefore expect that NGOs, when acting as new principals, would somehow address these challenges. Nevertheless, that is not necessarily the case: like any other organization they have the pressure for results and cost-effective interventions. As a consequence, they have preferences towards some areas and provinces and do not assess necessarily the relative need of one location versus the other (see [Figure 3.17](#) and [Figure 3.18](#) for a summary of findings from this chapter).



**Figure 3.17 Summary of findings for a public sector game.**

*(Source: author's illustration)*



**Figure 3.18 Summary of findings for a private sector game.**

*(Source: author's illustration)*



### 3.7 DISCUSSION

Donors have been channelling aid through the public or private sector. Despite the role played by both sectors there is no systematic analysis that accounts for this aid structure as a founding motivation for donors' allocation behaviour. This is an aid structure that is not only defined by the participant actors in isolation but by the way they interact with each other. As a consequence, recipients are not passive and influence the way donors behave. Donors respond tactically and account for the wider aid structure in their decisions. The allocation of aid is thus a result of a bargaining process that involves different stages and different maximization actors.

This chapter provides a systematic analysis on how aid negotiations are developed at a country level through different stages and how they culminate on actual outcomes on the ground. Despite the focus on in-country disbursements this paper provides a reflection on aid effectiveness in a global context. Furthermore, this paper does not pretend to assess which type of aid organization (and consequently aid modality) or recipient works better. Instead, it attempts to show *how* and *why* actors behave in different ways while looking to the wider effects of those behaviours. By choosing different paths, donors are building their own identities which has an effect on recipients' behaviour and ultimately on the effectiveness and impact of aid.

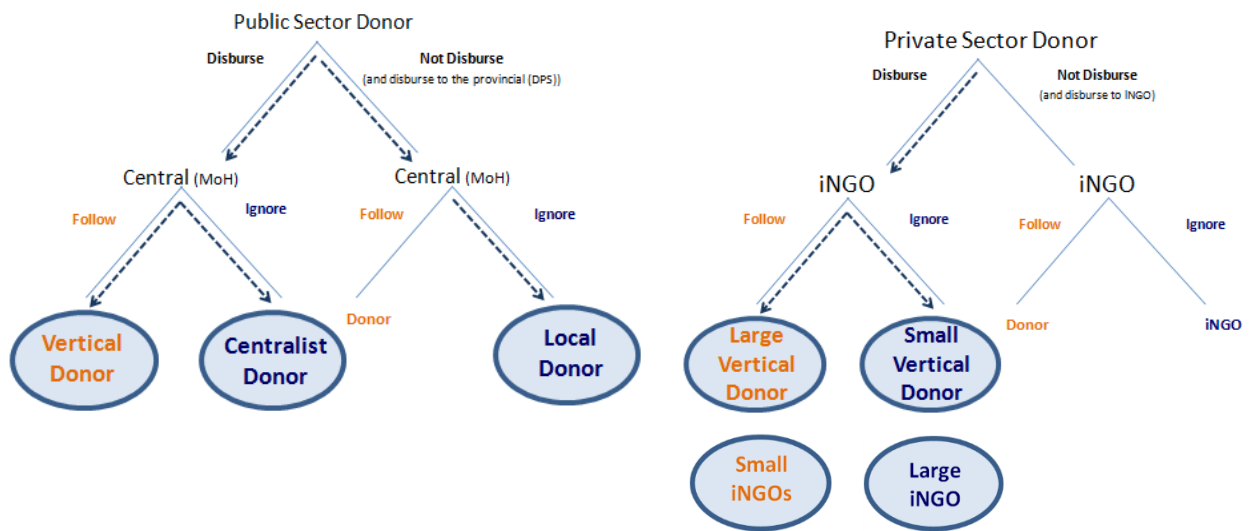
This paper delivers three main theoretical insights: i) findings from primary research in Mozambique conform with existing literature but are extended by my analysis, ii) a theoretical framework that covers all stages of the aid delivery system not discussed in previous literature and iii) new insights on the links between different types of aid organizations, their strategies and outcomes on the ground.

From a policy perspective, understanding in depth donors and recipients' motivation offers a more informed picture on the effectiveness of aid. Traditional aid effectiveness studies deposit the failure of aid to donors' motivations on one side and recipients' characteristics on the other. By accounting the dynamics of interaction between actors, a more comprehensive and pragmatic vision on aid

effectiveness is obtained. This paper offers an important stepping stone for expanding this theoretical and practical line of inquiry by explaining patterns of health aid flows with regards to aid delivery strategies. Recognizing donors' identity and their implications in practice is crucial for establishing the links between aid and results. Underlying the effectiveness of aid are differences in the nature and strategies of the development partners for health. The question of "which type of aid, if any, is desirable" might never be answered. Instead, acknowledging the relevant role of different actors and the country context is crucial if improvements on health outcomes are to be achieved. How much donors are aware of this issue remains a challenge both in theory and practice. With a picture like the one shown in [Figure 3.19](#), are donors willing to coordinate?

This paper also invites future research in several dimensions. In establishing the relationship between donors and a second player, I have ignored interesting responses from third players that act in the background, such as DPSs and local NGOs. Despite the realistic vision of such theoretical insight, i.e., donors' main focus is definitely not on the relationship with those third players, it would be interesting to delve into the role and direct responses of those background actors.

Most importantly, it remains open to answer whether and to which extent do development aid partners take into account coordination when choosing their strategies. An insight on the relationship between different actors that is not bounded with financial ties is fundamental to uncover the bottlenecks of aid effectiveness. This is the topic of the next chapter.



**Figure 3.19 Identity of different international aid organizations.**  
 (Source: author's illustration)

# CHAPTER 4

## ARE AID AGENCIES REALLY WILLING TO COORDINATE? REALITY AND PRESCRIPTION DISPUTED

### 4.1 INTRODUCTION

The number of donors has substantially increased in the past years with jargons such as fragmentation and proliferation of donors and projects becoming main topics of research and policy on aid effectiveness. Research shows that fragmentation can hamper aid effectiveness (Djankov *et al.*, 2009) and proliferation of projects was considered a “sin” of aid delivery (Morss, 1984; Birsdall, 2005). A wide range of literature has identified the main consequences and problems of aid fragmentation including, inter alia, high transaction costs for the recipient (Acharya *et al.*, 2006) and donors (Anderson, 2011) and administrative burden (Kanbur, 2006; Roodman, 2006; Knack and Rahman, 2007; Lawson, 2009; Djankov *et al.*, 2009).

The negative effects of fragmentation have led to increased rhetoric aiming at improving donor coordination. The Paris Declaration of Aid Effectiveness in 2005 has called donors to better coordinate with each other, considering harmonization one of the core principles for aid effectiveness. The Accra Agenda for Action in 2008 continued this line of thought and encouraged donors to specialize by concentrating their aid in fewer countries and fewer sectors within countries (OECD, 2005/2008). There is however a wide gap between words and deeds with Aldasoro *et al.* (2010) revealing that few donors have specialized on a limited set of recipient and aid sectors. Simultaneously, descriptive statistics show that aid fragmentation and proliferation persist and little progress has been made on coordination efforts (McCormick and Schmitz, 2011; Aldasoro *et al.*, 2010). The most recent official evaluation and the Busan Forum on Aid Effectiveness have also reached the same conclusion (OECD, 2011b). Nunnenkamp *et al.* (2013) indicated that coordination has even weakened since the Paris Declaration in 2005.

In face of the disappointing results in improving aid coordination some scholars have begun questioning why coordination seems so hard to achieve or why is aid

fragmented in the first place. These studies are interested in the strategic interaction between donors and the way those interactions influence donors' behaviour collectively and individually (Torvisk, 2005; Halonen-Akatwijuka, 2007; Steinwand, 2013). In particular this literature is concerned about the incentive structure underlying donors' motivations to coordinate. Some studies draw on the aid allocation literature to research if weak coordination is linked with donors' commercial and political self-interests (Mascarenhas and Sandler, 2006; Fuchs *et al.*, 2013) or if it results from increased competition between aid agencies (Roodman, 2006; Annen and Moers, 2012). The other main strand in the aid literature consists of inquiring, mostly empirically, whether donors react to each others' allocation decisions (Cutrone, 2012; Öhler, 2013; Frot and Santiso, 2011) and to which extent coordination drives aid allocations (Davies and Klasen, 2013). Finally, some scholars have even begun to question whether coordination is achievable (Annen and Moers, 2012; Steinwand, 2013) or even appropriate (Torvisk, 2005; Woods, 2011) as it might reduce the recipient country's incentives to help the poor. The majority of these studies take a cross-sectional or country approach.

Literature on coordination at a regional and sector level is however rare in the literature. The critical question of how aid is used and distributed within a country and the implementation of coordination on the ground has been largely neglected. Lack of coordination on the ground implies critical problems such as duplication of aid efforts, ineffective and unsustainable delivery of aid and unequal distribution of resources. According to Powell and Findley (2011: 3), "if donors are not only failing to coordinate at a national level, but also sub-nationally, the costs of failed coordination could be even higher than currently estimated". The few cases analysing donor coordination other than across recipient countries include Aldasoro *et al.* (2010) and Nunnenkamp *et al.* (2013) that employ sector-specific data at the country level to assess coordination between different donors, and Powell and Findley (2011) and Öhler (2013) that look at coordination across regions within a recipient country with the later also considering sectoral dimensions of projects.

Powell and Findley (2011) look at coordination between the World Bank and the African Development Bank across regions within six different countries and find that donors suffer from a lack of coordination in the spatial placement of foreign aid projects. Öhler's (2013) results indicate a modest degree of donor coordination across regions and sectors within Cambodia. Specifically, he points out that bilateral donors' coordination efforts are small and this might result from donors favouring their political and economic interests.

This paper aims to bring the macro and micro literature a step closer by providing a *meso* level analysis of coordination. In particular it explores the coordination efforts of aid agencies by disaggregating the analysis to a single sector and single country. Furthermore, the analysis is not limited to bilateral donors, but also includes multilateral agencies and NGOs which require different levels of coordination. Encouraged to contribute to opening the black box of aid effectiveness, as Bourguignon *et al.* (2007) call it, this paper explores the reasoning behind aid agencies' motivations to coordinate (or not) in the health sector in Mozambique. There is a wide gap between the reality of aid coordination and its prescription. In this paper I attempt to provide a more complete picture of aid coordination by providing an explanation of why coordination seems so hard to achieve based on the analysis of how it is implemented in practice on the ground.

To do so, I first provide an insight into the implementation of coordination in the health sector in Mozambique as perceived by different partners. Secondly, based on the distinction between public and private good properties of coordination, I explore why different agencies differ in their motivations to coordinate. Finally, based on a collective action theory framework and aided by Schelling's (1973) diagrams I illustrate why it is so hard to coordinate.

This paper brings together the aid coordination and aid allocation literature by exploring the dynamics of interaction between aid agencies while reflecting on aid agencies' individual motivations to provide aid and to coordinate. In addition it adds to the literature by uncovering novel insights that explain donors' lack of willingness to properly engage in coordination that are informed by evidence collected through fieldwork research. Finally, it attempts to develop a theory of aid

coordination that is based on empirical findings and is not restricted to bilateral donors.

Mozambique presents a very interesting case for analysing coordination mechanisms for three main reasons. Firstly the country is recognized for having the most advanced coordination mechanisms in place (DSW, 2011). Secondly the health sector is a tracer sector in terms of aid coordination and fragmentation due to high aid volumes. Finally, Mozambique is considered a donor-darling country with a flood of agencies operating in the country. The natural question is: having such good settings and prospects is coordination working? Although this paper takes the form of a case study, it allows some degree of extrapolation to other cases as it is focused on the aid agencies' behaviour, rather than the recipient's which tends to be similar across countries.

The structure of the paper is as follows: Section 4.2 provides a short background information of the aid coordination structures in the health sector in Mozambique. Section 4.3 introduces the methods and analytical framework. Empirical results from fieldwork research are presented in Section 4.4. In Section 4.5 I derive the theoretical framework, while in Section 4.6 the analysis is presented. Section 4.7 concludes.

## 4.2 BACKGROUND TO THE CASE

### **Box 4.1: A brief note on coordination**

Donor coordination refers to horizontal coordination among donors, also known as harmonization. Coordination appears because each aid agency has its own plans and activities that need to be organized to take place in harmony or not to ruin one another (Woods, 2011). Coordination means that aid agencies maintain their individual programmes but try to work with each other in order to maximize cooperation and minimize competition (Acharya *et al.*, 2006). According to Woods (2011: 8) “coordination is not ambitious, principally it serves to prevent inadvertent damage caused when donors are ignorant of each other’s actions”. Coordination structures may vary between countries but generally they involve establishing common arrangements, simplifying procedures and sharing information (Balogum, 2005). Besides procedural issues, coordination is usually accompanied by specific aid modalities and programmes such as Sector Wide Approach (SWAp), budget support or sector specialization (Acharya *et al.*, 2006).

In this chapter I focus essentially on the structures of coordination, occasionally providing some links with the financing mechanisms in place in the country.

Coordination soon became an issue with the influx of external aid after the civil war in Mozambique in 1992. Projects in the health sector were arising everywhere every minute (Pavignani and Colombo, 2001) with donors focusing on specific provinces, developing their own projects sometimes without the knowledge of the Ministry of Health (MoH). The MoH was considered the “ministry of projects”. Fragmentation was a concern at the financing, policy and strategy levels (SCMS, 2007).

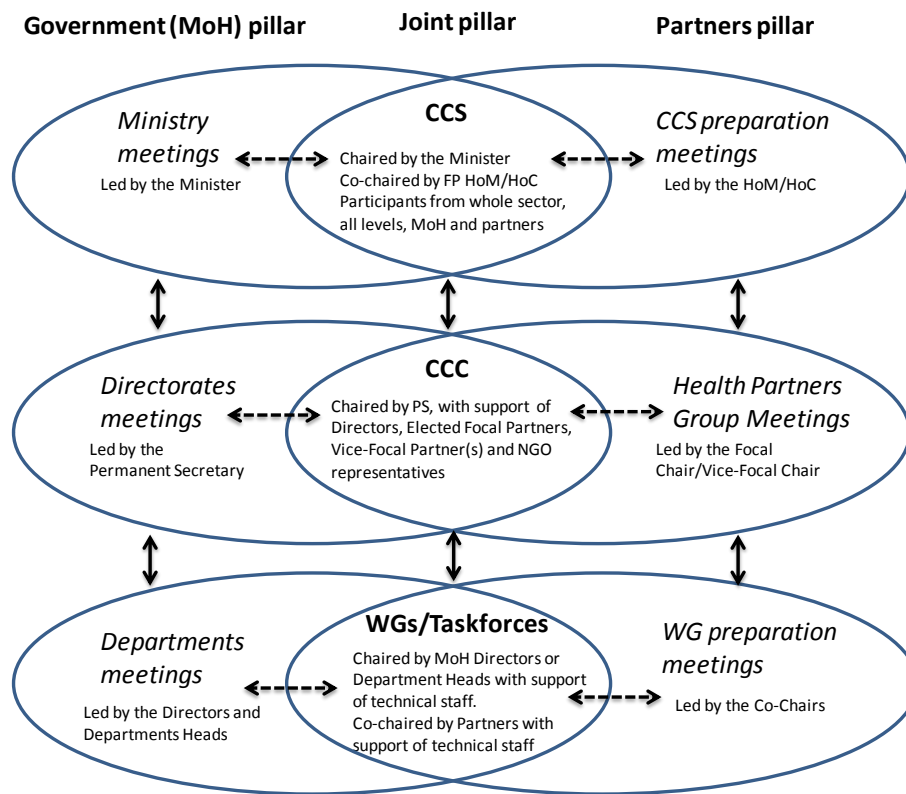
At the same time HIV was becoming an epidemic in the country. In light of this, two coordination mechanisms were put in place by the government and the health partners: the National AIDS Council (CNCS) and the SWAp. Having started in 2000, currently a total of 26 partners use the Health SWAP structure, a programme that aims to coordinate the financing and planning between donors and the



government in support of the Health Sector Strategic Plan (PESS). A number of partners (14) provide support through a common fund called PROSAUDE with a Code of Conduct and Memorandum of Understanding (MoU) governing the relationship between donors and the MoH (SCMS, 2007).

Within the SWAp structure, partners have a partner specific mechanism –the Health Partners Coordination Framework (HPCF) – which provides a structure for collaboration and dialogue between cooperating partners in the health sector. According to the terms of reference (ToR) “the main purpose of this framework is to help coordinate the large number of health partners, represent the diverse range of their interests and build on the comparative advantages that each partner brings”. The framework also specifies that “health partners are organizations such as bilateral donors, UN agencies, international NGOs, national NGOs and private organizations who are engaged in support to the health sector.” (HPCF, 2012: 1)

There are several forums where health partners come together namely: the Aid Effectiveness Working Groups (WGs), the Health Partners Group (HPG) and the Focal Partner Team (FPT). These meetings feed into the monthly SWAp meetings namely the Joint Coordination Committee (CCC) and the biannual Sector Coordination Committee (CCS) between partners and the MoH. Figure 4.1 gives an overview of the Health SWAp mechanisms showing the links between the MoH and development partners, highlighting the different types of health SWAp meetings at different levels. There are three pillars and three levels. The three pillars include the Government, the Partners and the Joint pillars. The three levels are the WGs/Taskforce, CCC and CCS. Partners and government have their own meetings before the joint meetings take place. After the joint meetings, the separate meetings continue throughout the year building on the feedback from the joint meetings and preparing for the next ones (HPCF, 2012).



**Figure 4.1 Overview of the formal coordination mechanisms in Mozambique’s health sector: the Health SWAp structure.**

*Note: The Health SWAp is made of three pillars and three levels. For a complete description of this figure and an explanation of how the pillars and levels fit together see Appendix F. (Source: HPCF, 2012)*

In addition to the health platforms, separate HIV platforms also co-exist. Although some steps are being made in order to have a better collaboration between the two platforms and specifically link HIV to the health sector in a more consistent way, coordination bodies take place independently of each other and have separate ToRs and MoU. The Pre Partners Forum (PPF) (equivalent to the HPG for health) is “a platform that constitutes a level of the interaction of bilateral, multilateral agencies including the private sector as well as representatives from national umbrella HIV/AIDS civil society networks that work in the fight against HIV and AIDS with “*Conselho Nacional de Combate à SIDA*” (National Aids Council-CNCS) (PPF, 2012: 1). Just like the HPG, the PPF is made of three levels and three pillars and develops similarly to what is depicted in Figure 4.1.

Mozambique was one of the first countries to become a signatory of the International Health Partnership (IHP+) Country Compact in 2008. The Country

Compact reaffirms the commitment of all partners to increasingly harmonise and align their support with nationally defined priorities while consolidating the HIV/AIDS framework (CNCS) with the Health SWAp (DSW, 2011).

NGOs also have their own coordination meetings. At the central level NAIMA (standing for Network of Organizations working in Health and HIV/AIDS) started informally in 2001 in a way to coordinate different organizations working in HIV, and in 2005 it expanded to include all health-related NGOs. NAIMA's key areas are: i) coordination within the network and with the MoH, donors and civil society, ii) representation of NAIMA in different forums, iii) communication within members and iv) advocacy. NGOs have to pay an annual fee to become members of the network and participation is completely voluntary (NAIMA, 2011).

Sub national coordination structures also exist and aim to feed into the national mechanisms. However at the province and district level coordination mechanisms are less formal and less developed.

### 4.3 METHODS AND ANALYTICAL FRAMEWORK

This research involves two main parts: i) a presentation of findings collected through field work research (section 4.4) and ii) the interpretation of data using collective action theory (sections 4.5 and 4.6). Whereas the first part aims to explain *how* coordination works in practice, the second explores *why* coordination seems so hard to achieve. It uses a mixed-methods approach employing a *sequential exploratory* strategy in the sense that quantitative results assist in the interpretation of qualitative findings previously described. As a result, when first presenting the qualitative findings the aim is simply to describe the reality rather than attempting to interpret or justify it. The second part of this chapter illuminates the mechanisms behind a coordination shortfall, shedding light on many of the “frustrations” expressed in the previous section. It is *transformative* since collective action theory is used to explore the research question.

The results reported in this paper form part of a larger study that was set out to understand aid agencies' dynamics and strategic interactions with each other and

the recipient country. The findings presented in this paper represent a sub-set of the data collected concerned with coordination mechanisms in Mozambique. A qualitative case study approach was adopted in order to understand in practice one of the complex structures of aid: the implementation of aid coordination. Specifically fieldwork research aimed to elicit: i) information on the existence of national and sub-national coordination structures, ii) stakeholders' perception on the effectiveness of coordination mechanisms in place in the health sector in Mozambique and iii) factors underpinning each organization's motivations to coordinate. Data collection took place in Maputo from February 2012 to June 2012. Chapters 3 and 4 share the same fieldwork methods. Please check Chapter 3, Section 3.2.1 (pages 85-87) for a complete description of the methods used. These chapters differ however, in their approach, research focus and analytical framework.

To arrive at the research aim of this chapter, three steps are taken. The first is to understand aid agencies' general perceptions of coordination. The second is to conceptualize coordination based on different agencies' motivations to coordinate. The last step focuses on exploring the outcomes of aid agencies' interactions on coordination success reflecting on their incentives to coordinate.

The analytical process followed a thematic content approach (Ritchie and Spencer, 1994; Patton, 2002) and involved familiarization with the data collected (including data cleaning and checking for consistency), development of a coding scheme based on the identification of a thematic framework, mapping, charting and interpretation. Results were organized into five main themes. After having a structured picture of the qualitative findings, a theory of donor coordination is explored. At the core of this theory is the conceptualization of coordination as a public or private good. Collective action theory guided the interpretation of results and it is used to understand the conflict between individual and collective best outcomes. A collective-action occurs whenever a desired joined outcome requires the outputs of several individuals. Collective action-problems take place when individuals select options that are less desirable to the group than others available to them (Gibson *et al.*, 2005). In this framework it is complicated by the fact that actors also do not share the same view regarding coordination as a collective best

outcome. Schelling's (1973) diagrams are used to aid the analysis and seek explanations for the findings observed. The theory developed in this research is therefore informed by results on the ground.

#### 4.4 STAKEHOLDERS' PERCEPTIONS OF COORDINATION

##### 4.4.1 MEANING AND MEMBERSHIP

Mozambique is known for having one of the most advanced coordination mechanisms in place at the moment (DSW, 2007). However, misunderstanding of the mechanisms was a common issue among partners. Firstly, the way that different groups and meetings fit within each other (depicted in Figure 4.1) is not commonly perceived by all development partners. Secondly, despite all formalities, guides and ToRs, there is no common understanding of main concepts and principles of the coordination framework. Specifically, the real meaning of SWAp is not clear for everyone, especially for non-state actors. Interviewees reported that they were not really clear about whether SWAp was mainly a coordination tool or a financing mechanism.

*"I think that at the beginning when we talked about SWAp we were referring to the basket fund. Now the basket fund is called PROSAUDE so I guess the SWAp refers more widely to the collaboration that exists between the MoH and the health partners...But it is not very well defined." [NET/1]*

A common concern expressed by the donors interviewed was that despite the fact that everyone had signed the MoU for PROSAUDE there was no common interpretation of its basic principles. One interviewee even questioned:

*"If we don't have the same understanding of where we are going, how can we work together?" [BIL/3]*

Thirdly, different documents guide donors' code of conduct and not all of them applied to all donors: some are PROSAUDE donors while some are only general health partners.

Furthermore, some partners are not sure about their "place" within the SWAp and the right to participate or not in certain forums. One donor reflected that:

*"In principle, SWAp has an inclusive and not exclusive approach and therefore it is assumed that health partners have the right and interest to attend the group meetings, have a contribution to give and have a role within the group."* [BIL/8]

However in practice there are main issues around membership and participation in group forums. The way donors perceive coordination has a huge impact on how they see all different donors fitting together for a common purpose. Some donors were of the opinion that only donors that contribute to a given modality should be attending specific meetings; as one donor referred: *"It is like buying a share in the business; so if you don't have a share why should I let you have a chair free of charge and seat by the table?"* [BIL/3] A controversy that was made clear with regards to the coordination framework in Mozambique was that the U.S. does not channel their aid through the government systems (like some of the other partners) but it still gets the chance to participate in the majority of meetings, without providing any counterpart. Simultaneously they are entitled to a parallel coordination system with the MoH with whom they meet regularly and exclusively without the presence of other donors. For a country that advocates for a SWAp approach, informants argued that having the lead donor outside represents a major challenge in both the ideology and practice of coordination. A key informant from a bilateral organization asserted that the Paris Declaration and the SWAp do not really make sense when the biggest donors in the country are not on board. [BIL/3]

At the same time large donors, such as the Global Alliance for Vaccines and Immunisation (GAVI) and the GFATM only participate in the highest level meetings (CCS) and rarely participate in the lower-level ones mainly due to lack of local representatives. According to the informants this decreases the effectiveness of the higher level meetings as these donors do not have the necessary background knowledge about the country.

The subject of membership is particular critical in relation to the HPG, it was noted through the interviews and direct observation of meetings. The ToRs of the HPCF refer that the HPG is aimed at "all interested health partners" (HPCF, 2012: 1). Nonetheless despite the formal terms, there is no common agreement about whether non-state actors' participation is both desirable and constructive for the group. Most of the NGOs interviewed perceived the HPG as a donors' group. Some

were not really sure whether that was a forum they were supposed to be participating in or even if they should wait to be invited to; while others were convinced that despite donors' disapproval on having NGOs on board, they felt they had the right to be present. To illustrate the lack of common understanding an interviewee told the following story:

*"Once I went to a HPG meeting and saw a colleague from another NGO. Surprisingly I told him: "Oh...you are also here...." He answered me: "Sure I am. I had to step into this group. This is not a donors' partners group but a health partners' group." [iNGO/9]*

In addition, as illustrated by the previous quote, some NGOs do not understand why some non-state actors do participate in this forum whereas others do not. Based on interviews and direct observations from meetings with the development partners it was noticed that donors do not share the same view with regards to NGOs' participation: some see the HPG as a universal partners' forum and attribute the lack of NGOs' involvement to their own fault. In fact these donors refer they would like to see more interest coming from the NGOs to participate in this forum, referring that specifically national NGOs, who are often invited, never come on board. On the other hand, some admit they do not really want NGOs to spoil this forum as this is a place to discuss process-level content, specifically procurement and public financial management issues which are not particularly relevant for NGOs. As a result they consider being enough to have a representative from a national and international NGO that should then feed back to other partners. The question then arises: are these representative NGOs representing all NGOs or their individual interests? Simultaneously, the large number and diversity of NGOs makes it very difficult to have a representative partner covering all different ideologies. NAIMA is now taking the representative position for NGOs which is appreciated by the donors but not unanimously by NGOs who would also like to have a place in this forum.

In addition to a lack of understanding about *who* should constitute the group, NGOs and donors do not share the same opinion regarding the content of the meetings. NGOs feel there should be a place in the agenda to discuss operational issues happening on the field including some time for advocating main health issues. They argued that donors lose their understanding of the problems on the ground at the

province or district level since the majority of donors fund PROSAUDE and the others fund vertical initiatives independently of each other. NGOs feel there is lack of communication going on between NGOs and donors in general. Donors on the other side feel the HPG is not a place to discuss ground-level issues but instead to feed into the wider SWAp structure as depicted in [Figure 4.1](#), by sharing information and updating from the WGs, prepare for CCC and CCS meetings and review the progress in the sector (HPCF, 2012). For some aid agencies it remains a challenge to find a forum where NGOs can report to donors on more substance topics. Others, on the contrary, think that although desirable, it will remain a rhetoric goal as too many forums are already taking place in the sector.

NGOs also showed dissatisfaction with the content of the NGOs' meeting group, the NAIMA. According to the interviewees the content of those meeting is primarily about updating general health sector information instead of focusing on coordinating each others' activities. When NGOs were asked specifically in the interviews whether they would talk about each other's plans, priorities, strategies, they answered: "No", straightaway [iNGO/3]. In addition, in 2008 NAIMA became a formal organization with their own physical office and staff, instead of an informal network as it was before. Following this institutionalization NAIMA turned very much like an NGO struggling for survival and the meetings' main focus became very much about the financial sustainability of the organization, it was noted by the informants.

#### 4.4.2 COORDINATION: AN OVERARCHING GOAL?

Most of the health partners seem to agree that in theory coordination is both needed and desirable for the health sector as a collective aim. However, despite all the good intentions for coordination, informants revealed a general feeling of disappointment and saturation when reflecting on how coordination has been implemented in the health sector in Mozambique. For most agencies coordination became a "goal in its own rather than a means to achieve an overarching outcome". [MUL/4]



One informant even referred that

*“Sometimes you have to be careful that all these partner coordinating bodies can develop a life on their own”.* **[BIL/5]**

On one hand partners are proud of the advanced coordination mechanisms in place in the country, on the other they feel that the structure they applauded once is now backfiring against them. For some donors it seems that coordination has become part of the overall problem and not a way to fight the problem; i.e. coordination is fragmented as well. The extensive number of meetings, extended negotiations and consensus building at different levels, the bureaucracies of the coordination system and the unproductive meetings are considered a “burden” for most donors who see coordination as a very time consuming activity that generates no compensatory benefits. In particular, for those donors that take the role as Focal Partner (FP) and Vice Focal Partner (VP), coordination represents a full-time job. These costs of coordination have been described in the literature before (see for instance [de Renzio et al., 2005](#); [Balogum, 2005](#); [Bigsten, 2006](#); [Acharya et al., 2006](#)) and seem to be more outspoken than the potential benefits of coordination, specifically the reduction of transaction costs for the recipient country ([OECD, 2003](#)). [Balogum \(2005\)](#) argues that little evidence was found on the reduction of transaction costs, and that might be a result from a shift in costs from the recipient country to the donors. [Anderson \(2011\)](#) adds to the debate by showing that at a macro level greater fragmentation of bilateral aid across many recipients tend to raise their transaction costs.

At the end of the day some partners feel that there are high opportunity costs by choosing to completely embrace and engage with the coordination framework and therefore they “have to decide how much they want to fall into and how much they will stay on the side line”. **[BIL/3]**

NGOs feel even more strongly about the costs of coordination both at the national and sub-national level. Like donors, NGOs believe there are high opportunity costs for attending NGOs’ meetings, and therefore “coordination for the sake of coordination is not a wise way to spend money” **[iNGO/8]**, it was illustrated by one NGO. Coordination implies not only the indirect costs such as the time consuming activities, but also direct costs of having to employ enough staff that can participate

in different coordination forums taking place across the country, sometimes simultaneously. Coordination events provide a full time schedule for an employee displacing them from more outcome-driven activities.

*“Usually we do not go to the NAIMA meetings. I receive the emails, pay my fee each year and provide information when they need to do a report; however I do not feel like going to the meetings.” [iNGO/10]*

*“Honestly, I look at my agenda and if there is something useful for our organization and what we are doing then we go to the meetings.” [iNGO/3]*

*“The problem in Mozambique is that you have so many forums, and everyone talks about the same thing but no one talks about anything!” [iNGO/8]*

Coordination meetings were also reported as not being effective as they should be with NGOs complaining about lack of follow-up. NGOs seemed to commonly agree that is better to simply just work than engaging into time consuming and unproductive meetings. For the majority of agencies the perceived benefits of coordination are nowadays not compensating against all the costs.

*“Because it is not mandatory to be part of the coordination mechanisms NGOs that are better established feel they do not need to have a group to coordinate them”. [NET/1]*

#### 4.4.3 OWNERSHIP AND LEADERSHIP

Who should be coordinating all efforts? This is a question commonly addressed in all collective action situations and lack of agreement on this subject constitutes a collective action problem (Gibson *et al.*, 2005). That is exactly the scenario in Mozambique with the key question being: “who should be coordinating the coordination?”

There are two opposite positions. Some argue that the government should be coordinating while others think it is a partners’ responsibility. The ones that support the first position are of the opinion that too much time is spent on coordination and if the government would take the role as the main coordinator, agencies could concentrate on more productive activities. In addition, for these agencies, taking the lead on coordination would show a strong government ownership. One consultant interviewed referred that the international community worries too much about coordination but that should be a main government’s

concern and not the other way around. The interviewee pointed out that donors complain frequently about the coordination mechanisms however they do not delegate the “coordinator” role to the MoH. In fact the opposite happens: the lack of technical and human resources’ capacity at the MoH forces the MoH to delegate tasks to the health partners which should be the government’s responsibility. For the interviewee this is one of the main pitfalls of the aid coordination framework in Mozambique. [MUL/2]

Not all the informants shared the same opinion. Some argued that the MoH is very overcrowded with work; they have no time, no sufficient number of staff and the right people who would feel comfortable and familiar in leading the donors’ community. Specifically in a scenario where there are many players it means that there are more people thinking and having their own ideas and own resolving problems. The MoH simply does not have the time to stop and listen to what everyone is planning. To these informants it is a partner obligation to engage with each other in the interest of the country. [MUL/1]

The issue of leadership might as well be discussed from the perspective of the lead donor. Lead donorship, as used by [Steinwand \(2013\)](#), might be understood as a long-standing stable and exclusive relationship between one donor and a recipient country. However it might as well represent the biggest provider of foreign aid or the one that has highest influence ([Steinwand, 2013](#)). In the case of the health sector in Mozambique, interviewees were unanimous to consider the U.S. as the lead donor, due to its massive contributions to the sector specifically on HIV/AIDS.

*“Understanding aid for health in Mozambique is not possible without accounting for the biggest player: the U.S.” [iNGO/1]*

*“Before the Americans were not part of the game. As soon as they entered and became the largest contributors to the health sector everything changed.” [CONS/1]*

*“The Americans are everywhere (through their implementing partners) and they are really influencing everything that happens in the health sector.” [iNGO/2]*

The issue with this donor being appointed the lead donor is particularly controversial since it does not fund through the government systems, has a parallel coordination mechanism with the MoH and the majority of funds are provided off-

budget. The lead donor does not therefore act as an appointed representative of the donor community, but instead arises from its massive presence in the country. Despite not providing funds to the sector budget support, the U.S.-MoH relationship remains quite strong. Naturally this plays out to the other donors who feel they have to “adapt” to this donor’s plans. This pattern of dependency rather than coordination might seem odd; donors are not sure whether at the end of the day they are being accountable to the U.S. through the MoH; in other words, is the U.S. dictating the rules of the game, the MoH following those rules and the donors being forced to align as well? One informant reported:

*“U.S.-MoH relationship!?!? Hum...you know it is the same everywhere: Who has the money is in charge!!” [CONS/1]*

Formally, within the coordination framework there are some donors who are appointed the Focal Partner (FP) and the Vice Focal Partner (VP) and lead the dialogue between the MoH and the partners. This leader is supposed to be a coordinator of the health partners representing one partners’ voice and becoming the entity that tries to reduce the transaction costs for the ministry. Some donors however, are not very confident with the fact that individual donors are also FP for the wider donor community. The FP has a double role by representing the interests of its own agency while at the same making sure that it represents all partners in Mozambique in relationship to the ministry. No common understanding exists on this matter as well. As one interviewee observed:

*“Do I trust in you to take decision for me because you are now elected a Focal (FP) or is a FP a facilitator/coordinator of a consensus building process?” [BIL/3]*

According to this interviewee these issues were never discussed and were never clear. The interviewee clearly objected to the fact that the FP could take decisions on behalf of other donors. The interviewee stated they were not naïf and they were aware that different donors have their own agendas and might take advantage of a leading role to promote their own interests in detriment of the group’s goals. According to the informant this was clearly a grey area that needed to be discussed and surprisingly enough, it was never a topic at the round table.

The discussion of ownership and leadership is also common across NGOs. However, unlike donors, they seem to universally agree that coordination efforts should be the responsibility of the government. On the field, it was commonly argued that the DPS and DDS should be the ones interested in coordinating the partners, as they are the ones who supposedly have the mapping of NGOs in the region. Interviewees referred that in the past coordination mechanisms were enforced at the DPSs but did not work or ended up not happening on practice. During a NAIMA meeting observed, an informant from an NGO informed the colleagues that there were some mechanisms of coordination in place at the ground level where NGOs were supposed to register through the DPSs. Surprisingly, only one person in the room was aware about this procedure and no apparent reason for this to happen was discussed.

#### 4.4.4 FUNDING

Despite the bet on a common fund for health, not all donors in Mozambique adhered to PROSAUDE. The target of 50% of external funds to be channelled through PROSAUDE has not yet been reached, informed a key donor [MUL/2]. A great percentage of donors' funds are channelled outside government systems and directly managed by the partners. In 2012, PROSAUDE accounted for US\$88 million while off-budget funds were estimated on US\$112 million<sup>60</sup> (UNICEF/FDC, 2012).

Various donors argued that channelling aid, outside the government systems has been having a negative impact on coordination, not only for the MoH but also within partners. The issue has been particular intensified by the fact that some programmes that take the form of vertical initiatives are mainly financed by external aid (e.g. HIV is 97% funded by donors). At the same time, as different donors fund different aid modalities, the challenge to coordinate all efforts is exacerbated. Finally, and as discussed previously, there is no common understanding about how coordination mechanisms should work and who should constitute the coordination group since donors have different funding modalities. Should all donors come together independently of their financing mechanism or

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<sup>60</sup> This value represents a conservative projection from USA development agencies (USAID and CDC) (UNICEF/FDC, 2012).

should the right to participate on specific coordination structures be determined by the aid modality?

At the same, projects for HIV/AIDS have been disproportionately resourced compared with other health needs. The coordination setting for HIV/AIDS is led by the National Aids Council (CNCS) and a specific partners' coordination framework (PPF) attached to it. This does not include health-specific activities. Not all donors involved in the HIV/AIDS coordination framework participate in the health-coordination structures. In fact donors jump from one group to the other according to their own agendas: for instance the aid agency for HIV, PEPFAR has a huge presence and dialogue in the HIV/AIDS coordination forums but its role on the health sector coordination is more an observational one. There is therefore an additional problem of coordinating efforts between the health sector and the HIV/AIDS sub-sector, it was frequently argued by the informants.

#### 4.4.5 EXPECTATION AND INFORMATION

*"There is a lot of expectation going on". [BIL/3]*

Asymmetric and ineffective information or lack of it, have long been described as one of the major barriers to coordination across levels between different aid actors, and Mozambique is not exception to the case ([Acharya et al., 2006](#)). Respondents were unanimous to consider *lack of communication* as one of the major issues hampering aid effectiveness. Donors and the government considered that information sharing is crucial and always highlighted it as a major pillar of aid coordination that needed improvement in the near future.

Despite the time consuming issue of coordination activities, respondents considered that there are major communication concerns especially within the health partners. Each donor has its own interests, goals, strategies and agenda. To complicate, partners do not widely share their individual plans with one another. There is no proper mapping of each other's activities and according to the respondents agencies are not very keen to share their individual information. This situation is particularly worrying due to the number of off-budget funds and vertical initiatives that are planned and implemented by individual partners with little accountability to other members. As referred previously, the U.S. has its own

monthly meetings with the MoH which is held in parallel to the other partners' forum. While the U.S. has a seat on the health partners' forums, the opposite does not happen. Even with PROSAUDE partners information is not widely shared as some donors also provide aid through additional aid modalities, such as direct funding to the provinces or to NGOs. Although partners are usually aware of the general priority areas, provinces or modalities of each partner, their knowledge remains quite superficial. Interviewees commented that information given by donors (especially vertical donors) is not very explicit and refers only in general terms about particular areas of intervention, such as HIV or malaria (for instance), without going into detail about any particular niche of interventions.

Some coordination instruments were introduced to promote aid and budget transparency, in particular the ODAMOZ database and the newly established government electronic state financial administration system (E-SISTAFE) that aimed at improving budget execution to the health sector (IGG, 2010).

The ODAMOZ is a database where individual agencies are expected to voluntarily submit information regarding their funding commitments and disbursements. However despite the rhetoric on the usefulness of this instrument, health partners fail to provide information. A key informant interviewed was not even aware of the existence of such platform and enquired myself if ODAMOZ was really useful. Despite being relatively new in the country, the interviewee was quite shocked for not having any information about this database and commented on the lack of interest from other partners to put everyone on board and on the same page. The interviewee eventually questioned himself: "why isn't there a package for new incomers?" [BIL/7]

Donors recognized that they do not consistently provide input to the ODAMOZ database. While some complained about the major technical issues of the database which do not facilitate donors' commitment in providing information; others expressed their lack of understanding about the real purpose of this instrument and how this database is supposed to go up and be used by the government. Because the meaning and purpose is not clear, some donors reported that they preferred not using it. Some even argued that by providing information they are more vulnerable to criticisms and evaluations from the government. Finally, others

referred that if vertical donors do not input their commitments and disbursements, the database is not really a useful coordination instrument. An additional problem declared by the informants was that even within those who share information there is sometimes wrong imputation of data and it is not adequately linked with the data entered in E-SISTAFE.

Non-sharing information is a problem within donors but becomes a major problem for the government who cannot plan adequately. It was noticed by a representative of the MoH that each partner has its own rules, priorities and timelines which harms government planning. Lack of predictability has been considered a major barrier on aid effectiveness and can derive from three issues: i) funds that are on budget but are managed by the donors (on-budget but off-cut/off-treasury), ii) funds erroneously included in the state budget (on-budget erroneously) and iii) off budget funds (funds not included in the state budget) (IGG, 2010). The government launched E-SISTAFE, an instrument that is able to keep track of the origin of the resources and therefore represents a very good instrument for planning as the balance of external funds can be re-inscribed into the budget for the next year. However, only PROSAUDE donors signed the MoU which establishes that funds from donors are made available through the Single Treasury Account (CUT) using E-SISTAFE. As a consequence E-SISTAFE, although reliable, does not provide a complete picture of the real external budget as the biggest share of external finance comes from donors who provide vertical funding and are neither on-cut nor on-budget. At the time I was in Mozambique the U.S. was however, starting to consider channelling funds through E-SISTAFE and was dialoguing with the Mozambican government about this procedure.

The MoH has also taken a stronger position and tried to clarify to the partners the importance of providing information for both donors and the MoH, having launched a second edition of the ODAMOZ in 2012. However as there is no punishment for not filling in the database, informants from the MoH referred they were not very confident that partners will ever provide timely and reliable information.

It is not only within donors that information sharing is an issue. In fact, it appeared to be even more problematic with NGOs. In regard to NGOs-MoH relationship there



are clearly some issues: although NGOs tend to align with the MoH they do not enjoy having to report both at the central and provincial level. When this research was conducted in Mozambique, the Ministry of Foreign Affairs (MFA) wanted to create indicators to evaluate NGOs' work in the country – NGOs would have to fill in a questionnaire that auto-evaluated their work which had to be signed off by the DPS and the MFA. NGOs were not very satisfied with this measure as they felt they were being evaluated and were not given the chance to evaluate the MoH back. Particularly they were worried that providing too much information could backfire against them, i.e., the government might end up dictating some NGOs' focus or even make some of them redundant and force them to abandon the country. When they were discussing the best way to approach this issue, NGOs unanimously agreed that more clarification was needed, and the less information they could provide the better.

Coordination within NGOs was also reported to be a big challenge. In the ground it is common that NGOs are not aware of any other organizations working in the same province or even district, interviewees reported. It was added that even when NGOs were aware of other partners working in the same place they might not communicate. As one interviewee reported:

*"It happens that two partners are in the same hospital: one supporting cardiology and other paediatrics and they do not talk with each other."*  
[iNGO/6]

NGOs reported that while on the field they often meet other NGOs and networking takes place frequently. However they do not really consider it as an "informal coordination" as the main goal is mainly to introduce themselves rather than trying to find synergies. Some NGOs also referred that they tend to know better the work of the partners that are funded by the same donor as they meet with each other more frequently. Except for those, they only have a vague idea of the work of the remaining NGOs.

*"If you ask me about what Save the Children is doing in Mozambique I just know in general that it is a NGO that works with children and does treatment. However I am not aware of their projects, approaches and locations."* [iNGO/3]

## 4.5 THEORETICAL CONSIDERATIONS

*"It seems there is a secrecy culture among health partners going on. It took me some time to understand it all but now I figured it out."* [BIL/3]

Fragmentation of aid has long been appointed as a major cause of aid ineffectiveness. Aid is received in many pieces from many donors, which is translated into having a large number of donors per sector (Acharya *et al.*, 2006). The aid allocation literature has recognized that donors do not share the same goals and interests which generate complex collective action problems (Gibson *et al.*, 2005). Coordination would then be the instrument to attenuate donors' differences in the interest of the overall development of the country. However, coordination seems very hard to achieve. Donors face collective action problems and have different incentives to coordinate their actions.

Collective action theory was mainly developed by Olson's seminal work, 'The Logic of Collective Action' (Olson, 1965). Calling ourselves rational individuals, Olson (1965) questions our willingness to cooperate believing that if one believes he can receive the benefits of cooperation without contributing to the costs, free-riding occurs and cooperation is left to the others. Olson (1965) believed that cooperation is only possible if the group is small, so that free-ride would be noticed, if there are selective incentives in place to induce cooperation or if individuals are coerced to do so (e.g., through centralized government impositions).

The theoretical case for donor coordination that takes collective action as a framework has been relying mainly on the public good characteristics of aid. Modelling foreign aid as a contribution to a public good was first developed by Olson and Zeckhauser (1966) with scholars such as Azam and Laffont (2003) and Torvisk (2005), continuing this line of thought. Their focus is however different. Olson and Zeckhauser (1966) show that for aid with public good properties, the contributor with the largest marginal returns on the contribution to a public good carries the largest burden. Azam and Laffont (2003) consider the "consumption of the poor" as an international public good in order to show how an aid contract can be designed to ensure optimal provision. Torvisk (2005), assuming the public good characteristics of poverty alleviation, refers that cooperation is beneficial if donors

can enforce contingent contracts but reduces the incentives of the recipient country to help the poor.

It has been recognized however that aid does not exhibit only public good characteristics with recent research modelling the private characteristics of aid (Knack and Smets, 2013; Steinwand, 2013). Knack and Smets (2013) explore the trade-offs and complementarities that donors face between public goods (pursue of development objectives) and private goods (commercial, security and other objectives) by studying the impact of aid fragmentation on the practice of aid tying. Steinwand (2013) distinguishes between public and private properties of aid, exploring the role of a lead donorship in facilitating coordination. According to Steinwand (2013) foreign aid exhibits private good properties, in the sense that donors are not solely interested to pursue development objectives but have self-interested objectives that have no value to the recipient or other donors. Donor coordination then becomes complicated by the fact that there are different base scenarios for providing aid, each one with different logic of cooperation (Steinwand, 2013). Steinwand (2013: 4) argues that coordination means different things for private and public good aid but in reality “aid is a blunt policy instrument and both characteristics are usually present” considering that the “relative mixture can vary widely”.

My argument follows the line of thought of Steinwand (2013) however it differs in the formal roots. Unlike Steinwand (2013) who modelled aid as a contribution to both public or private good I explore the public and private properties of coordination that arise from the donor’s perspective, i.e., the incentives that donors face to coordinate based on the way they perceive coordination which by turn is a reflection of how they conceive the “raison d’être” of aid. Having become an “end” in itself rather than an “aim” to achieve an overall outcome, the way donors behave towards coordination is a spectrum of their own motivations and interests.

The fundamental problem of collective action, known as the tension between individual and collective best interests, is then exacerbated by the fact that donors have different ideologies of coordination as a collective good. The mixture of public

and private good coordination donors determines the viability of coordination mechanisms in-country and the later success or failure of its implementation.

#### 4.5.1 CHARACTERISTICS OF THE GOOD

Public goods have two main properties: their benefits are non-rivalrous (or non-subtractable) in consumption and non-excludable. Non-rivalrous means that one person's use of the good does not subtract the consumption of the good available for others. Non-excludable refers to the fact that it is not possible to exclude someone from using the benefits of the good, i.e. non paying actors cannot be prevented from accessing the group (Samuelson, 1954). On the other hand private goods are rivalrous and excludable.

In theory we could argue that coordination takes the form of a publicly provided good, i.e., coordination entitles an inclusive approach where participation is voluntary and one extra agency involved in coordination mechanisms does not subtract the usefulness of the instrument to the others. In theory this means that the coordination structures are open to all and are universally desirable to ensure the achievement of a common goal. Individual agencies use coordination mechanisms to promote goals that are shared and enjoyed by other donors. In theory, coordination would be a tool to increase aid effectiveness. However we have seen that reality is different from prescription. To explain this gap I argue that we have to understand the properties of coordination that arise from the donors' perspective, i.e. not all donors see coordination as a contribution to a public good. This means that donors who see coordination as a private good do value things such as membership and private information, i.e. exclusivity. These donors value efficiency and therefore the presence of an extra member might hamper the value of coordination mechanisms, i.e., an extra donor is a rival in the sense that it might decrease the usefulness of the mechanism to the other members of the group, in particular itself. It is also a rival in the sense that it "enters in the market" and therefore competition increases.

The problem of coordination in Mozambique is that although it theoretically exhibits characteristics of a public good, not all donors share that view and there is no common understanding of what real form coordination should take and what it

should represent. Donors cannot exclude other partners from using coordination mechanisms however, not all partners' presence is desirable. Donors enjoy equally and simultaneously the benefits of participating in coordination forums however, some think that the value of their individual benefits decreases as one more donor steps into the scene.

The way aid agencies perceive coordination has a direct impact on their individual incentives to participate in coordination forums and to make a real effort for coordination to work out. Public good coordination implies that donors are willing to participate and contribute to the wider forums for a common goal. Information sharing is needed and the benefits extracted from the efforts to coordinate compensate the eventual costs, such as time consuming activities, unproductive meetings or administrative burden. Private good coordination on the other hand implies that donors' willingness to coordinate their activities and their participation in wider forums depends on the benefits they can extract from coordinating. For these donors there are high opportunity costs for participating in these forums which has to be balanced out with the potential benefits that coordination mechanisms can bring. Because private good coordination implies that donors obtain a benefit that is not shared with other donors, they act as competitors. It has been recognized that donors compete for aid impact of their projects ([Annen and Moers, 2012](#)). Competition is enemy to coordination. While the former results from different actors maximizing the relative impact of their projects, the latter is taken from a collective point view where donors have to care about the absolute impact of their actions. Donors do not only compete for promising projects; according to [Acharya et al. \(2006\)](#) donors compete as well for the attention of policymakers, the cooperation of qualified local staff and influence over the policies of the recipient government. Information sharing therefore is not desirable and effective coordination is not an ultimate goal. Coordination for the private good donors is likely to impair agencies' freedom to pursue their commercial and political interests through their aid programmes ([Cassen et al., 1994](#)). In addition, donors know that there are subjects on which they are likely to collectively disagree while coordinating which is costly in administrative time and expense. One informant reflected that:

*“Why is that nobody is really interested in ensuring that everybody is on board when it comes to information? That everybody is talking the same language? Because we are so many different donors...we should invest much more in having the same kind of understanding about what are we talking about. But we don’t! It is a problem from the donor side! And here I am coming to the next thing which is that we are all playing our political games because if I know more than you I can trick you; and although I have signed the MoU I also have my agenda which I want to promote towards the minister. It is not necessarily “our” agenda so my feeling and experience is that it has been the individual countries’ agenda and selfishness that overwrite the common good.” [BIL/3]*

Private good coordination amounts therefore to a delineation of spheres of influence and impact (Steinwand, 2013). Private good coordination implies that donors want to benefit from these mechanisms. Their involvement and participation in coordination depends on the magnitude of influence they are able to achieve. Best established donors do not “need” coordination mechanisms while others see it as a way to ensure that they have wider influence, i.e. they “need coordination”.

*“I think the U.S. does not need us...They got so much money and power they can make decisions without having to consult other partners. We can’t! If we want to do something we don’t have that much influence on our own. We have influence because we are part of a bigger structure so we have to influence everybody else. The U.S. doesn’t.” [BIL/1]*

Ironically, this means that donors might need or not to coordinate and that determines their incentives to collaborate. Private good coordination arises to an extent from an individual need rather than a collective aim; while in private good coordination donors might need coordination for achieving individual self-interested goals, in public good coordination, coordination is needed for ensuring that everyone is on board and works side by side.

The idea that “donors need coordination” is opposite to the established idea that “coordination needs donors”. The fact that not all donors share the same ideology in what regards the essence of coordination is per se an obstacle to ensure effective coordination. The success or not of coordination will then depend on the proportion of different types of donors within the group.

#### 4.5.2 CHARACTERISTICS OF THE GROUP

Group size and group behaviour is commonly discussed in the literature (see for instance Olson, 1965). Usually the larger the group, the harder it is to achieve a

collective optimal. However, in the literature of aid coordination little attention has been paid to the characteristics of the group. Although being recognized that aid structures entitle a plethora of actors that differ in their magnitude, goals and strategies, there is no account of how of the conflicting dynamics prevail within the group and their wider effect on the external environment. My argument is that the group composition is a strong determinant on the failure or success of coordination mechanisms in country.

In Chapter 3 of this thesis I have shown that health partners vary greatly and that has impact on the relationship they have with the recipient government, their choice of aid modality and strategy. Health partners have in addition to take into account each others' existence. The group's composition and particularly the proportion of different types of donors determines the equilibrium, i.e., whether donors do coordinate or not and the effectiveness of that equilibrium- if it is Pareto optimal or not.

## 4.6 INTERPRETING COORDINATION PERCEPTIONS AND INCENTIVES

*"Coordination mechanisms already exist! What we need is to make them work! This can only be achieved if individuals are really willing to coordinate. And maybe we should seriously think of something if we want them to become more dynamic." [NET/2]*

### 4.6.1 PUBLIC AND PRIVATE GOOD COORDINATION

I consider two types of donors: public good donors and private good donors. Whereas the former see coordination as a public good, the latter see coordination as a private good. The defining property of a public good donor is that coordination is always desirable and therefore the utility from coordinating always outweighs the potential utility of defection (not coordinating). For the private good donor the utility of coordinating is outweighed by the utility of defecting once coordination has been achieved in a certain threshold value, i.e. coordination is not always desirable. Coordination entitles a formal or informal structure of relationships between different actors with or without the same interests, motivations and identities. Naturally it complicates if actors vary in identity and size. Coordination is not an individual outcome, i.e., an actor's incentive to coordinate and the

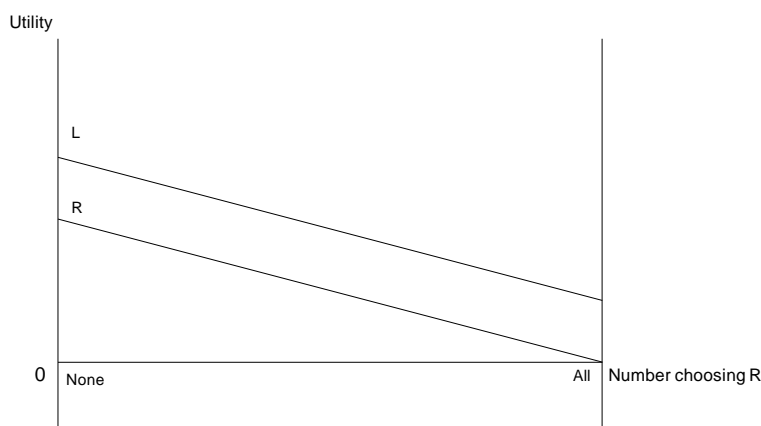
efficiency of coordination mechanisms depends on how the other actors behave. Unlike the idea of “self-interest” coming from the aid allocation literature in which a donor is considered strategic or altruistic accordingly to individual motivations, the concept of coordination encompasses a wider context where individual motivations are balanced out by the external environment and others’ decisions. A donor might want to coordinate but no one else wants to do so or the other way around and the success of coordination and the utility the donor gets from it depends on how the others behave or decide. Schelling (1973) calls these externalities. An “externality” occurs if one person cares about one’s choice or if one’s choice affects others’ choices. “In economics an externality refers to the effects of a firm’s, person’s or agency’s actions that are beyond and outside “-external to” the firm’s accounting or the agency’s purview or the person’s interests and concerns, but within the accounting, the purview or the interest of somebody else” (Schelling, 1978: 212). Because coordination is an  $n$ -person game and donors cannot coordinate alone, they care about others’ behaviour or decisions towards coordination when deciding or not to coordinate.

I use the Schelling’s (1973) diagrams to aid the interpretation of my theoretical framework. In a population of  $n$  individuals, each has a choice of L (Left) and R (Right). For any individual (here labelled *Self*) the payoff of a choice of L or R depends on how many others choose L or R. In graphical terms, Schelling (1973) expresses the payoffs associated with both the “preferred” and “unpreferred” choice as a function of the population selecting the unpreferred alternative. He calls Left (L) to the preferred choice and Right (R) to the unpreferred choice.

Let’s first consider a public good donor. For this donor we would expect that it always prefers to coordinate and therefore a Left choice (in this case: to coordinate) is always superior to a Right choice (not to coordinate) no matter the number of agencies that choose the Right choice, i.e. not to coordinate. A truly pure public good donor would always make the most effort to coordinate no matter the number of organizations that choose the same or different options. These are the donors that welcome everyone to the group meetings independently of their aid modality or funding mechanism, support the presence of NGOs in all forums no matter the number of participants in those forums and completely endorse the



Paris Declaration on Aid Effectiveness. Multilaterals organizations tend to behave more in this way. To these donors it is important to have everyone on board, to share information and increase communication in order to achieve a collective maximum. If everyone had the same view, the equilibrium would then be that all donors would coordinate (all L) (see Figure 4.2).



**Figure 4.2 Public good donor utility curves.**

*Note: The preferred choice for the public good donor is to coordinate (L). R is the unpreferred choice (not to coordinate). The x-axis represents the number choosing R, i.e., the number of donors that prefer not to coordinate. The payoff curves slope downwards since it is expected that the utility from coordinating decreases as the number of donors choosing not to coordinate increase.*

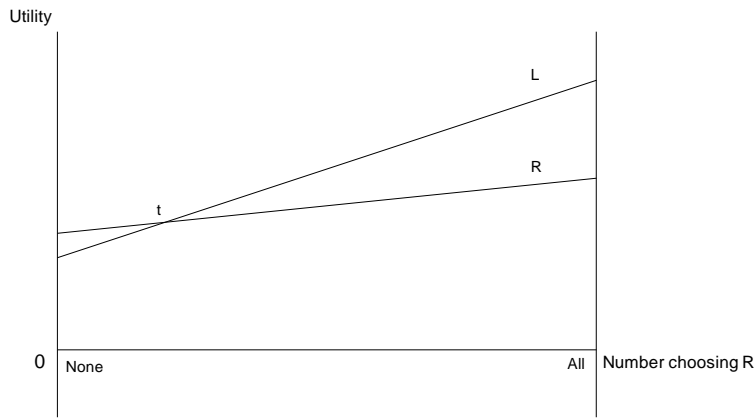
*(Source: author's illustration)*

Let's now turn to the private good donors. Although in theory the private good donor understands the usefulness of coordination, in practice it tends not to prefer this alternative or considers it a "burden". For the private good donor, the larger the group the worst it is for himself and for the collective group: a lot of time is spent on coordination, the meetings are not effective and there are huge opportunity costs for engaging in coordination. For private good donors, coordinating means not spending time working on their own plans and increases the potential that other donors would individually benefit from their information which would then increase the competition between them. These donors face a trade-off: in theory they support coordination; in practice they consider it a hurdle that can hamper their self-interested goals. Due to this trade-off donors do not have the same unconditional choice. As observed in practice, donors might not want to coordinate, however due to political pressure they tend to participate up

to a certain degree in coordination forums<sup>61</sup>. In [Figure 4.3](#) we see that the payoffs curves intersect, i.e. coordination is not universally preferred as it was before for the public good donors. In order to facilitate the interpretation of results I consider that donors' preferred choice (not to coordinate) is now a function of the population selecting the unpreferred alternative (to coordinate). This fraction of the population is represented by the public good donors who prefer R. Right (to coordinate) is the preferred choice when the number of choosing Left (not to coordinate) is high, whereas Left is the preferred choice when the Right choice is dominant. In practice this means that when there is a higher number or proportion of public good donors, a private good donor would prefer to defect, i.e. not to coordinate. This is a reflection of the fact that a public good donor would always want to spend too much time coordinating which is not optimal for the private good donor. The more there are of those who want to coordinate; the worse it is for the private good donor who does not universally prefer to coordinate. On the other hand, if the number of public good donors is small, the private good donor has more interest in trying to coordinate for several reasons: firstly the meetings are more efficient due to the reduced number of public good donors, secondly having less public good donors on board means there are more private ones - in this scenario the *Self* donor would prefer to have as much information as possible about the market and therefore it could achieve that through coordination. In the case that the *Self* donor is not a leader, it would take advantage of coordination mechanisms by accessing information and influencing the wider international community. However this is only optimal until a certain  $t$ - (the point where the two curves intersect). As reported before, some donors might need coordination whereas other might not. This is made explicit in [Figure 4.4](#). Letter codes indicate which choice is preferred, by how much (y-axis value) and the direction of the payoff differences (arrows) will drive the equilibrium. This structure leads to an equilibrium at the intersection of the two payoff curves.

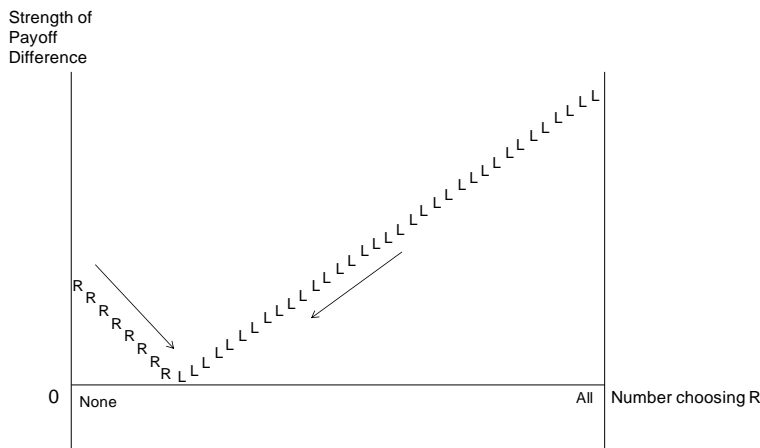
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<sup>61</sup> I do not consider the case when "no coordination" is universally preferred by some donors. This is because in practice that does not happen. Even for those donors who do not prefer to coordinate, some degree of involvement in coordination mechanisms always takes place as they are politically forced to do so.



**Figure 4.3 Private good donor utility curves.**

*Note: The preferred choice for the private good donors is not to coordinate (L). R is the unpreferred choice (to coordinate). The x-axis represents the number choosing R, in this case, the number of donors who prefer to coordinate – the public good donors. Nash Equilibrium is at t-. (Source: author's illustration)*



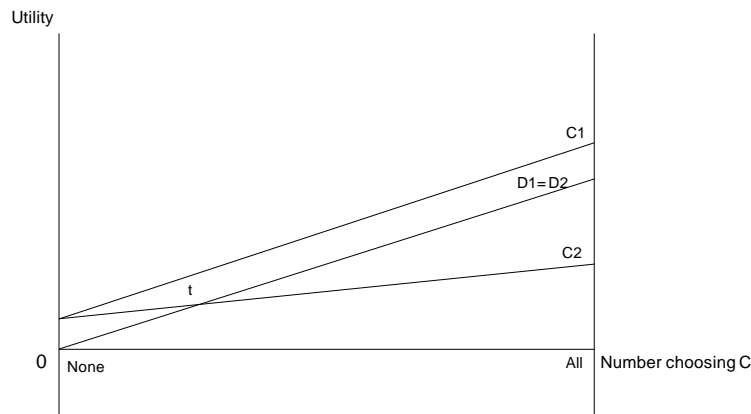
**Figure 4.4 Nash Equilibrium for private good donors.**

*Note: R (coordination) is only preferred until a certain point t-. Afterwards, L (no coordination) is preferred. (Source: author's illustration)*

#### 4.6.2 A N-PLAYER GAME WITH DIFFERENT IDENTITY DONORS

If we merge [Figure 4.2](#) and [Figure 4.3](#) we have a picture of how the overall incentives to coordinate look like in Mozambique. As we saw, the public good donors will always prefer to coordinate, whereas the private ones will only prefer to coordinate if the number of public good donors is less than  $t$ -. So the question is: what is the equilibrium when all players interact and they are playing their individual games?

If the number of public good donors is bigger than  $t$ , the equilibrium is that all public good donors coordinate ( $C_1 > D_1$ ) whereas all private good donors defect (do not coordinate) ( $D_2 > C_2$ ). If the number of public good donors is less or equal to  $t$  the equilibrium is that all public good donors coordinate, some private good donors coordinate as well but the rest defect (Figure 4.5).



**Figure 4.5 A N-player game with private and public good donors.**

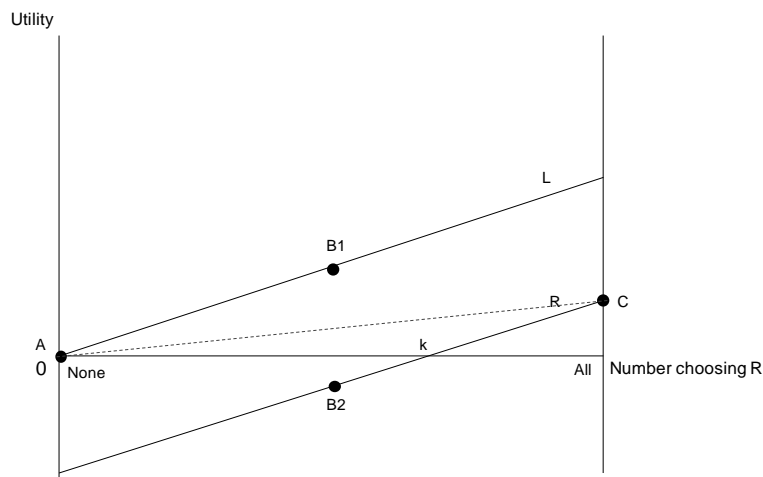
*Note: The payoffs associated with both coordinating (C) or not coordinating (D) are expressed as a function of the population selecting coordinating (C). 1 represents the public good donor. 2 represents the private good donor. (Source: author's illustration)*

*Will all donors ever coordinate?*

As we saw donors have different identities and perspectives towards coordination which are translated into their efforts to coordinate or not. Fieldwork research informed about donors' lack of motivation to coordinate and a general feeling of dissatisfaction about coordination mechanisms. To some donors, the rhetoric of coordination is romantic at best. An informant would even argue: "Coordination...that does not exist." [BIL/3] The theory might be good but in practice it is not really viable. Are the donors, to whom I called private good donors, willing to increase coordination efforts at this stage?

The discredit that private donors have on coordination mechanisms is making them reluctant to increase their efforts. Simultaneously, increased pressure for measuring aid impact is being demanded which hampers coordination efforts. Let's than now turn to the scenario where private good donors do not prefer to increase coordination efforts and that remains the preferred choice independently of the number of public or private donors. In that case we have a straight payoff

curve as represented in Figure 4.6. Point A is the situation where all donors have chosen not to increase coordination efforts, the preferred choice. At the far right, on point C everyone has chosen to increase coordination efforts while in between there is a continuum of options where some choose L and others R. Let's consider two discrete positions on those curves, B1 and B2. The individual payoff at C is higher than A but not as high as B1, the reward for the *Self* for not increasing coordination efforts. Starting from C, one sees that B1 is clearly better, and since everyone will figure this out, and no one wants to get trapped in position B2, not increasing coordination efforts is clearly the right choice for one individual. However, despite recognizing the benefits of C (increasing coordination efforts), the *Self* prefers not to increase coordination to avoid B2 and hopes it will be in B1, where *Self* is not coordinating while some others are. However it settles for A, the Nash Equilibrium (N.E.) - no one increases the coordination efforts. This is the typical case of a Prisoner's Dilemma where the equilibrium is sub-optimal.



**Figure 4.6 Pareto suboptimal equilibrium.**

*Note: L (not increase coordination efforts); R (increase coordination efforts). The x-axis represents the number choosing R, in this case, the number of donors who prefer to increase coordination efforts. N.E. is in point A. (Source: author's illustration)*

*Is it possible to reach C?*

We see that the unpreferred payoff curve crosses the X-axis at  $k$ . This point represents the minimum size for the R movement- the critical mass, i.e. all of those choosing Right will be better off than they would be if all had chosen Left (where the payoff for everyone is nominally zero), even if the remainder continues

choosing Left. Will this ever happen? If all choose Left, there is no incentive to switch to Right unless the creation of a coalition can be assured. As so, because Left is always preferred it always pays to “cheat” on one’s coalition members. This is one of the most common problems of collective action denoted as free-riding.  $k$ - is therefore not stable in the long term. In this case free-riding represents a case where a donor might not coordinate while expecting the others to coordinate for him.

#### *How to ensure a viable coalition?*

As soon as donors see the potential benefits of  $k$ - they have incentives to recruit more members from the population (in this case represented by the donor community). However, in order for this coalition to be viable there must be some form of real commitment. Enforceable contracts are often appointed solutions for generic cases, however once can easily see that it does not work for coordination mechanisms. Alternatively the *Self* must then see what others will do. There must be a moment of recognition which shows that most would do the shift from L to R. The end must be seen to be achieved. Schelling (1973) uses coalition to indicate those that are induced to choose R. The institutional definition however refers to a subset of population that can arrive at a collective decision for its members. That can take two forms: “i) disciplining individual choices of the members or ii) making collective choices on behalf of them” (Schelling, 1973: 394). Strong leadership might be a way to achieve the former, i.e. to influence a voluntary shift to R. For the private good donors, however, a strong leadership would need to come from the government as they are of the opinion that the government should be the one coordinating the coordination, leaving more time for the donors to work on their plans. Another type of strong leadership would be the case of a lead donor who would widely share and collaborate on coordination efforts. One of the main problems in Mozambique is that the lead donor, the U.S., does not share the same coordination mechanisms and funding systems of other donors. If it would come on board with the others in a more open way or if the funding mechanisms could somehow be aligned, donors would find their efforts to coordinate more rewarded. At the moment, some donors are questioning the need for coordination when the

most important donor is not even on board and has a parallel system with the government.

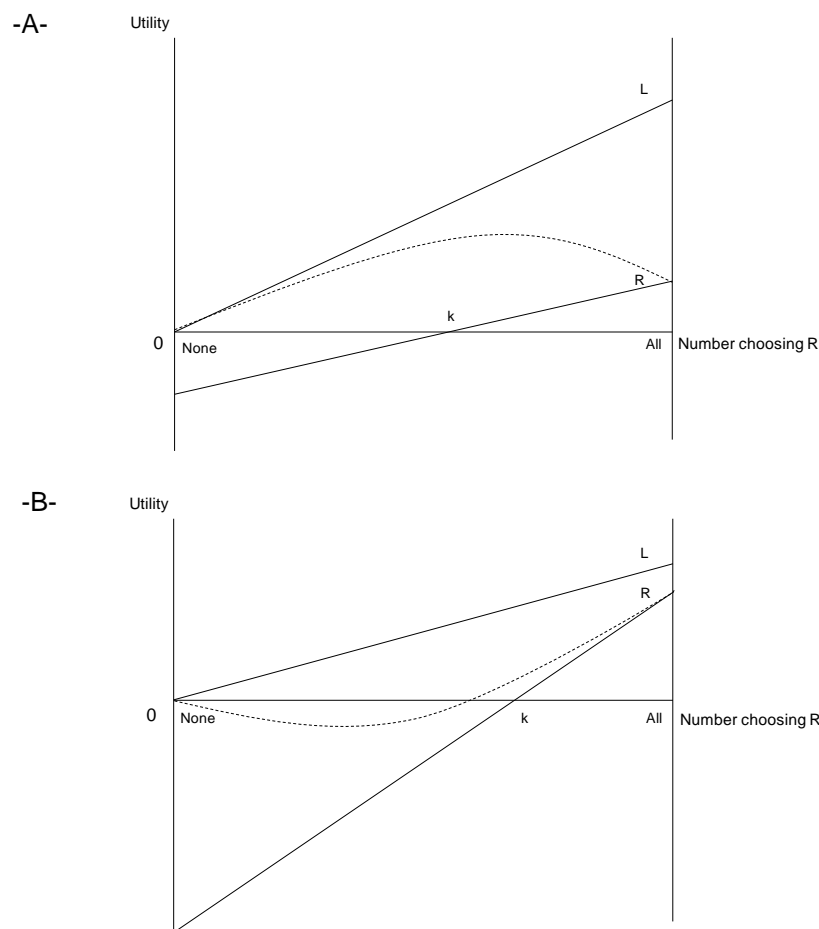
With regards to the second form of coalition, some donors are not really comfortable with other donors making collective choices on their behalf. This is because they are aware that in addition to collective goals, donors have their own personal and private agendas. This situation is portrayed for instance, with the case of the Focal Partner (FP), a partner that should represent all other donors' views and ensure that communication with the MoH is efficient. The problem in Mozambique is that this matter is not clear and there is no common understanding of which form of "coalition" should the FP role entitle.

*Does the incentive to stay out of the coalition remains constant?*

What happens to the difference in value between Left and Right? Does the incentive to choose Left and stay out of the coalition increase, decrease or remain constant with the size of the coalition? In other words, does the cost of an R choice remain constant as the number of people (i.e. aid agencies) choosing R increases? A constant relationship between L and R, as shown in [Figure 4.6](#), would mean that private good donors would be indifferent to the coalition size meaning that their incentive to keep choosing L and the disadvantage of R are constant. An increased difference in value between L and R would mean that the more others choose to coordinate and switch from L to R, the more the *Self* gains by staying out of the coalition. Alternatively, if joining a coalition of people that want to coordinate means that the cost of an R choice decreases as the number of people switching to R increases, the incentive to choose R has a diminishing difference (see [Figure 4.7](#)).

The incentive would depend on the type of actor we are looking at. A very well-established actor for instance, would not see an increased value of joining a coalition as this means giving more to the group than receiving. The same might happen with a strong leader who sees itself gaining from staying out of the coalition and marking its way through independently of all other donors. On the other hand, for less established donors, a switch to R is an easier alternative if that means only "paying their share" to be part of the group, it becomes more rewarding as more agencies join. At the same time these donors would be better

off if they would reduce the competition between them and coordination achieves this. This is measured by the change in the vertical distance between the two curves with the number that choose R. In Figure 4.7-A the curve opens towards the right, showing an increasing difference between L and R whereas in Figure 4.7-B there is a diminishing difference.



**Figure 4.7 Increasing and diminishing difference between L and R.**  
**A- Increasing difference between L and R.**  
**B- Diminishing difference between L and R.**  
*(Source: author's illustration)*

*Community versus individual welfare*

The incentive difference does not only depend on how agencies are incentivized to choose L or R but also on how they see that a collective maximum can be achieved. Let's imagine that the collective maximum occurs only when all choose R, i.e. when all choose to coordinate, if the terms of the coalition have been properly set.

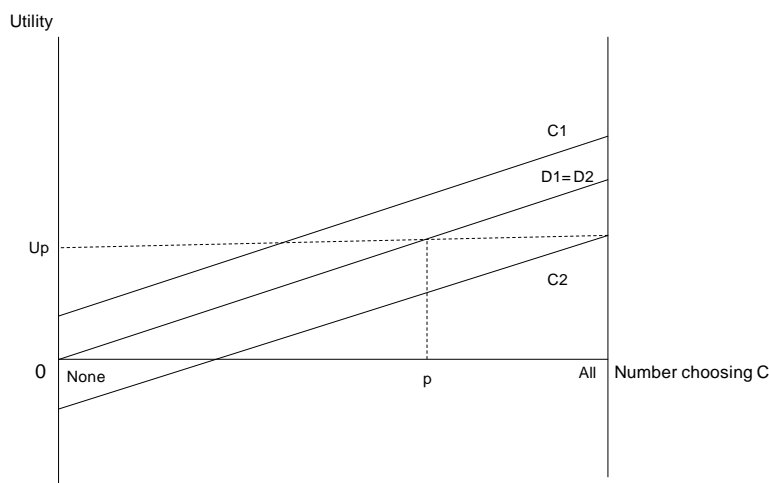


Alternatively it might occur that the coalition for coordinating is too strict or imply some hidden costs, such as huge time consuming activities for instance, and agencies may be collectively better if some still choose Left, that is if some stay out of the coalition. In [Figure 4.6](#)- the Prisoner's Dilemma - the dotted line is a weighted average that represents the average population's payoffs. We can see that the population's average welfare increases as more choose R. Collective maximization occurs when everyone chooses R- to coordinate. In [Figure 4.7-B](#) collective maximization also occurs when all choose R however the dotted line is not straight. However in [Figure 4.7-A](#) the situation is different. The collective maximum is short of the right boundary, i.e. the optimum number of organizations to coordinate is less than the entire population. The structural problem in this case represents a very recent debate about whether total coordination is desirable or not. It might be that if everyone coordinates, the system is not efficient enough, too much time is spent on coordination mechanisms and coordination structures might not work in an optimal way so that they have the desired impact on the population, i.e. to increase their welfare. Also as defended by [Torvick \(2005\)](#) a successful coordination, i.e., a situation where all donors actively coordinate, might reduce the incentive for the receiving government to help its own citizens and increase its own contribution. Overall if that happens, coordination by donors is not optimal, i.e., the collective maximum might not be the point where the entire population of donors coordinates.

In all cases there is a conflict between individual versus collective decisions, i.e. decisions that would be made on behalf of the society as the natural equilibriums are not necessarily at the points that produce the overall best outcome. The Nash Equilibrium for the three cases (depicted in [Figure 4.6](#) and [4.7: A & B](#)) is when all donors do not increase coordination efforts (all L). In all cases the collective maximum is considerably to the right of the N.E., with [Figure 4.6](#) and [4.7-B](#) having it at the right extreme. Naturally these results always have social implications; without any sort of government intervention only a radical restructuring of rewards can make possible to achieve the collective maximum. However as we saw from all the past description, a collective optimum outcome seems almost impossible to achieve mainly due to different actors identities and attitudes towards the collective perception of coordination.

*Is the state of coordination Pareto optimal now?*

Private good donors seem reluctant to increase coordination efforts. At the same time public good donors have the opposite preference: they always prefer to increase coordination efforts. The equilibrium is than a situation where each type of donor chooses their preferred alternative (see Figure 4.8). This equilibrium is Pareto suboptimal if  $R < p$ , i.e. if the number of public good donors is less than  $p$ . This is because if less than  $p$  donors increase their efforts, the utility from coordination efforts is  $Up$ , that is less than what they would have gained if all donors had increased coordination efforts. Figure 4.8 illustrates the importance of the ratio of public good donors versus private good donors for the outcome to be Pareto optimal or not; i.e. if more public good donors exist coordination efforts are increased and coordination itself has a better chance to become optimal.



**Figure 4.8 The utility curves of increasing aid coordination efforts or not for public and private good donors.**

*Note: The payoffs associated with both increasing coordination efforts (C) or not increasing coordination efforts (D) are expressed as a function of the population selecting increasing coordination efforts (C). 1 represents the public good donor. 2 represents the private good donor.*

*(Source: author's illustration)*

### *Weights versus number*

Up to this point I have been deriving models where the choices of individual donors are mediated by the number of others choosing their unpreferred alternative. The characteristics of the “others”, represented in the x-axis were neutral and only their number was relevant. However, one might think that more important than the number of “other” donors is the “relevance” or “influence” that

they have on the wider aid community. A donor's decision to coordinate or not might be influenced by whether the lead donor is involved or not in the coordination group. If we assign a weight factor to each agency according to their volume of contributions, the x-axis would not represent all others choosing R but the combined player weight of those choosing R. If the combined player weight is bigger than  $k$  a coalition might emerge and it might become viable if it is taken seriously. A private good donor might in that case change to R if the combined weight of all other actors is big enough for it to change, i.e., if the top-X agencies are trying to coordinate, a *Self* donor might win more if it joins the group than if it remains out of the coalition with other "less influencing" donors. Again, if the U.S. would join the group in a consistent and collective form, all other donors would more easily see the benefits of coordinating while being allied to a major donor. In this case from an individual perspective one donor with a higher weight would be enough to make other donors switch to R. Still, it would take a majority of donors to ensure that the outcome would be an effective coordination.

#### 4.6.3 DONORS-NGOS RELATIONSHIPS

NGOs keep complaining about the inefficiency and lack of interest in their own coordination meetings. However when it comes to higher level meetings with the donors, represented for instance by the Health Partners Group (HPG), NGOs have interest in joining the group. Their interest does not however necessarily derive from their wish to increase the collective good, but their interest to get to be known by the wider donor community and have more visibility. Additionally, they want donors to know what is happening on the ground through their lenses, the partners that implement donors' projects. Despite the fact that the HPG is not the appropriate forum for NGOs to be recognized by the international community, they feel the opposite and in particular they are of the opinion that more can be achieved on those forums than on NGO-level forums, since donors are the ones providing the money and deciding everything.

Donors do not share the same opinion with regards to NGOs' involvement in coordination forums: some think that NGOs are very welcome in their forums, others are not happy with their presence. However they seem to agree that the HPG forum should not be spoiled by a huge number of NGOs who, as a larger

group, would then compete with the donors themselves. This reflects a situation where the equilibrium is an intersection between two payoff curves, with the x-axis representing the number of NGOs who choose R- to coordinate. In equilibrium only some NGOs manage to attend the forums and donors have to adapt to their participation. If the number of NGOs is bigger than  $t$ -, donors prefer them not to be involved and not to coordinate, if that number is less than  $t$ -, donors (on average) accept their involvement in the group. The graphic would be similar to the one in [Figure 4.3](#).

#### 4.6.4 NGOs-NGOs

NGOs-NGOs games are somehow different from donors-donors games. Unlike donors, NGOs depend on external funding for their survival. Unlike donors NGOs do not imply transaction costs for the recipient. Unlike donors, NGOs cannot be used as bargaining power with recipients because they are micro aid ([Knack and Smets, 2013](#)). As a consequence, with donors' pressure and the lack of political pressure, NGOs' motivations differ from donors. NGOs face a much more private good attitude towards coordination which is natural, taking into account the structural context in which they are embedded. Being accountable to the donors, NGOs are therefore much more interested in what happens at that level, than with what happens within the NGOs level. Therefore the way NGOs behave and decide to coordinate or not is mediated by the donors' behaviour and not necessarily by the NGOs'. Striving for survival, NGOs' main focus is measuring impact of their projects. Coordination is then very complicated to achieve because each NGO has a different donor; each donor has indicators that NGOs are forced to reply to. Informants explained that each NGO has its own work plan that they signed over a contract and they have to respond to it, independently. Simultaneously NGOs do not have any incentive to coordinate with each other. Unless donors provide NGOs incentives to coordinate with each other, they will not feel inclined to do so. Some interviewees argued that it is a donor's responsibility to ensure that NGOs coordinate and that that could be achieved through enforcing a contract where coordination was part of the deal.

*"NGOs are business partners who manage to participate in a tender process, and won a contract to deliver a certain service on behalf of a donor. They do not necessarily come with a development agenda in the*

*first place. So if you according to your contract arrangements are not obliged/ forced to focus on partner coordination, you don't do it." [BIL/2]*

*"If you are a donor agency and you fund your money through a NGO I think you have the moral obligation to ensure that you save coordination."*  
[MUL/1]

Eventually it can happen that NGOs belong to a consortium funded by the same donor where each NGO has a very specialized task and work in a complementary way. When that happens, coordination can be achieved. "CONSACA" for instance is a consortium of NGOs (Concern, Care and Save the Children) funded by DFID that works together in emergency projects. However this type of coordination is rather limited as it only encompasses the members of the consortium that are funded by the same single donor. Others however, argue that coordination is a MoH's responsibility. At the moment NGOs feel they are lacking government leadership in what regards coordination. In sum NGOs consider that in order for coordination to work out it has to come from the top: either through the government or enforced by the donors.

Picturing a NGO-NGO game using [Schelling's \(1973\)](#) diagrams would look like the one in [Figure 4.6](#) where a *Self* NGO would not have incentives to increase coordination independently of the number of other NGOs choosing to coordinate. In this case the equilibrium is a situation where NGOs do not coordinate with each other. This equilibrium is Pareto suboptimal; enforcing aid coordination could potentially give rise to a Pareto optimal outcome as NGOs would move from L to R. However, as we have seen before, donors' lack of incentive to coordinate hampers this idea. Because it is difficult to measure each donor's individual impact on health outcomes in-country, donors compete for aid impact. If donors compete, NGOs compete as well. Coordination becomes then a secondary goal. Two measures for increasing aid effectiveness: increase aid impact and increase coordination, seem to go in opposite directions ([Annen and Moers, 2012](#)).

According to the informants coordination within NGOs is also complicated due to a high turnover. The average working time for an employee in an NGO is 2-3 years. In particular, the national representatives are forced to be redundant after 4-5 years of placement due to potential conflict of interests. The high rotativity of staff brings positive aspects for the organization such as development of new ideas and

increased creativity. However, it can hamper coordination efforts which take a long time to achieve. By the time a NGO starts engaging in coordination, another country's representative arises with a different idea that is not linked with the work developed so far, it was pointed out.

Finally some NGOs referred to the fact that their work is mainly about community development programs, and therefore coordination is not taken very seriously nor is regarded as needed (as it should be for instance when NGOs work in clinical treatment). NGOs revealed that community programmes are never enough, so the more the better and coordination becomes a secondary issue. Despite their justification, this seems more of an excuse for not coordinating rather than a valid argument.

#### 4.6.5 A FINAL NOTE: FRAGMENTATION ON THE GROUND

*"Did it happen to your organization to have a project in one place and get to know that there were similar projects running at the same time by other NGOs?"*

*"Yes"*

*"How did you react then? Did you keep doing your project?"*

*"Sure...People don't mind having the same training twice"*

*(silence going on...)*

*"Don't you feel that there should be a formal coordination structure within NGOs so that those situations do not occur anymore?"*

*"Yes...but that is our live. We exist because a donor funds us. If it wants us to go to a specific location even if it is crowded with other NGOs we go and that's it. This is just an example to show that duplication arises from self-interest. These are the rules of the game. After all we are all here because we want to help and we do so many things for the population...but this is our job as well..." [iNGO/3]*

This conversation illustrates how NGOs' willingness to coordinate is rather weak and has immediate effects on the ground. It is not that NGOs do not want to coordinate, however coordination between them is simply not a critical issue nor something they think they should be worrying about. Putting it straight, in a way NGOs feel that coordination is not their business. The structure in which they are embedded is such that NGOs' accountability seems to be exclusive to the donors. NGOs' work plan set by the donor is so fixed that there is very low margin for coordination even within the same donor. A NGO was revealing that if they have different projects running in the same community they are not allowed to share cars or any other equipment from other projects. And that happens irrespectively

of whether NGOs' funding for different projects comes from the same donor or different one. "Everything has to be worked out independently" [iNGO/6].

Duplication and overlap of projects is also a common practice in Mozambique. One informant referred: "NGOs always think about their own survival and success even if they have a neighbour NGO that is doing the same project" [MoH]. This situation is particular critical when the same community receives contradictory training from different NGOs which unfortunately is quite common. For instance, with regards to HIV, different ideological perspectives are put in place and influence the type of HIV community programs: some are pro prevention whereas others focus more on treatment. There are also those who favour sexual abstinence which is not supported by some.

NGOs' lack of coordinated support is particularly problematic for the MoH. Firstly because the MoH does not have a proper mapping of NGOs' work and therefore it complicates internal planning and secondly, because NGOs' support is very fragmented. According to the informants, NGOs are supposed to fill in forms and report to the MoH who should then try to coordinate. However, many NGOs do not do it and are not questioned about it.

By focusing only on their scopes, NGOs tend not to consider other aspects of the wider environment and leave it for the MoH or other partners to worry about, it was commonly discussed by the informants. Many projects are therefore non-sustainable. For instance, it happens with community training programs that NGOs simply train the population and have no extra funding to pay them the subsidies or provide medicine kits. For NGOs this is not their responsibility but something the MoH should take the lead on. According to an informer this is a very narrow and fragmented approach to aid. It could be solved if NGOs would really make an effort and acknowledge their limitations, trying to coordinate with other partners so that their services could complement each other. However, that does not seem to be common practice, it was noted by an interviewee [MUL/1]. As referred by [Acharya et al. \(2006\)](#) there is a lack of sense of responsibility for the outcomes of aid as donors and NGOs focus on obtaining results for their projects and not an overall goal.

According to informants from the government, very frequently the MoH does not get to know what NGOs are doing which becomes particularly critical when they have overlapping programmes. For instance, Community Health Workers (CHW) are a program coordinated by the MoH where they provide a very specific and intense training course across the country in order to form appropriate staff. NGOs also train CHW however their approach differs: i) the training is different (NGOs' training is two weeks against the four months of the training provided by the MoH), ii) the job is different (CHW from NGOs are like mini doctors working in a health post whereas MoH's CHWs are more like mobile staff that approaches communities in their houses) and iii) the terminology used also differs. At the end of the day two different models are developed under the same programme and no coordination is taking place. The informant concluded that the MoH is not aware about who coordinates with whom and who communicates with whom.

“Harmonization means coordinating among agencies to ensure that two wells are not built side by side in the same place; or that two different agencies vaccinate the same children twice inadvertently damaging them” (Woods, 2011: 5). It seems so simple in theory...

#### 4.7 CONCLUSION

This paper explores empirically and theoretically aid agencies' coordination efforts in Mozambique. The starting point for this research is the implementation of coordination in the health sector in Mozambique as it is perceived in practice by different partners. Informed by such findings I believe that distinguishing between coordination as a private or public good uncovers different agencies' identities, strategies and incentives that underpin the possibility of coordination failure. I explore the roots of agencies' incentives to coordinate and illustrate why coordination seems so hard to achieve. I believe that the debate around coordination and fragmentation does not necessarily address these issues. This research reveals a picture of aid coordination that has more to it than just a calling for more and better coordination as suggested by the global agenda.



The empirical results from fieldwork research in Mozambique suggest that there is a general attitude of discredit and dissatisfaction towards coordination despite the advanced mechanisms in place in the country. There is lack of common understanding of coordination as a concept and what it entails. There is a clear issue of membership and leadership however aid agencies' opinion on the best way to overcome these issues varies greatly. For most agencies coordination has developed a life of its own which is translated into high opportunity costs, especially for those striving for impact and fast results. There is no proper sharing of information within agencies which is particularly complicated due to the amount of vertical off-funding initiatives in the country.

The theory developed from empirical grounding suggests that in equilibrium public good donors coordinate and some private good donors coordinate while the rest defects. However, the equilibrium differs from the collective maximum: an optimal coordination can only occur if more (or all) private good donors are willing to coordinate.

Taking on the private donors my analysis revealed that their incentives to coordinate are neither strong nor stable. The establishment of a strong coalition could potentially influence donors' motivation to coordinate. That could be achieved through more leadership from the government and/or the involvement of the lead donor, who appears to have a rather passive presence in coordination.

NGOs' incentives to coordinate with each other are even weaker. Their financial dependency and accountability to donors makes coordination within NGOs a rather irrelevant topic or something they do not feel responsible for. Enforcing coordination either through donors-NGOs' contracts or mandates from the MoH could potentially make the switch, with NGOs feeling forced to coordinate. But once more, donors also do not have incentives to coordinate their NGOs. Competing for impact, they strive for individual results. If donors compete, NGOs compete as well and that has immediate effects on the way aid is delivered on the ground.

Coordinating with donors is however a different story for NGOs. Either to gain individual visibility or share information of ground level progress, NGOs feel the

need to be much more involved in donors' coordination forums, which is not appreciated by most of the donor community. The result is a situation where there is no clarity, definition of purposes and a suboptimal outcome for the collective group, i.e., those forums are not effective enough.

This chapter raises the question whether coordination is then achievable or not. Private good donors must be willing to coordinate both at a macro and micro level. The government must be willing to provide leadership. The lead donor must be willing to be more involved within the wider aid structure. Otherwise, the success of coordination rests on the proportion of public versus private donors.

From a policy perspective this research suggests that unless the incentives of private good donors to coordinate are addressed and the government is involved, there is no guarantee that coordination will ever be achieved. The efforts to improve aid coordination are doomed to failure and "cheap talk" (as referred by [Annen and Moers, 2012](#)) if we treat aid as a black box; it is not enough for agencies to share information if they are not willing to coordinate. A clearer and more transparent understanding of coordination, a proper setting of responsibilities shared between agencies and the government and an accurate awareness of agencies' diverse identities are the roots for advancing improvements in coordination. This research accentuates [Annen and Moers's \(2012\)](#) reflection that coordination and aid impact, two measures for increasing aid effectiveness, generate opposite effects. In particular, I add that aid agencies which compete for aid impact do not have strong incentives to coordinate.

Another measure commonly referred in the literature to promote aid effectiveness at a macro level is donor specialization either on a specific sector or country. This would happen if donors would take a global or regional approach and try to reduce the number of actors involved in each case. In this context, would some donors consider to leave the health sector and specialize in other more "needy" or "disproportionally financed" sectors? Evidence suggests that this is a good idea in principle but it is not being applicable in practice ([Acharya et al., 2006](#)) and Mozambique is not exception to the case. The international community is as keen as working in Mozambique as it is in working in the health sector. According to the informants, the health sector in Mozambique has a special place in the government

because many politicians came from the health sector; in other words for the donors that want to get influence, the health sector is very strong politically. Delving deeper on aid agencies' incentives to work in the health sector and particularly in specific areas within the sector (e.g. provinces or health subgroups' specialization) should be explored in future research.

Finally in this research I focused on modelling the aid agencies' side while abstracting from the recipients' game. An interesting extension of my analysis could be to investigate the recipients' incentive to facilitate or lead the aid agencies' coordination. This could potentially shed light if there is any feedback mechanism from donors' incentives to coordinate to recipients' behaviour towards coordination and vice-versa.

[Torvisk \(2005\)](#) provides some first insights on the negative consequences of coordination on domestic policy by decreasing recipients' willingness to increase their budget. Are recipients than not willing to make coordination work for donors? Answering this question could provide a more robust answer to the question of whether coordination is achievable or not. In addition it could eventually inform the current debate about whether coordination is desirable or not and by whom and cleared out some of the smoke screen on aid coordination and fragmentation.

# CHAPTER 5

## CONCLUSION

### 5.1 CONTRIBUTION AND RELEVANCE OF THIS THESIS

This thesis aims to contribute empirically, methodological and theoretically to the debate on aid effectiveness.

A major methodological contribution is provided on Chapter 2 through the use of a multilevel model to investigate the effect of health aid on health outcomes taking into account the aid heterogeneity that exists between Mozambique's provinces. This method takes into account a sub-national level of aggregation to research aid effectiveness and although being constrained to the case of Mozambique in this thesis, it can easily be replicated to other countries, data permitting. Furthermore, this research attempts to be methodological innovative by employing a mixed-methods approach that integrates game theory with qualitative methods, thus moving beyond the traditional methodological approaches to study aid effectiveness. Modelling qualitative evidence is rare in the literature and presents here an original case application.

Empirically, all chapters are of academic relevance. Chapter 2 merges data from the Official Development Assistance to Mozambique database ([ODAMOZ](#)) with data from the Demographic Health Survey ([DHS](#)). The use of these databases and their combination, presents an original application to study aid effectiveness that was developed specifically for this research and, to my knowledge has never been used to date. Chapters 3 and 4 make use of qualitative evidence purposely gathered through fieldwork research that includes information from a variety of actors (bilateral and multilateral organizations, foundations, local and international NGOs, members of civil society, research institutes, consultants, government and former aid workers) analysed together in this research. Instead of focusing on one type of aid agency, as it is commonly found on the literature, this research considers all the main actors of the aid industry at different levels, thus exploring an extensive number of links that exist between aid organizations.

Finally, the goal of Chapters 3 and 4 is to develop a theory of health aid disbursement decisions and coordination, respectively. Both chapters contribute to filling a theoretical vacuum in the aid effectiveness literature using game theory as a systematic and dynamic framework. Chapter 3 aims to provide a systematic narrative on aid disbursements in-country. Chapter 4 brings new theoretical insights by framing the aid debate using collective action theory in a novel application of [Schelling's \(1973\)](#) work on externalities, to the theory of aid coordination. Finally, Chapter 4 contributes conceptually to the understanding of coordination.

Last but not the least, a critical goal of this research is to inform policy. Policy recommendations are developed on whether and how health aid could work better and more effectively, looking essentially at the behaviour of aid organizations.

## 5.2 THESIS LIMITATIONS

Despite the vast literature on aid-growth models at a macro level, evidence at the sector level is scarce. One of the major contributions of the first paper is to provide a new model to study aid effectiveness while looking at health sector aid specifically. To my knowledge, this is the first paper taking a multilevel approach to measure the impact of health aid on health outcomes at the country level. In addition, this paper uses an original dataset that merges two databases: the ODAMOZ and the DHS. Although this dataset is unique and represents a major contribution to this research it is worth noting its limitations. Firstly, the paper takes a cross-section approach and compares two points in time: 2003 and 2009; however, while the former dataset uses birth recodes as the unit of the analysis, the latter uses data from the AIS/DHS where women are used as the unit of analysis and therefore there is no account of the particularities of each child birth. The use of these cross-sections to address the research question should then be considered a first step and should be improved further on with a new dataset at the child level from the DHS for a more recent time period, which was not available at the time this thesis was written.

The ODAMOZ dataset is also a valuable source of information for this research since it provides detailed data on disbursements of Official Development Assistance in Mozambique by province. However, as noted before it has some imperfections: not all donors input data in the ODAMOZ database; wrong imputation of data by the donors might occur and, more important a lot of the funding from vertical initiatives and private aid agencies is not accounted for. Aid from these sources is becoming increasingly important and in Mozambique, specifically, this type of aid had a steeper increase in 2002 with the emergence of global health initiatives such as the Bill and Melinda Gates Foundation, Global Fund, PEFAR to mention the most important. This situation has been referred in the cross-country literature (see for instance [Mishra and Newhouse \(2009\)](#), among others) and the difficulties in finding reliable private aid data have been mentioned. Finally, when accounting for a sub-national level of aggregation, province level data is even harder or almost impossible to achieve. As demonstrated throughout this thesis sharing private financial information is not widely appreciated by donors: it is not simply the fact that the information is hard to collect but actually it is not available for anyone (not only for the general public but also for the wider development partners' community).

Finally, the multilevel model developed in this research deserves further investigation. This research concentrated on determinants of child mortality at the individual level while considering the provincial effect of health aid. An interesting extension of this model would be the inclusion of additional province-level variables not correlated with health aid. Also, the use of an instrumental variables approach would relax the endogeneity threat, even though in this model it might not be a case of concern as previously explained in Chapter 2.

Chapters 3 and 4 provide a major contribution to the field of aid effectiveness by using primary data collected through fieldwork in Mozambique. Ideally, the partners' identity would be revealed, however due to confidentiality this was not possible. In addition, most of the data was collected in Maputo where the agencies' main office is based. An interesting complement to this research would be to present detailed case studies of a group of aid agencies or individual ones at the province level.

Chapter 4 uses Schelling (1973) diagrams to shed light on coordination failure. In this research I restrict to straight lines for the payoffs functions. However, the payoff configuration of the curve can take many forms. As referred by Schelling (1973: 425) “the curves even if monotonic can be concave or convex, S-shaped, flanged or tapered; and of course, they need to be monotonic”. A number of factors influence the shape of Schelling (1973) curves: the number of equilibrium, the role of information, the sizes of potential coalition and the importance of discipline or enforceable contract, the population size and so on. Again, this research attempts to provide a first step into the usefulness of game theory to explain coordination failure; further research might delve deeper on more robust classification schemes for payoff curves.

### 5.3 SUMMARY OF MAIN FINDINGS AND POLICY RECOMMENDATIONS

In this thesis I explore three determinants of aid effectiveness focusing essentially on the donor side: i) distribution of health aid in-country, ii) aid agencies’ decisions and relationships with the recipient country and iii) coordination between aid agencies. Each chapter had its own extended conclusion therefore only a summary of the main findings and a link with policy suggestions is presented here.

Failing to attribute a causal effect between health aid and health outcomes, Chapter 2 has more to it than just a call to increase or decrease aid flows. In summary, Chapter 2 provide us three main findings: i) the effect of health services’ utilization on child survival varies across provinces ii) that effect is higher in provinces with a number of children alive below average, iii) the insignificance of health aid might be justified by aid being directed to provinces where the impact of health services’ utilization on health outcomes is small.

These findings have huge policy implications. Recognizing the differential effect of health services’ utilization on health outcomes, this research suggests that aid should be targeted to the provinces where the effect of health services’ utilization is higher. I argue that “aid effectiveness cannot be achieved” by targeting aid to the neediest places or the preferred ones. It is not effective to have health services in Niassa, the neediest province if no one uses those services, if they have poor

quality or if accessibility is difficult. It is not effective if aid is targeted to Maputo, one of the preferred provinces, if the level of development is already stable, i.e., if health outcomes cannot be improved further. Further research is needed at the province-level in order to recognize their particularities and understand the reasons behind a different effect of utilization of health services across provinces.

Chapter 3 provides a systematic analysis on how aid negotiations are developed at a country level through different stages and how they culminate on actual outcomes on the ground. In this chapter, I show that donors and recipients respond tactically to each other's behaviour which has direct effects on how donors opt for different strategies for disbursing aid. However, more than assessing which type of channel of delivery or aid modality is better this paper aims to provide a comprehensive framework of the sequential disbursement decisions of aid agencies. Understanding in depth donors and recipients' motivation offers a more informed picture on the effectiveness of aid and can provide a solid ground for better policy implementation. It is advised that aid agencies should be more transparent about their identity and motivations and acknowledge their direct implication on the outcomes of aid, through their choice of specific channels of delivery. In particular, this chapter reveals that trust in donor-recipient relationships is under threat due to the existence of multiple channels of aid delivery that donors can opt for. At the moment, there are two critical substitutes of trust: the international financial crisis on the donor's side and the recipient's capacity. Together, they are making it easier for donors to abandon the principles advocated in the Paris Declaration and subsequent forums of aid effectiveness. Donors want to control their money and the tax-payer in the West is demanding quick results. It is strongly advised that the recipient country works on re-building trust. Donors, in turn, should ensure an open and honest communication with the recipient; otherwise, vertical funding will re-conquer its place on the top. In this chapter it is also recognized that donors' decision on the channel of delivery, more precisely who should spend their aid in country, is influenced by whether the recipients follow their preferences or not. Latter in this chapter it is shown that donors' strategic paths have strong implications on where aid is actually disbursed on the ground, i.e., to which locations and health priorities. Particularly relevant in this chapter is the differentiation between a



principal versus an agent's role on deciding where to disburse aid. As for policy recommendations: the public sector is recommended to promote increased ownership. Donors, in turn, should ensure that their preferences are better aligned with the government ones. To stimulate autonomous decision-making, international NGOs are proposed to become more financially independent from the donors. This would contribute to the debate on the "raison d'être" of NGOs as governmental or non-governmental organizations.

Chapter 4 reveals a lack of common understanding of coordination as a concept and what it entitles. It finds that donors' motivations to coordinate differ and explores the reasoning behind this. The findings from this paper disclose that some aid agencies do not have strong incentives to coordinate. This chapter alerts for the importance of a lead donor and/or government involvement to ensure that coordination is effectively implemented. From a practical point of view my results suggest that real and honest efforts to achieve coordination are needed. They include a clearer and more transparent understanding of coordination, a proper setting of responsibilities shared between agencies and the government and an accurate awareness of agencies' diverse identities. The lead donor, the U.S. should be more involved with the rest of the donor community. Donors should also provide incentives for NGOs to coordinate with each other.

To conclude, while focusing on the donor side in this thesis I abstract from exploring in depth the recipient's motivations. However *two people are needed for a marriage*. By no means have I suggested that the recipient country has a passive role on the effectiveness of aid. In fact I suggest the opposite. Some deep issues remain open to question: why is Mozambique not increasing its internal resources to health? Is it convenient to be an aid-dependent country? Why is no one really interested in ensuring that everyone is on board when it comes to information sharing? Is the government not willing to facilitate donors' coordination? Is it just about capacity issues and availability of funds?

*"I have never worked in a country that has taken me so much time to understand the systems and structures of the health sector. At the beginning I thought: something is wrong somewhere and is not me because I have my education degrees...it is not because I don't understand the sector. Slowly, slowly I came to understand that this country is the culture of secrecy and hiding. At the beginning I thought it was low capacity. But this is not about low capacity; this is about making a smoke screen...The more donors don't understand the more behind the small screen we can do whatever we want. Why is it that the information is not very easily available? Why there is no package for new incomers? I think we are naïf...I think we don't enough consider the political economy and the power structure in which we are working and this comes partly out of donor ignorance."* [BIL/3]

An interesting extension of this thesis would be to research the recipient's motivation to receive aid and link its behaviour with the aid dynamics explored in this thesis.

#### 5.4 A FINAL REFLECTION

This work suggests a number of policy recommendations stressing the importance of addressing aid agencies' behaviour and disbursement decisions. Throughout this thesis I stress out that is not enough to change policy, programmes or procedures. For aid to be effective aid agencies must be willing to change their behaviour and that should be visible to others. A strong and transparent commitment is the basis for moving forward. Rests the question: are aid agencies really willing to promote aid effectiveness?

Simultaneously, global aid dynamics are changing. It is known that "who has the money is in charge", but a new question is rising now: "who has the money?" Emerging donors, like Brazil or China, are stepping into the scene while traditional donors find their way to justify their existence. At the same time recipient countries like Mozambique, experience a climate of economic expansion which is projected to increase in the near future: "will they need aid?" Some suggest that *aid effectiveness* is already out of date; instead one should inquire: "why should we give aid at all?" [BIL/2]. Others argue for a new model that implies an entire redefinition of what aid should be. It might consist of an integrated approach that includes the private sector in aid while balancing with the role of the state in providing the services for their people.

These are pertinent questions which deserve careful reflection in the near future. However, no matter what *form* aid takes or *who* gives it, as far as it continues to exist it must be *effective*.

*"The difference between what we do and what we are capable of doing would suffice to solve most of the world's problems."*

-- Mahatma Gandhi

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## APPENDIX A: MOZAMBIQUE'S HISTORICAL CONTEXT AND ITS IMPACT ON HEALTH SYSTEM-RELATED DIMENSIONS

Dates and periods designation	Context dimensions	Health system-related dimensions (impact)
<b>1975 Independence</b>		
<b>1975-82</b> <b>Post-Independence ambitious recovery</b>	<p>Political context:</p> <ul style="list-style-type: none"> <li>- Marxism-Leninism line.</li> <li>- One party state.</li> </ul> <p>Economic context:</p> <ul style="list-style-type: none"> <li>- Central planning.</li> <li>- Nationalization of social sectors.</li> </ul>	<p>Health policy framework:</p> <ul style="list-style-type: none"> <li>- Nationalization of health services.</li> <li>- Primary Health Care (PHC) is adopted.</li> </ul> <p>Health expenditure and financing:</p> <ul style="list-style-type: none"> <li>- Health expenditure increases significantly.</li> </ul> <p>Health service delivery:</p> <ul style="list-style-type: none"> <li>- Coverage and outputs expand.</li> </ul>
<b>Civil War</b>  <b>1982-89</b> <b>Fragmentation</b>	<p>Political context:</p> <ul style="list-style-type: none"> <li>- Conflict: Escalation of the civil war and war alert.</li> </ul> <p>Economic context:</p> <ul style="list-style-type: none"> <li>- Economic crisis.</li> <li>- Structural adjustment (launched in 1987).</li> <li>- Transition to a market economy.</li> </ul> <p>Donor influence and dependence:</p> <ul style="list-style-type: none"> <li>- Aid agencies and NGOs pour into the country and take the lead.</li> <li>- Proliferation of emergency-oriented projects.</li> </ul> <p>Physical environment:</p> <ul style="list-style-type: none"> <li>- Floods and drought.</li> </ul>	<p>Health expenditure and financing:</p> <ul style="list-style-type: none"> <li>- Internal financing is reduced, capital shortage and international aid increases.</li> </ul> <p>External aid and coordination:</p> <ul style="list-style-type: none"> <li>- The National Health Services (NHS), struggling for survival, becomes largely dependent on external aid for its basic functioning.</li> </ul> <p>Health service delivery:</p> <ul style="list-style-type: none"> <li>- The NHS becomes a military target – health units are destroyed, health workers are murdered and kidnapped.</li> <li>- Access to basic services contracts.</li> </ul>
<b>1989-92</b> <b>Peace Negotiations</b>	<p>Political context:</p> <ul style="list-style-type: none"> <li>- Renounce of Marxism ideology (1989).</li> <li>- Transition to a multiparty democratic system (1990).</li> <li>- Peace Negotiations (1990-1992).</li> </ul>	<p>External aid and coordination:</p> <ul style="list-style-type: none"> <li>- MoH prepares plans for reconstruction with the help of IMF and the World Bank</li> </ul>
<b>1992 Peace Agreement</b>		
<b>1992-94</b> <b>Transitional Period</b>	<p>Political context:</p> <ul style="list-style-type: none"> <li>- Progressive unification of the country under the same administration.</li> <li>- UN mission of peace-building, such as demobilization, de-mining, support for elections, reintegration programs, etc.</li> </ul>	<p>Health service delivery:</p> <ul style="list-style-type: none"> <li>- The rehabilitation of the health network starts.</li> <li>- Health services return to previously closed areas.</li> <li>- Private practice is reintroduced.</li> </ul>
<b>Post - War period</b>  <b>1994-99</b> <b>Normalization</b>	<p>Political context:</p> <ul style="list-style-type: none"> <li>- First democratic elections (1994).</li> <li>- Second democratic elections (1999).</li> <li>- Decentralization is endorsed by the government and slowly introduced.</li> </ul> <p>Economic context:</p> <ul style="list-style-type: none"> <li>- Economic recovery under free-market principles.</li> <li>- Part of the Heavily Indebted Poor Countries (HIPC)</li> </ul>	<p>Health expenditure and financing:</p> <ul style="list-style-type: none"> <li>- Increase of resources to the health sector.</li> </ul> <p>Health policy framework:</p> <ul style="list-style-type: none"> <li>- The Health Sector Recovery Programme (HSRP) is launched.</li> <li>- PHC is emphasized.</li> </ul> <p>External aid and coordination:</p> <ul style="list-style-type: none"> <li>- Policy dialogue between donors and the MoH gains strength</li> <li>- Original tools to manage external resources are introduced (first steps towards developing common funds for health)</li> </ul> <p>Health service delivery:</p> <ul style="list-style-type: none"> <li>- Reconstruction and expansion of the NHS.</li> <li>- Skilled health workers (previously concentrated in secure areas) are redeployed.</li> <li>- More qualified and appropriately trained professionals gradually replace unskilled or low-level workers.</li> </ul>
<b>2000 to date</b> <b>Vulnerability</b>	<p>Physical environment:</p> <ul style="list-style-type: none"> <li>- Cyclones and severe floods devastate swathes of the country (2000).</li> <li>- Droughts (2002-2003).</li> <li>- HIV Epidemic.</li> <li>- Cyclone Favio (2007).</li> </ul> <p>Political context:</p> <ul style="list-style-type: none"> <li>- FRELIMO supremacy and dominance.</li> <li>- Corruption.</li> </ul> <p>Donor influence and dependence:</p> <ul style="list-style-type: none"> <li>- Mozambique is a highly dependent country.</li> </ul> <p>Socio-Economic context:</p> <ul style="list-style-type: none"> <li>- Generalized Poverty and Inequality.</li> </ul>	<p>Health policy framework:</p> <ul style="list-style-type: none"> <li>- PARPA I (2000-2005) assumes human capital and particular health as one major pillar for the government strategy.</li> <li>- PARPA II (2005-2009) continues to include health improvement as a major priority paying special attention to the poor.</li> </ul> <p>Health expenditure and financing:</p> <ul style="list-style-type: none"> <li>- Large inflow of relief resources to the health sector.</li> </ul> <p>External aid and coordination:</p> <ul style="list-style-type: none"> <li>- Kaya Code.</li> <li>- Sector Wide Approach to Health Sector (2000).</li> </ul> <p>Health service delivery:</p> <ul style="list-style-type: none"> <li>- Inequalities in service provision.</li> <li>- Huge inequalities in distribution of resources among provinces and levels of care.</li> <li>- Inequities in access to health care.</li> </ul>

*Note: squares highlight specific aid and health system's related dimensions.*

*Source: author's illustration modified and updated from Pavignani and Colombo (2001).*

## APPENDIX B: ODAMOZ DETAILS

**Table B.1 List of development partners for health registered in the ODAMOZ database, by type of aid agency**

Bilateral Development Agencies	Multilateral Development Agencies
Austria	
Belgium	World Bank
Canada	
Denmark	United Nations
Finland	United Nations Joint Programme on HIV/AIDS (UNAIDS)
Flandres	United Nations Population Fund (UNFPA)
France	United Nations Children's Fund (UNICEF)
Germany	World Health Organization (WHO)
Ireland	
Italy	
Japan	Regional Development Banks
Norway	African Development Bank (AFDB)
Netherlands	
Portugal	Global Health Partnerships
Spain	Global Fund Against AIDS, Tuberculosis & Malaria (GFATM)
Sweden	
Switzerland	
UK (DFID)	
USA (MCC)	
USAID	
European Commission (EC)	

**Table B.2 Exchange Rate to the US\$ used in ODAMOZ, based on OECD 2007**

Donr/ Agency	Local Currency	Exchange Rate to US\$
ADB	BUA	0,69
AUSTRIA	EUR	0,88
BELGIUM	EUR	0,88
CANADA	CAD	1,22
DENMARK	DKK	6,42
EC	EUR	0,88
FINLAND	EUR	0,88
FRANCE	EUR	0,88
GERMANY	EUR	0,88
IRELAND	EUR	0,88
ITALY	EUR	0,88
JAPAN	JPY	122,05
NETHERLANDS	EUR	0,88
NORWAY	NOK	6,63
PORTUGAL	EUR	0,88
SPAIN	EUR	0,88
SWEDEN	SEK	7,85
SWITZERLAND	CHF	1,31
UK	GBP	0,58
USA	US	1
WORLDBANK	US	1
FAO	US	1
UNDP	US	1
UNESCO	US	1
UNFPA	US	1
UNHABITAT	US	1
UNHCR	US	1
UNICEF	US	1
UNIDO	US	1
WFP	US	1
WHO	US	1

**Table B.3 Comparison between ODAMOZ and OECD-DAC databases, US\$ millions**

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>ODAMOZ</b>	140.381	123.691	220.867	267.944	283.873
<b>OECD-DAC</b>	122.166	129.466	155.907	174.582	200.620

*Note: Values represent disbursements. ODAMOZ values are in constant 2007 USD millions; OECD-DAC are in constant 2008 USD millions.*

*(Source: ODAMOZ and OECD (2009) databases)*

## APPENDIX C: DETAILED DESCRIPTION OF THE DATABASE

### **C.1 The Demographic and Health Survey (DHS) Database**

The database was downloaded from the DHS website (available at: [www.measuredhs.com](http://www.measuredhs.com)) after permission was obtained. The data from birth recodes was already in STATA format which facilitated the process of handling data. Because the household specific indicator - wealth quintiles - was not included in the births recodes' database 2003, I had to merge births recodes and household recodes databases. This was not necessary for the 2009 database as the information needed was gathered in the same database. The data was filtered to 2002 births and to births that occurred between 1998 and 2002 in order to construct the infant and child database, respectively. For the 2009 database women recode was used due to the inexistence of child birth recodes and the data was first filtered to women who had at least one child aged five or less.

#### ***C.1.a) Detailed description of variables' transformation***

All variables were labelled properly after consulting the *Description of the DHS Individual recode datafile* available in the *Guide to DHS statistics* from DHS (2008) since they appeared as code variables.

For the 2003 database a dummy variable reported whether the child was alive or not at the time of the interview (0-Not alive, 1-Alive). For 2009, a dummy variable was created for whether a women had all their children alive (independently of the number of children) or at least one child had died (0-At least one child died, 1-All children alive). The variable on education that was previously labelled as (0-No

education, 1-Primary, 2-Secondary, 3-Higher) was recoded in only three categories due to the low number women with higher education (0-No education, 1-Primary, 2-Secondary or Higher). Prenatal care and delivery assistance were split into seven different variables for doctor care, midwife/nurse, auxiliary midwife traditional birth attendant, friend and other, and were previously defined as (0-No: Some care, 1-Yes: No care). The variables were transformed to binary variables (0-No care, 1-Yes care) where care included only medical trained staff (doctor, nurse/midwife). Improved water source was originally defined as (10-Piped Water: inside the house, inside neighbour's house, public water; 20- Open Well Water: in own land, in neighbour's land, unprotected public well; 30-Covered Well/Borehole: protected public well; 40- Surface Water: river/Lake, 51- Rain Water, 96-Other). Following the World Bank definition a variable 'Access to Improved Water Source' was created where (0-No access, 1-Yes access) with Improved water source (=1) including Piped Water, Covered Water, Rainwater collection and Other. 'Access to Improve Sanitation' originally defined as (10-Flush Toilet: flush toilet, 20- Pit Toilet Latrine: latrine, no flush toilet; 30- No facility; 96- Other) was afterwards recoded as (0-No access, 1-Yes access) where Improved sanitation (=1) included flushed toilet and pit toilet latrine. Vaccination<sup>62</sup> was originally split into BCG1, Polio1, 2 and 3, DTP 1, 2 and 3 and Measles. These variables were combined together in just one variable to represent whether the child was fully immunized and coded as (0-Not fully immunized, 1-Fully immunized). Fully immunized (=1) included all eight different vaccines.

Variables that did not need transformation include the duration of breastfeeding in months and the mother's age in years. Nevertheless, a square-root and square transformation of both variables were included in the models where appropriate. Missing values were dropped since they were present in very few observations.

### ***C.2. The ODAMOZ database***

Information on health aid was accessed through the ODAMOZ website (available at: <http://www.odamoz.org.mz>). The search was specified for the health sector only. A full list of all projects was available with each project having the information of the region they were implemented in. The projects were initially

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<sup>62</sup> Vaccination is used as an alternative dependent variable for proxying health outcomes and for contrasting those results from those obtained using mortality as the main dependent variable.

divided by province. Because the database does not differentiate financially a project that is implemented in multiple provinces when more than one region was specified the data were divided equally between provinces mentioned. Some of project's information on regions was limited (e.g. project implemented in several provinces, project implemented in seven provinces) and was therefore discarded. A second step involved aggregating province health aid information by time period (1996-2002 and 2003-2008). The database contained information on *actual start date* and *actual end date* for each project. The *actual start date* of each project was chosen as the year of reference due to missing data on the *actual end date* of a significant number of projects. It is assumed that the project starts having effects from the date when it actually starts. The data was then averaged and divided by the population in order to obtain averaged per capita flows for each province and each time period of interest. A summary of the variables used in the research can be found in [Table C1](#).

**Table C.1 List of variables, operationalization of concepts and data sources, by level of analysis**

<b>Individual-Level</b>						
		<b>MAIN VARIABLE</b>	<b>PROXIES</b>	<b>LABEL DEFINITION</b>	<b>VARIABLE TYPE</b>	<b>SOURCE</b>
<b>Dependent variables</b>	Main health outcome	Infant Survival	Infant is alive on the date of the interview	0 No "Is not alive" 1 Yes "Is alive"	Qualitative-binary	DHS
		Child Survival	Child is alive on the date of the interview	0 No "Is not alive" 1 Yes "Is alive"	Qualitative-binary	DHS
			All children are alive, per women	0 No "At least one children is dead" 1 Yes "All children are alive"	Continuous	DHS
	Alternative health outcome	Vaccination	Child is fully immunized on the year of the interview	0 No "Not immunized" 1 Yes "Fully immunized" Received BCG, Polio (1,2&3), DTP(1,2&3) and Measles	Qualitative-binary	DHS
<b>Individual-level controls</b>	<b>Children characteristics</b>					
	Breastfeeding	Duration of breastfeeding (in months)	-	Continuous	DHS	
	Gender	Child's sex	0 "Female" 1 "Male"	Qualitative-binary	DHS	
	<b>Mother characteristics</b>					
	Mother age	Mother's age	Mother's age in years	Continuous	DHS	
	Education	Women's highest education level	1 "No education" 2 "Primary" 3 "Secondary and Higher"	Qualitative-Ordinal	DHS	
	<b>Household characteristics</b>					
	Wealth index	Quintile	1 Poorest 2 Poorer 3 Middle 4 Richer 5 Richest	Qualitative-Ordinal	DHS	
	Improved water source	Access to an improved water source <sup>63</sup>	0. No "Access to unimproved water source including vendors, tanker trucks, and unprotected wells and springs"  1 Yes "Access to improved water source such as hold connection, public standpipe, borehole, protected well or spring, and rainwater collection"	Qualitative-binary	DHS	

<sup>63</sup> Label definitions taken from the World Bank.

<b>Individual-Level (cont.)</b>				
	Improved sanitation	Access to improved sanitation facilities <sup>64</sup>	0 No "Access to unimproved water sanitation facilities." 1 Yes "Access to improved sanitation (Improved facilities range from simple but protected pit latrines to flush toilets with a sewerage connection)".	Qualitative -binary DHS
<b>Health care utilization</b>				
	Assistance	Women had prenatal assistance	0 No "No assistance" 1 Yes "Had assistance with a doctor, nurse or midwife"	Qualitative -binary DHS
		Women had assistance at delivery	0 No "No assistance" 1 Yes "Had assistance with a doctor, nurse or midwife"	Qualitative -binary DHS
<b>Province-level</b>				
	MAIN VARIABLE	LABEL DEFINITION		SOURCE
<b>Main explanatory variable</b>	Health aid	Average per capita health aid disbursements by province 1997-2002, US\$ Average per capita health aid disbursements by province, 2003-2008, US\$		ODAMOZ
<b>Province-level controls</b>	Number of health units	Number of health units in 2003 and 2009		INE
	Number of doctors	Number of doctors in 2004 and 2009		INE
		Number of habitants/number doctors		INE
	Health spending	Per capita health spending, US\$ 2003 and 2006		INE
	Population	Population in 2003 and 2007		INE

*Note: The Exchange rates to the US\$ used in ODAMOZ are the average exchange rates used by the OECD in 2007.*

<sup>64</sup> Label definitions taken from the World Bank.



## APPENDIX D: PAIRWISE CORRELATION

**Table D.1 Pairwise correlation coefficients for province-level variables**

<b>Variables</b>	<b>Av.Health aid per capita</b>	<b>LnDoctors /Inhabitants</b>	<b>Health units 03</b>	<b>Health spending 03</b>
<b>Av. Health aid capita 9702</b>	1.0000			
<b>LnDoctors/Inhabitants</b>	-0.7612 (0.0000)	1.0000		
<b>Health units</b>	-0.5823 (0.0000)	0.6664 (0.0000)	1.0000	
<b>Health spending 03</b>	0.3615 (0.0000)	-0.5811 (0.0000)	-0.5629 (0.0000)	1.0000

*Note: P-values in brackets.*

## APPENDIX E: SEMI-STRUCTURED INTERVIEW

### 1. Tell me about **Mozambique's (health) aid context in general:**

- a) What are the main health needs?
- b) How much progress has been made?
- c) How much regional variation is there?
- d) What is the role of your organization in this?

### 2. Tell me about your **organization in general:**

- a) What it does?
- b) What are the primary areas of action?
- c) What type of aid is given? (budget support, project aid, etc.)
- d) How does the entire aid process work, from the donor to the beneficiary? (e.g., log-frame)

### 3. Tell me about your **organization's decisions for disbursing aid:**

- a) What are the main determinants for disbursing aid? (e.g., donor considerations, budgets, needs of the population, etc.). Why? Which one would you consider the main one?
- b) Does the disbursement depend on other factors? (e.g., experience + networks in a given area, confidence in local capacity in a given area, etc.)
- c) How are the context's needs (province, type of health priority) assessed before deciding where and when to disburse aid?
- d) What is the degree of flexibility and autonomy of the field site (in Mozambique) versus the office site (outside Mozambique)?
- e) How does budget allocation vary with budget cycles?

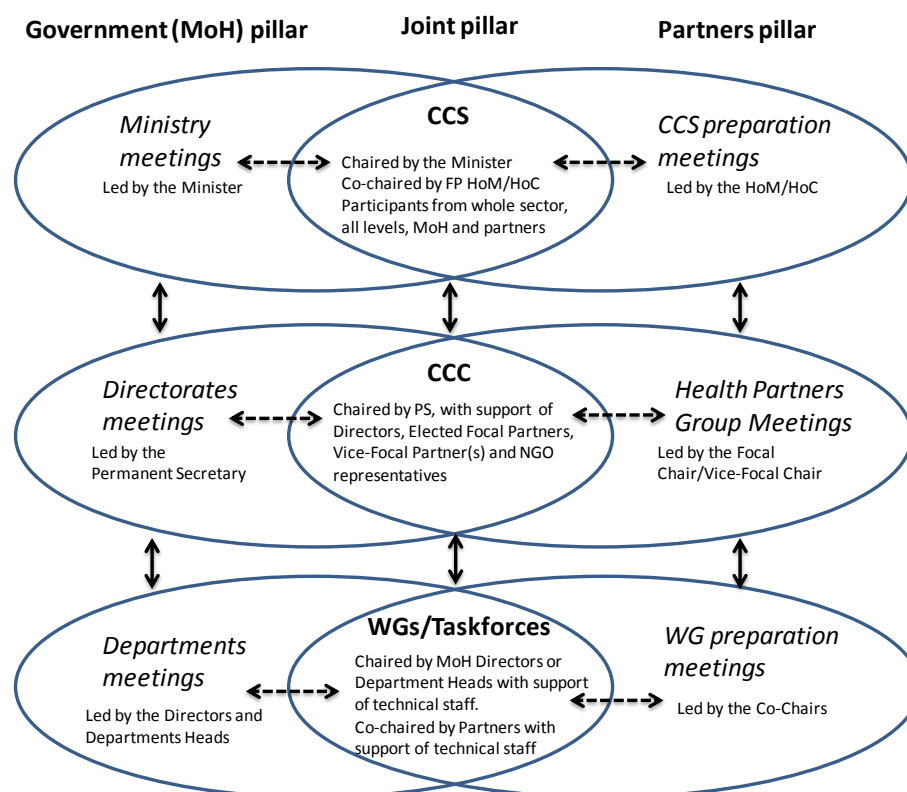
### 4. Tell me about the **coordination** with other aid agencies:

- a) What are the mechanisms of coordination in place in Mozambique's health sector?
- b) What do you think about the implementation and effectiveness of coordination?
- c) How much are you involved in the coordination structures? What is your motivation to coordinate?
- d) How is the relationship between your organization and the government and the MoH? How is the SWAP reflected in practice by your organization?
- e) Do you take into account other health projects being developed in the same area (geographical and health-related)?

### 5. Tell me about the relationship between **disbursement and impact:**

- a) Do you think the decision about where to disburse aid has a major impact on actual outcomes on the ground? And why?
- b) Does your organization perform an impact/monitoring/evaluation analysis of different projects? And to what extent?
- c) What are the major barriers for a project/program to have the intended impact?
- d) Which ways would you suggest for increasing the effectiveness of health aid?

## APPENDIX F: COORDINATION IN MOZAMBIQUE'S HEALTH SECTOR



**Figure F.1 Overview of the formal coordination mechanisms in Mozambique's health sector: the Health SWAp structure.**

*Note: The Health SWAp is made of three pillars and three levels. The three pillars are: 1) the Government (MoH) led at the top by the Minister at the middle by the Permanent Secretary (PS) and at the lower level by the Directors and Departments Heads; 2) the Partners pillar is led by the Head of Mission (HoM) and Head of Corporation (HoC) at the higher level, by the Focal Partner (FP) and Vice Focal (VF) at the middle level and by the Co-Chairs at the technical level; 3) the Joint pillar where the two pillars intersect represents the joint group/meetings which are led by the Minister. The three levels are: 1) the CCS that is the highest body within SWAp and is when MoH and partners join together to consider strategic issues, centred around the Annual Joint Review (ACA) meetings and the endorsement of the annual Sector Economic and Social Plan (PES). These are bi-annual meetings chaired by the minister; 2) the CCC chaired by the PS is when the MoH and partners interact on a monthly basis to deal with planning and operational issues, providing a good opportunity for a small number of representatives to deal with some critical issues; 3) the WGS/Taskforces is when the MoH and partners interact on a technical and operational level centred around formal and ad hoc WGs interaction, chaired by MoH staff and co-chaired by partners. These joint meetings provide an opportunity for the MoH and partners to jointly review or oversee specific areas of health policy when a more in-depth analysis is required prior to their adoption by the broader SWAp forum (HPCF, 2012).*