

MODELLING PRSP II & POVERTY REDUCTION IN MOZAMBIQUE LOCAL DEVELOPMENT:

**Econometric Analysis of factors determining Millennium
Development Goals by 2015**

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Abstract

Persistent rural poverty is one of the most stubborn social problems facing LDCs. It is difficult to estimate poverty accurately because the concept of poverty is not easy to define and even once it is defined it is not easy to measure in a way that is consistent with its definition.

This paper outlines the regression analysis addressed to determine variables and factors influencing poverty alleviation in Mozambique and estimate their magnitude. The aim of this paper is to support the careful interpretation of poverty estimates and to emphasise the need for policy makers to account for poverty measurement in their work.

The analysis shows that aid support has great contribution in poverty reduction. Mozambique to achieve the MDGs has to grow at least at the level of 8% per year (meaning 14% by 2015), while the budget allocation has to increase around 10% per year to satisfy internal demands. Capacity building is a critical variable at sub-national level. The expected budget allocation is around \$105.000 million by 2015 (PRSP II projections).

In terms of budget (external resources), we found that the level of support should increase at least at the level of 5% per year and Decentralised Aid Support (DAS) could improve the local capacity and address the local demands and needs. The UNCDF Local Development Fund (LDF) and UNDP local investment in capacity building are critical examples in Mozambique. UNDP/UNCDF evidence shows that key lessons were generated from experiences with working at both the upstream and downstream levels, aiming to effectively contribute to achieve the MDGs.

The foremost conclusion is that investment in Local Development is a critical feature to achieve MDGs and decentralization could be vehicle for that purpose. Good Governance is one critical pre-condition.

Acknowledgments

This paper is developed as framework to look at the critical challenges to alleviate the poverty and way forward to achieve the MDGs by 2015.

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ACRONYMS

CBO	Community Based Organization
CSO	Civil Society Organizations
DAS	Decentralised Aid Support
DBS	Direct Budget Support
DDP	District Development Plan (PDD)
DWG	Decentralization Working Group
ETP/D	Provincial/District Technical Team (Planning)
GIS	Geographic Information System
GoM	Government of Mozambique
LDCs	Least Developed Countries
LDP	Local Development Programmes
LOLE	Law on Local Organs of State (Law 8/2003)
MAE	Ministry of State Administration
M & E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MPD	Ministry of Planning and Development
NGOs	Non-Government Organizations
OLS	Ordinary Least Squares
PPFD	Decentralized Planning and Financing Programme
PARPA	Action Plan for the Reduction of Absolute Poverty (PRSP)
PES	Social and Economic Plan (Plano Económico e Social)
UN	United Nations
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme

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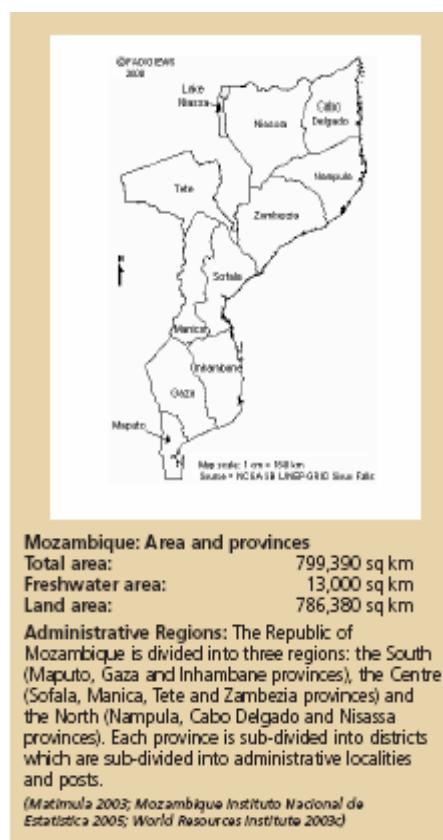
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1 INTRODUCTION

Transferring capacity and resources to the poor is the most direct and immediate way to reduce poverty. Today, the economic and social implications of poverty are widely discussed themes by researchers and policy makers. In fact, poverty still remains a problem in many developing countries. Researches on poverty worldwide (Anil et al, 2003) recognizes and makes clear the close relationship between decentralization, poverty and local development. The challenge in Mozambique is to reduce the incidence of the poverty by 50% (meaning 27% by 2015), thus there is a need to understand the variables which influence poverty and the role to be played by the government and by development partners. This paper is devoted to the problem of modelling the variables influencing poverty aimed to achieve the MDGs by 2015.

The focus of the present paper is on modelling poverty reduction looking at the influence of factors determining the MDGs, using econometric specification. Budget support (Aid) and allocation (local resources) are considered as critical variables. The model specification of poverty dynamics raises issues of interest to econometricians, and the estimates from such models provide useful information for policy makers and their advisers. The paper complements other related reports by presenting an overview of issues associated with poverty modelling (Anil & Goetz, 2003; Lancaster, 1990; Jenkins, (2000) and the way forward. It presents and discuss some statistics devoted to "explain" poverty and empirical relationships with other variables as well as characteristics derived from PARPA II (PRSP) data.

Map 1. Mozambique provinces (FAO GIEWS 2000)²



The paper as a resource for researchers, gives a general introduction of poverty analysis. It also aims to provide greater background for people interested in the quantitative results in the poverty reports produced. On other hand, it aims to contribute with analytical methods to and provide findings related with the variables determining the poverty in Mozambique. In many studies and for many researchers the most commonly-estimated models have been regression models of poverty. Rarer have been models fitting a stochastic time-series structure to poverty itself linking with national MDGs, from which the implications for poverty have been derived with a 'predictive capacities' models.

The broad trends in poverty levels measured show that the number of poor persons was about 54 per cent of the population (IAF, 2004). Estimating the regression, we found that poverty is influenced and is highly correlated with budget allocation and good governance (specifically local governance).

In the present paper we also explain poverty dynamics on the basis of an econometric model, which explicitly recognizes the role played by demographic factors, political stability, bilateral aid support (budget support) and multilateral contribution (e.g. UNDP/UNCDF).

² "Connecting poverty and ecosystem services" - A series of seven country scoping studies: Focus on Mozambique (2005). Published for the United Nations Environment Programme.

1.1 DECENTRALIZATION AND POVERTY ALLISSION

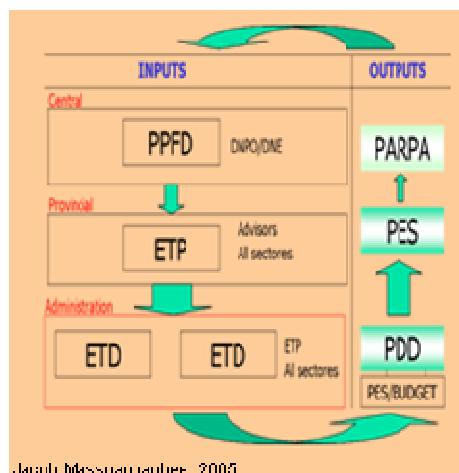
Poverty reduction strategies currently are seen as associated with localization of development initiatives, and decentralization is being used as vehicles to promote local development, exactly where the incidence of poverty is high. Decentralization is a complex process that requires human and institutional arrangements to implement. It is recognised that it should play critical role to achieve MDGs, because of its nature to work at local level. This document will provide the necessary coherence and continuity of this long process as well as describe the tasks required to ensure that the vision of decentralization becomes a reality and generates tangible benefits for local government linking the local communities.

The Local Governance process in Mozambique dates back to 1978. It began as a part of the process of dismantling the colonial state apparatus, which began after National Independence in 1975, but in fact, *decentralization process* dates with the adoption of the 1990 Constitution when the extinction of Provincial Assemblies was announced. Since 1998, with introduction of Decentralized Planning and Financing Programme (PPFD) local governments³ have had the authority to plan, decide and “execute” expenditures for maintenance of local institutions under their authority. Some critical assumptions are being considered:

a) Decentralised Planning and Financing System

The positive impact of UNCDF/UNDP supporting PPFD has won extensive support of the Government and its programme content and methodology is now incorporated in the Government’s policy (National Planning System).

Figure 1: Budget cycle from PPFD perspective



The Law 8/2008 (LOLE) gives the district power to plan, budget and implement local initiatives (district as budgetary unit). The UNCDF/UNDP experience in Mozambique promoted innovative exercise in terms of planning and financing system at the district level. UNCDF/UNDP has replicated the model of district planning, strengthening local government, which was piloted in Nampula, to Cabo Delgado (Gaza –Preparatory assistance, 2006), and the World Bank has replicated it in four other provinces (Manica, Sofala, Tete and Zambézia).

The Ministry of Planning and Development has adopted it as a nation-wide model and it is now the basis for national strategy on local Planning & Budgeting and valuable input

for the Decentralization Policy, due its inclusiveness and downstream approach. Its model for training district level officials is being replicated rapidly throughout the all country.

The recent decision of the government that the district must be the unit on which actions to combat poverty are centered emerged as the need to reinforce human and institutional capacity at local level. The mainstreaming of PPFD countrywide will be a determinate factor for the decentralization process and Local Development, aimed to reinforce territorial decentralization (*central, province and districts*) and sectoral deconcentration (*ministerial line*).

³ In Mozambique system Local Governments refers to Local Organs of State. The Governors and district administrators are appointed by the President and Governor, respectively. The municipalities (33 actually) are elected bodies.

b) Local Governance effectiveness

Decentralisation is an important cross-cutting thematic area with major implications for poverty reduction and the achievement of the Millennium Development Goals (MDGs). Decentralisation enters into countries' poverty alleviation strategies in a number of ways. On the basis of the "subsidiarity" principle, sub-national governments are often given the responsibility for managing many "pro-poor" priority sectors, including primary and secondary education, primary health care, agricultural extension, water and sanitation services, and local roads and public infrastructure (UNDP, 2005).

On the other hand, effective local development means sub-national governments are generally in a better position than the central government to identify local needs (including those of the poor) and to deliver public services accordingly⁴. Gabor Soos (2001)⁵ refers that consensus on the measurement of local government performance, in particular, is conspicuously absent in the literature. Performance has been identified with several concepts and their combinations. Effectiveness, efficiency, productivity, economy, appropriateness and accessibility of services, smoothness of the decision-making process, service quality, client satisfaction or satisfaction of the strategic constituency, responsiveness, and respect for political freedoms have all been used in defining performance.

Performance definitions ultimately depend on which role of the local government the researcher chooses to emphasize. To reach a set of definitions covering local government performance, one should consider the expectations local governments are designed to fulfil. Four duties seem to be relevant. All of them imply a basis against which performance can be assessed:

- Local governments are expected to set community goals and formulate inclusive policies. As decision-makers, the basis of evaluation is the congruence between policy requirements (e.g. budgeting) and actual policy-making (e.g. budget promptness).
- Local governments are expected to effectively implement their decisions. As administrative units, the basis of comparison is the consistency between what local governments decide (policy objectives) and what they can carry out (outputs).
- Local governments are expected to work for their communities (service delivery). As responsive organizations, their policy-making is compared to articulated societal demands.
- Local governments are expected to be democratic. As democratic organizations, their activities are assessed on the basis of the realization of certain basic values.

Local governments are not simply decision-makers but also *democratic* decision makers. Thus, local governments must meet certain standards of democracy. This measurement of democratic performance focuses on the degree of the incorporation of democratic norms in the operation of the local government (Gabor Soos, 2001).

A democratic local government must offer local citizens the opportunity to understand its operation and participate in making decisions on local public issues. People might not accept this offer for whatever reason (e.g., because of a non-participatory political culture). This does not influence the level of performance: local government activities are measured here, not their outcomes (Gabor Soos, 2001).

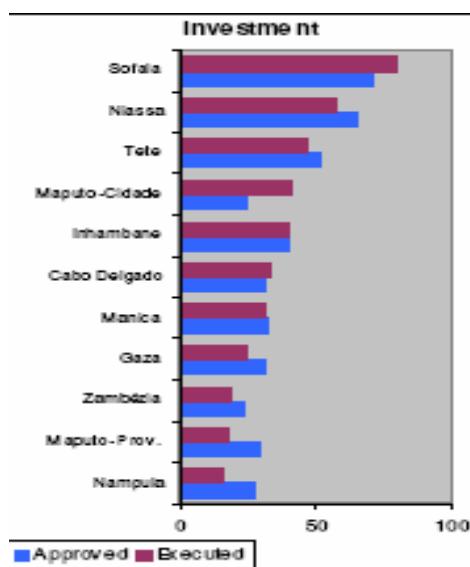
⁴ See UNDP Primer: Fiscal Decentralisation and Poverty Reduction. August 2005.

⁵ See Indicators of local democratic governance project: concepts and hypotheses

c) Decentralising aid Support and Allocation

Donor support is still a determinate input in Mozambique. With the advent of district planning unit, local communities have the choice of plan and implement locally. The challenge ahead is to transfer functions from central ministries to districts and to have the districts capable to assume deconcentrated functions from central and provincial level, including delivery and budget execution.

Figure 2 Proportion on Investment per province⁶:



As noted by Hodges and Tibana (2004) donors are heterogeneous in their motives, strategies, rules and procedures. Fiduciary risk, restrictive internal rules and/or a desire to “show the flag” have prevented some donors from evolving from traditional project aid to common funds and DBS. On the other hand, many donors have been influenced by the new thinking on aid effectiveness, which has emphasized the importance of partnership, based on government commitment and leadership, and the use of government systems and procedures, supported by necessary reforms and capacity building.

Nevertheless, it is recognised that budget support can have advantages, first because it can increase ownership by focusing on locally identified priorities. Secondly, poverty-reducing spending can be reduced by the better co-ordination

of donors’ resources that emerges from priorities set at the level of the country concerned. This also helps reduce the duplication of projects that emerges when many foreign donors fund individual projects directly. Finally, budget support enables Governments to get a comprehensive picture of all aid flows. In the case of projects, donors may be unable to provide the necessary financial information (DAC, 2001). The critical role of DBS is related to institutional and human capacity at sub-national level.

In Uganda⁷, There is a growing recognition by the donor community that at the local government level in Uganda there is a wealth of potential in terms of resources, institutional abilities and organisational talent. In recent years this has caused a number of them to decentralise their aid programmes.

Mozambique experiences shows that with decentralization programme (PPFD), via Local Development Fund (LDF), UNCDF/UNDP is supporting local infrastructures investment as block grant. In supporting physical and social infrastructure activities there is an immediate improvement of human welfare, those which have maximum (positive) implications for local capacity. With Decentralised budget support local governments have opportunity to make the choice and prioritise local needs and will give them a chance to acquire knowledge and skills for handling the planning of their future development programmes. Based on the UNCDF/UNDP experience, we found that the

⁶ Hodges and Tibana (2004). Expenditure per capita by provinces, average 2002-2003 (MT '000; excluding all external resources except general budget support).

⁷ Decentralising Aid and its Management in Uganda: Lessons for Capacity-building at the Local Level. www.ecdpm.org/Web_ECDPM/Web/Content/FileStruc.nsf

success of decentralised budget support depends greatly on the ability and capacity of local governments and citizens, to identify the positive elements of local institutions capacity building and development needs.

In Uganda⁸, the common argument that local government institutions have neither the ability nor the human resources to manage donor-funded programmes is based on faulty reasoning. It has been established that this kind of reasoning may be due to a selfish wish of some central government bureaucrats to hold on to resources; it might also be the result of inexperience on the part of donor agencies in dealing with people at the local government level.

Decentralised Aid Support (DAS) implies: (i) Provide technical expertise (training needs) and physical requirements for capacity-improvement for local authorities; and (ii) Support and engagement on participatory planning initiatives with funds to supplement local resources and ensure that the selected local priorities can, as far as possible, be implemented. In that sense, decentralised aid Support will mean devolution of powers and responsibilities for local administration, planning and financing, implementation, monitoring and evaluation of Local Development Programmes (LDPs).

d) Development of Local Capacity

Local administrations and institutions possess numerous advantages and opportunities for building a sustainable local capacity. With decentralization, much of the responsibilities for service delivery are transferred to local governments. While several local governments are able to maintain the “quality” of services deconcentrated to them, it is unable to improve beyond its present capacity and has limited success in getting the communities involved in addressing local needs and demands.

The size of the administrative staff is an important feature of local government. Both the bureaucratic modes of decision-making and the issues of complexity are well-indicated by the size of the local bureaucracy. Thus, the strength of civil society is measured by active participation, the number of NGOs and other organization in development. This is double-checked by the self-reported civic participation in the citizen survey. Civic groups are to give shape to various efforts and initiatives of citizens that address different public issues.

Capacity development reforms including training which the District Administration embarked establishes a healthy working relationship between the political leadership and the civil servants at the district level. Three cases indicate best practice in this field:

- Participatory planning and district financing approach (human and institutional capacity)
- Programme approach involving multi-sectoral interventions (institutional capacity)
- Project activities (community capacity)

⁸ Decentralising Aid and its Management in Uganda: Lessons for Capacity-building at the Local Level. www.ecdpm.org/Web_ECDPM/Web/Content/FileStruc.nsf

1.2 DEVELOPING AN ENVIRONMENT CONDUCIVE TO LOCAL DEVELOPMENT

With the increasing recognition of the relevance of national capacity, the United Nations General Assembly Resolution 44/211⁹ emphasized that its agencies should focus on capacity building in developing countries and directed them to improve their operational activities, including the coordination of various efforts. Slowly, the programmatic efforts of major multilateral and bilateral donor agencies have begun to incorporate capacity building into their technical assistance/ technical cooperation efforts.

The principle of local development includes setting the following strategic objectives of technical cooperation: (a) long-term capacity building rather than short-term performance improvements, (b) stressing the importance of long-term institution building (especially in the area of policy analysis and development management), (c) advancing greater use of local expertise and existing structures, and (d) encouraging broadened participation, including intended beneficiaries and stakeholders, in all phases. The latter is particularly important because it is felt that participatory development strengthens and empowers citizens, groups, and organizations, in addition to improving the effectiveness and efficiency of development programs and eventually linking to good governance.

Mozambique had been one of the most centralized economies in Africa until the end of 1980's. The decade of 1990's is seen as determinant on decentralization process. Nevertheless, literature recognises that there is no guarantee that greater decentralization would result in greater democracy and more local development. There are hopes that the process would be more inclusive and participatory, and that it would take into account the needs of the poor, disadvantaged and marginalized groups. Given the above points made the conclusion is that the results of decentralization depend on the commitment and capacity of the local government to address local demands and needs. The arguments are grouped into two: national effects & local effects.

With regard to the *national effects*, on one hand, the argument is that there could be a conflict between decentralization and the macroeconomic objectives whereby local authorities take a much narrower view and perspective. Some authors observed the reluctance of decentralization in developing countries mainly because of weak systems, poor information, unlimited needs, weak capacity and administrative diseconomies. Because of these reasons, decentralized budget responsibilities would lead to loss of expenditure control.

On other hand *local effects*, have been launched in the majority of developing nations, but these rarely lay the foundations necessary to reach efficiency and equity benefits. Those foundations include the transfer of important discretionary powers to downwardly accountable actors, capacity building and technical assistance that represent and respond to local challenges. All efforts are being taken to help us better understand and enhance our organisation's efficiency at the provincial and district level.

There is some analysis of what constitutes an effective decentralization process. The PPFD (Decentralised Planning and Financing Programme) funded by the UNDP/UNCDF and other partners in Nampula and Cabo Delgado are a critical example. The World Bank covering 13 districts replicated the model in Sofala, Manica, and Tete and Zambézia provinces. Other experiences on decentralization include the provinces of Niassa and Inhambane, funded by Sweden and Ireland and GTZ and also reference in Mozambique.

⁹ See <http://www.mindfully.org/Sustainability/Capacity-Development.htm>

Governments, donors, NGOs, and theorists typically defend decentralization reforms on grounds of improved efficiency, equity, and responsiveness of bureaucracies to citizen demands. Most decentralization reforms are either flawed in their design, or encounter strong resistance from a variety of actors that erodes their effectiveness. Reviewing a comparative methods there are some striking findings to be considered:

1. One finding is that effective district planning uses participatory or inclusive process to underpin its business processes. The indicator to watch is the number of citizens participating and the Consultive panels.
2. Another finding is that there seem to be a correlation between lack of capacity and environment conducive to fraudulent practices. The experience of decentralization as it has occurred until now suggests that additional monitoring capacity and regulatory agencies will be needed to convert the potentially higher protection capacity of local governments. Results-oriented development action plans require sound performance monitoring, realistic targets for performance assessment indicators, and timely provision of data.
3. Capacity develop in government and CSOs (including capacity for poverty monitoring and evaluation, analysis, statistics, program/project design and implementation, and legislation) at the national and local levels, is critical to ensure that technical assistance contributes to strengthening local capacity.
4. Donors and partners together urgently need to address the issue of partner countries' weak institutional and human capacity, including in monitoring and evaluation (M&E) systems, statistics, and managing for results at the local level.

Experiences show that decentralization reforms are being attenuated via insufficient power transfers and inappropriate local institutional arrangements. The choices of powers and of institutional arrangements form the basis of central government actions that compromise the process of decentralization in practice. There may be some grain of truth in arguments about lack of local capacity or absence of technical expertise to govern. Given current political conditions demanding, further decentralization policies should continue to emphasize and sustaining the provision of local services:

- (1) Promoting equitable development by involving widespread participation in planning activities,
- (2) Improving the district by providing more local revenue responsibilities
- (3) Providing more expenditure responsibilities to local governments in the provision of public services
- (4) Improving the inter-provincial and inter-district harmonization by increasing alignment on investment block grant,
- (5) Strengthening local capacity in human resources and institutions; and
- (6) Promoting private participation in provision of services.

1.3 POVERTY MEASUREMENT

Definitions of poverty vary, firstly, over the question of how to measure different *standards of living*¹⁰. Anil & Goetz (2003) argued that the traditional conceptualization and measurement of poverty by economists has focused mainly on income and employment growth. Economists have argued since the 1950s that poorer regions should grow more rapidly than richer regions because diminishing returns to physical capital would cause more-advanced regions to grow more slowly than less advanced ones.

Table 1: Poverty Incidence in Mozambique

Province	Percentage of people in poverty
Cabo Delgado	57.40%
Gaza	64.66%
Inhambane	82.60%
Manica	62.60%
Maputo	65.60%
Nampula	68.92%
Niassa	70.64%
Sofala	87.92%
Tete	82.27%
Zambezia	68.10%

The concept of poverty is vague and consequently the best definition of poverty is a matter of considerable academic dispute. Perhaps the only point of general agreement is that people who live in poverty must live in a state of deprivation, a state in which their standard of living falls below some minimum acceptable standard.

Within poverty research, disposable income is the most commonly used measure of a person's standard of living but this is not without limitations (Greenwell et al, 2001). The preceding three issues in poverty measurement all relate to how people in different circumstances are to be compared. The issue of *poverty line* derived from measurements has been controversial

A poverty measure that takes account of the depth of poverty is the *poverty gap*, which estimates the gap between actual incomes and the poverty line for all those who are in poverty. The poverty gap can also be used to measure the total cost of raising all of the poor to the poverty line but no further.

In the literature, alternative measures exist for the definition of the concept of poverty. The two main approaches are: i) the *traditional approach* that dichotomises the population into *poor* and *non poor* people by means of the so called *poverty line*; ii) the *totally fuzzy and relative approach* that allows us to analyse poverty in a multidimensional perspective avowing the use of an arbitrary threshold value. Other methods of analysing poverty dynamics are reviewed in Jenkins (2000)¹¹. In the context of the present study poverty determinants are regressed and computed, to determine factors affecting poverty reduction.

As Anil and Goetz (2003) argue, sociological research presents two broad sets of theories to explain poverty: one stresses culture, the other structural or external causes. Culture-based explanations are centered on the argument that people are poor for reasons of their own making. Structural causes are those that are beyond the control of the individuals living in poverty.

Finally, once the poverty line has been developed and people can be identified as poor or not poor, there remains considerable debate about how best to represent the *extent* of poverty. For example, poverty rates are simple to understand but fail to capture the depth of poverty. The measurement of poverty while also problematic can help to provide a better picture of the extent of poverty and using econometric models can be predicted.

¹⁰ Greenwell, Lloyd and Harding (2001)

¹¹ Jenkins, S (2000) Modelling Household Income Dynamics. Journal of Population Economics 13 (4).

1.4 CONCEPTUAL FRAMEWORK

It is argued in this poverty modelling that poverty is, in part, determined by variables analyzed, but can be influenced by other factors not considered in the model. The critical factors, related with local development, planning and budgeting are analyzed in this framework. UNCDF and UNDP's role as development actors in Mozambique are being taken in consideration looking at the influence of downstream and local development practices and interventions, as well as upstream interventions.

Duncan (1999) points out that poverty persists when communities lack civic participation and is rigidly divided by class and race. The idea that institutions matter for economic development has received attention in the economics literature as well. Abramovitz and David (1996) maintain that the attributes and qualities of people and organizations which originate from social and political institutions influence the responses of people to economic prospects¹².

The econometric model is a form of endogenous switching regression, and is fitted using simulated maximum likelihood methods. The specification of models of poverty dynamics raises issues of interest to econometricians, and the estimates from such models provide useful information for policy makers and their advisers.

Two types of model have mainly been used to describe the poverty dynamics of individuals (Jenkins, 2000). The most commonly-estimated models have been *regression models* of poverty exit rates and re-entry rates. Rarer have been models fitting a *stochastic time-series structure* to income itself, from which the implications for poverty have been derived.

The parameters calculated using regression methodology more adequately capture impact changes of the poverty indices, and conceptually are more consistent with the idea of increase livelihood status investing more in local development. It is hypothesised that good governance and budget allocation is being channelled to provinces and districts, the level of poverty tends to reduce, considering availability, accessibility and utility of service delivered, social and economic infrastructures and development actors capabilities, including local government (local organs of state).

An inverse relationship is expected when the outcome of aid effectiveness is significant, meaning that budget support in not being utilised for development purposes or the local organs of state do not have capacity to deliver and respond the local demands and needs.

The regression methods are estimated using the following steps below:

- i) *Determine the OLS*, as a statistical method in the context of a traditional approach, refers to the relationship of variables and its characteristics.
- ii) *Estimation of the parameters*: The second step is the estimation of the parameters determining poverty
- iii) *Prediction or simulation*: The prediction is carried over to analyse the effect of variables influencing Millennium Development Goals (MDGs) achievement by 2015
- iv) *Discussion*: Discussion is undertaken to analyse some critical factors and challenges in Mozambique

¹² See Anil & Goetz (2003)

2 ANALYTICAL FRAMEWORK

Anil & Goetz (2003) formulate a general conceptual model where family poverty rate (**PO**), is a vector of economic factors affecting poverty **EF**, individual-level factors **IF**, social **SF**, and “political” factors **PF**. We estimate the above model alternatively using levels of and rates of change in family poverty rates as dependent variables. For a given time period poverty equation is given by:

$$POV = f(EF, IF, SF, PF).$$

where *POV* denotes an $nx1$ vector of the dependent variable, *X* represents an nxk matrix containing the determinants of poverty (EF, SF, PF, IF), and *W* is a spatial weights as explained above. Scalar ρ is a spatial autoregressive parameter and β denotes the k parameters to be estimated for the explanatory variables. The other specification is the spatial error model (Anil & Goetz, 2003). The econometric model is summarised as:

$$\begin{aligned} POV &= \rho W(POV) + X\beta + \varepsilon \\ \varepsilon &\sim N(0, \sigma^2 I_n), \end{aligned}$$

It is considered poverty as a vector of multiple regression equation, which is used to account for (predict) the variance in an interval dependent, based on linear combinations of interval, dichotomous, and dummy independent variables. Multiple regression can establish that a set of independent variables explains a proportion of the variance in a dependent variable at a significant level (significance test of R^2), and can establish the relative predictive importance of the independent variables (comparing beta weights). Power terms can be added as independent variables to explore curvilinear effects.

Cross-product terms can be added as independent variables to explore interaction effects. One can test the significance of difference of two R^2 's to determine if adding an independent variable to the model helps significantly. Using hierarchical regression, one can see how variance in the dependent must can be explained by one or a set of new independent variables, over and above that explained by an earlier set. Of course, the estimates (β coefficients and constant) can be used to construct a prediction equation and generate predicted scores on a variable for further analysis.

Multiple regression shares all the assumptions of correlation: linearity of relationships, the same level of relationship throughout the range of the independent variable ("homoscedasticity"), interval or near-interval data, and data whose range is not truncated. In addition, it is important that the model being tested is correctly specified.

The exclusion of important causal variables or the inclusion of extraneous variables can change markedly the beta weights and hence the interpretation of the importance of the independent variables.

2.1 VARIABLES OF THE MODEL

To be precise, it is assumed that the determinant poverty reduction factor is economic growth, which influence other factors estimated. There is correlation between economic growth and other variables not considered in the model. Dummy variables are considered¹³: Qualitative data were selected from governance trends and expectation.

Table 2: *Description of Qualitative Variables*

Variables	Description
• Good governance:	<p>yes = 1 and Opposite = 0, assuming that by 2010, will be achieved high level of democratization, including autonomy and local empowerment.</p> <p>The influence of good governance is defined as a representative & inclusive system established to strengthen the process of government, ensuring accountability, transparency, advocacy, and participatory decision make and citizen groups directly interact with government. Good governance can thus be seen as the achievement of greater efficiency, representation, accountability, transparency.</p>
• Capacity Building:	<p>yes = 1 and Opposite = 0, assuming that the influence of capacity building to delivery services at the local level</p> <p>The ability of institutions to satisfy the groups demands are considered as critical in order to achieve faster economic development and improved standards of living.</p>
• Budget Support (aid):	<p>yes = 1 and Opposite = 0, assuming that all development are being taken by the government. Budget support is channelled via central government.</p> <p>It is assumed that significant proportion of the budget is being supported by international organizations/partners. It is hypothesised that the level of economic growth has great influence on poverty reduction. While it increases the aid support decreases, meaning that aid support is correlated with economic growth.</p> <p>Its hypothesised donor' funds in government systems and sector-wide approaches. This should be used in combination with set performance targets on the part of budget holders</p>

¹³ **Dummy variables** are a way of adding the values of a nominal or ordinal variable to a regression equation. (ex., Yes = 1 if hypotheses is accepted and 0 = otherwise 0).

The quantitative data analysis were selected from PRSP budget allocations (2006- 2009). All indicative data from 2010 – 2015 was predicted by annual expected increase rate $(1+i)^n$. It is hypothesised that the level of population (demographic trends) will increase proportionally in average at 2.7% per year.

Table 3: Description of Quantitative Variables

Variables	Description
• Economic growth	We consider Economic growth as Economic growth ¹⁴ is the increase in the value of goods and services produced by an economy. It is conventionally measured as the percent rate of increase in real gross domestic product, or <i>GDP</i> . Growth is usually calculated in <i>real</i> terms, i.e. inflation-adjusted terms, in order to net out the effect of inflation on the price of the goods and services produced. In economics, "economic growth" or "economic growth theory" typically refers to growth of potential output, i.e., production at "full employment," rather than growth of aggregate demand
• State Budget Allocation (Internal resources)	The state budget optimizes the required level of investment to maximize their expected utility stream. The composition of the state budget is the local revenues and other contribution. Budget generally refers to a list of all planned expenses and revenues. A budget is an important concept in microeconomics, which uses a budget line to illustrate the trade-offs between two or more goods.
• Demography (Population)	Demographic factors are directly correlated with poverty reduction targets. Demography is the study of human population dynamics. It encompasses the study of the size, structure and distribution of populations, and how populations change over time due to births, deaths, migration and ageing. Demographic analysis can relate to whole societies or to groups defined by criteria such as education, nationality, religion and ethnicity.
• Bilateral Support (External Resources)	Aid is inversely correlated, meaning that while the aid contribution increases, the level of poverty reduces. Bilateral support is the allocation, within a system, of available, among the various functions that need to be performed
• Multilateral Support (UNDP&UNCDF)	UNDP & UNCDF support are inversely related with poverty, meaning that while the aid contribution increases, the level of poverty reduces. The UN support aims to promote decentralisation and local development, including capacity building and infrastructures (Local Development Fund).

¹⁴ http://en.wikipedia.org/wiki/Economic_growth

2.2 ECONOMETRIC MODEL SPECIFICATION

Following Anil & Goetz (2003) formulation on general conceptual model where family poverty rate, the econometrical multiple regression model is given as:

$$P_i = \beta_0 + \beta_i X_i + \varepsilon_i \quad (1)$$

The parameter β denotes the k parameters to be estimated for the explanatory variables, where β_0 is the level of the poverty determined by other factor not considered in the model and the term ε_i is the error specification of the model. The β 's are the regression coefficients, representing the amount the dependent variable P_i changes when the independent changes. The β_0 is the constant, where the regression line intercepts the y axis, representing the level the dependent P_i will be when all the independent variables are 0.

The standardized version of the β coefficients is the beta weights, and the ratio of the beta coefficients is the ratio of the relative predictive power of the independent variables. Associated with multiple regression is R^2 , multiple correlation, which is the percent of variance in the dependent variable, explained collectively by all of the independent variables. The empirical model of analysis based in econometric analysis, can be formalized in the following equation:

$$P_i = \beta_0 + \beta_1 X_1 + \dots + \beta_6 X_6 + \beta_4 D_1 + \dots + \beta_n D_n + \varepsilon_i \quad (2)$$

Where: P_i denotes an $n \times 1$ vector of the dependent variable – Poverty, X represents an $n \times k$ matrix containing the determinants of poverty (X_1 is economic growth (EconG), X_2 the state budget allocation (Budget), X_3 population growth (Pop), X_4 years, X_5 multilateral contribution (UNDP, & UNCDF), D_1 - Governance status (Gov), D_2 - Aid-effectiveness (aid), D_3 - Good Governance and Political stability (PolEst) , and D_4 - Budget support mechanism.

2.3 DATA AND SAMPLING

Poverty research is inevitably constrained by the available data. We next estimate a panel model for two time periods to control for unobserved heterogeneity and also to investigate inter-temporal changes. The first period of the inter-temporal dataset used is from the PRSP 2005 – 2009. In addition, based on that dataset, is forecasted information on the following panel data for the second period 2010 – 2015. For each individual variable is assumed incremental level by year.

The study adopted PRSP data because the poverty surveys cover samples of the Mozambique population the poverty figures derived from the surveys are scarce, most of existing data estimates poverty levels in the whole population, based on information derived from INE (National Statistics Institute). These estimates are subject to sampling error, which will vary with the size of the sample (that is, larger samples produce lower sampling variability).

To accommodate the standard errors which are one measure of the effect of the sample size on the accuracy of the estimate, it is referred to as the 95 per cent confidence interval and means that, if repeated samples were conducted (at the same point in time), the expected error of the sample is minimized. The section 3 of this paper provides a detailed examination of the main data source used in Mozambican poverty analysis.

3 ESTIMATION RESULTS

3.1 DESCRIPTIVE STATISTICS

This section presents ordinary least squares (OLS) estimates of equation (2) corrected for heteroskedasticity and the parameter estimates of the econometric model. We start by discussing the summary statistics. The table 4 presents the summary.

Table 4: Summary statistics

Poverty	Economic Growth		Population	
Mean	0.39306	Mean	0.102	Mean
Standard Error	0.025194	Standard Error	0.007376	Standard Error
Median	0.384419	Median	0.096947	Median
Standard Deviation	0.087274	Standard Deviation	0.025552	Standard Deviation
Sample Variance	0.007617	Sample Variance	0.000653	Sample Variance
Range	0.266599	Range	0.073926	Range
Minimum	0.273401	Minimum	0.074	Minimum
Maximum	0.54	Maximum	0.147926	Maximum

Use the variable poverty, population and economic growth, the table above provides descriptive statistics (means) of the individual characteristics. In average, we denoted significant influence of the variable illustrated and in the characteristics of the data. The level of *Coefficient determination* (R^2) adjusted is of 89.9% shows highly significance of an interaction effect is the same as for any other variable. The econometric analysis will help us in detail to identify the determinants. From the characteristics we can denote that:

- At 95% of confidence, Economic growth and Population are both possible determinants and associated with the poverty. There are roughly more than 90% chance that economic growth is determinate factor, while, the variable population the true value for the whole population is unpredictable. In average the expected level of economic growth considered is roughly 10% during the period of the estimate and there is roughly 1 chance in 2 that the true value lays within two standard errors of the estimate.
- The interactions of population and economic outcomes; given unpredictability, the institutional feature is needed for the sound functioning and for protection against external shocks not considered in this model (e.g. effect of HIV, disasters and other external factors).
- In this regard, further capacity building at national and local levels is needed to roll down the reforms to the community level and to bring the local development from the grassroots determinate factor to reduce external dependence through enhancing domestic revenue base.
- Finally, to strengthen results orientation of PRSP, attention to building and maintaining capacity at the district level should emphasize skills and resources required to understand, develop and respond to local needs.

3.2 ESTIMATIVE OF THE REGRESION

The **regression coefficient**, β , is the average amount the dependent increases when the independent increases one unit and other independents are held constant. Put another way, the β coefficient is the slope of the regression line: the larger the β , the steeper the slope, the more the dependent changes for each unit change in the independent. The table 5 indicates the estimation results.

Table 5: Parameters estimation

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-3.40556125	0.062564116	-54.433139	0.011694129	-4.200513715	-2.610608781
X Variable 1	-2.87884054	0.076153413	-37.803172	0.016836454	-3.846461395	-1.911219683
X Variable 2	2.40657E-06	7.54279E-08	31.9056447	0.019946672	1.44817E-06	3.36498E-06
X Variable 3	2.5152E-07	4.22368E-09	59.5499497	0.010689513	1.97853E-07	3.05187E-07
X Variable 4	-2.6942E-05	8.67387E-06	-3.1060766	0.198288226	-0.000137154	8.32703E-05
X Variable 5	-7.431E-06	1.84393E-07	-40.299607	0.01579393	-9.77389E-06	-5.08803E-06
X Variable 6	-0.00725178	0.000172446	-42.052559	0.015135817	-0.009442905	-0.005060648
X Variable 7	-0.12526788	0.001453887	-86.1607	0.007388417	-0.143741261	-0.106794501
X Variable 8	-1.3898E-07	4.79418E-08	-2.8988424	0.211473966	-7.48134E-07	4.70183E-07
X Variable 9	-9.1129E-06	1.55588E-07	-58.571189	0.010868107	-1.10899E-05	-7.13602E-06
X Variable 10	0.010335259	0.000286038	36.1325132	0.017614532	0.006700806	0.013969712

The β coefficient is the unstandardized simple regression coefficient for the case of one independent. These show how a variable affects the poverty in the equation (2). In general, we found that unless the variable population and internal resources, with inverse relationship, all variables considered are statistically significant in poverty reduction. The result indicates that:

- The variable 1 (*economic growth*) and the variable 5 (External resources - *aid support*) are an important determinant for an individual's poverty reduction. The donor support will still critical to achieve MDGs, meaning that the country will require that donors fulfil their pledges to take steps towards increasing their official development assistance at least by 5% per year.
- The same we found with multilateral contributions. The effects are highly stated in terms of influence in local development through institutional and human resources capacity—for planning, implementing, and monitoring and evaluation at the district level. The level of investment (\$ 46.662 millions) expected from UNDP & UNCDF is reflecting great impact at local level in poverty reduction. The investment per capita by 2015 is expected to be \$1.7 per habitant, converted in infrastructures and capacity building at the local level.
- The variable 2 (*Internal resources*) is inversely related with poverty reduction, meaning that the level of increase is not sufficient to support poverty reductions strategies. The result suggests that the government should be more engaged in terms of create suitable fiscal environment in view to collect more revenues. District finances are one aspect to be considered in that challenge. Few local governments have a local fiscal administration; as a result, the capacity of local governments to collect own local tax and fees remains very limited. The Law on Local Finances (LLF) will be one option to consider. The law on local public finances is founded on the principle of financial leveling, which ultimately does not stimulate the collection of income. The fiscal base of the territory should be the important for the size of the expenses. The common argument advanced in the favor of financial decentralization in the accomplishment of efficient allocations regarding different local preferences

concerning local public goods and services. If each local government can establish the taxes and the package of benefits in favor of benefits, in favor of citizens from the local community, the efficiency and the social wellbeing could be maximized.

Interpreting β for dummy variables (qualitative). For β coefficients for dummy variables which have been *binary coded* (the usual 1 = present, 0 = not present method discussed above), β is relative to the *reference category* (the category left out). Dummy variables and their interpretation under alternative forms of coding are discussed below.

- The variable 4 (*Good Governance, including institutions*) reveals a direct impact in poverty alleviation. The result is consistent with the idea that decentralization and local governance are critical to promote local development. The role of institutions and governance in creating an attractive climate for private sector development, including anti-corruption programs and the institutional reforms needed to generate private investment and job creation are critical in poverty reduction.
- The variable 6 (*Capacity building*), reveals capacity development has positive impact in poverty reduction. Donors and development partners together urgently need to address the issue of weak institutional and human capacity needed to respond the current development challenges, including in terms of monitoring and evaluation (M&E) systems and management (result based management) at the local level. Both donors and governments should take concrete steps to adjust staff and management incentives to motivate and be consistent with the use of harmonization, alignment, and managing for results, involving all partners - donors, countries, and civil society organizations (CSOs) - should explore together ways to increase the constructive engagement of CSOs at all stages of the harmonization, alignment, and managing for results agendas.
- *Direct Budget Support* (Variable 10): While the poverty reduces per year, the impact of DBS will be increasing the poverty in 0.0103, meaning that the effect on poor is minimal. Attention has to be addressed on human and institutional capacity to deliver goods and services at national level, with particular emphases at sub-national level. Districts may have limited capacity for harmonizing, aligning donor support to the national budget, and managing for results. In that sense: (i) Donors support should be reflected in development, meaning that funds must be used as agreed and that priorities in the poverty strategies will be adhered to. (ii) Governments must offer assurances that will transfer capacity and resources and pursue sound financial management so that donors are not “*writing a blank check for economic mismanagement*”.
- The Variable (Variable 10) suggests great impact of pro-poor and local based programmes in local development. Donors are stimulated to continue their assistance at this level. In addition, to increase alignment, strengthen country capacity, donors should strive to increase - where appropriate - the resources they provide for budget support and sector-wide approaches, with direct impact at local level.

3.3 MODEL SIMULATIONS

Goodness of fit of these estimates is most easily assessed by means of simulation. The basic principle behind the simulations is to make random draws from the uniform distribution in which the random values are converted to simulated durations, via the inverted survivor functions. This has been applied by Aassve et al (2002)¹⁵ and Aassve (2003). Fortunately, simulating a system of simultaneous hazards is quite similar to the case of single equation models with repeated spells, or any fully sequential model, such as the competing risk model.

Table 6: Simulation

Number of Observations	OUTPUT (Y)		INPUTS (X)								
	Poverty	Econ growth	Internal Resources	Pop	Good Govern	External Resources	capacity Building	years	UNDP	UNCDF	DBS
2004	54.000%	0.0750	22,373.45	17,000,000.00	0	19,733.40	0	0	32861000.00	3000.00	1
2005	50.760%	0.0770	23,551.00	17,459,000.00	0	20,772.00	0	1	33,518,220.00	4300.00	1
2006	47.714%	0.0740	26,665.00	17,930,393.00	0	25,863.00	0	2	34,188,584.40	4,515.00	1
2007	44.852%	0.0799	31,194.00	18,414,513.61	0	28,128.00	0	3	34,872,356.09	4,740.75	1
2008	42.160%	0.0863	34,331.00	18,911,705.48	0	28,980.00	1	4	35,569,803.21	4,977.79	1
2009	39.631%	0.0932	39,141.00	19,422,321.53	0	29,983.00	1	5	36,281,199.27	5,226.68	0
2010	37.253%	0.1007	41,098.05	19,946,724.21	1	31,482.15	1	6	37,006,823.26	5,488.01	0
2011	35.018%	0.1087	43,152.95	20,485,285.76	1	33,056.26	1	7	37,746,959.72	5,762.41	0
2012	32.917%	0.1174	45,310.60	21,038,388.48	1	34,709.07	1	8	38,501,898.92	6,050.53	0
2013	30.942%	0.1268	47,576.13	21,606,424.97	1	36,444.52	1	9	39,271,936.90	6,353.06	0
2014	29.085%	0.1370	49,954.94	22,189,798.44	1	38,266.75	1	10	40,057,375.64	6,670.71	0
2015	27.340%	0.1479	52,452.68	22,788,923.00	1	40,180.09	1	11	40,658,236.27	7,004.25	0
	b0	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
-537.1%	-3.405561	-0.425856	0.126231	5.731869	-0.000027	-0.298577	-0.007252	-1.377947	-5.650507	-0.063829	-
Variables (2015)	-3.4056	0.1479	52,452,6835	22,788,922.9976	1.0000	40,180,0876	1.0000	11.0000	#####	7,004,2469	-
Parameters	Coefficients	(2.878841)	0.0000024	0.0000003	(0.0000269)	(0.0000074)	(0.0072518)	(0.1252679)	(0.000001)	(0.0000091)	0.0103353
Increment	6%	8%	5%	2.7%	N/A	5%	N/A	N/A	2%	5%	N/A

Despite the fact that the principle remains the same, simulating a system will necessarily involve a higher level of complexity. Some lessons can be learned from the simulation:

- **Economic Growth & state budget:** The table 6 shows that the expected level of poverty reduction by 2015 is 27% (considering the poverty reduction target of 50%). The level expected of economic growth should stands at minimal level of 8% per year. The challenge is to achieve the level of 14% by 2015. The level of economic growth has impact in terms of local capacity of investment, meaning that the state budget (internal resources) should increase more than 5% per year. Simulation shows great impact when internal resources increases at the level of 10% per year.
- **Aid (budget support):** Donor contribution still plays a critical role in poverty alleviation. The expected minimal annual poverty decrease level is at least of 6% per year (2004 as baseline). The contribution should be roughly 5% per year in terms of external resources. Attract more domestic and foreign investments associated with economic growth, should encourage Development Partners to increase budget support.
- **Multilateral contribution:** A positive and significant relationship in the dependent variable (poverty rate) indicates that the UNDP and UNCDF's influence in poverty rates contribution still critical in poverty reduction efforts. UNDP and UNCDF investment, should be situated at the minimal level of 2% (in terms of technical assistance and capacity building) and 5% (in terms of capital investment) respectively.

¹⁵ Aassve, A. (2003), "The Impact of Economic Resources on Premarital Childbearing and Subsequent Marriage among young American Women", Demography, Vol 40 (1).

3.4 PREDICTIONS OF POVERTY BY 2015

Forecast Optimality

We begin by examining the variables and then examine the implications of these for poverty rates. All analyses are by year. The major focus of this study was to examine the impacts of quantitative and qualitative variables on poverty in a locality. As mentioned earlier, economic growth, budget allocation (aid and revenues) and good governance influence directly affect a country's well-being.

The prediction by 2015 shows the relative and independent significance of most of quantitative and qualitative factors. The argument made at the beginning of the paper that economic growth and good governance (at local level) are positively associated with poverty reduction is confirmed by the empirical results. The underlying logic is that local institutions have better knowledge of local needs, and, when endowed with powers, are more likely to respond to local aspirations. The belief in greater responsiveness is based on the assumption that local authorities have better access to information about their constituents, and are more easily held accountable by local populations.

Demographic factors were also investigated. HIV/AIDS is expected to be a critical factor found. In general, it is expected that persistent gender gaps in access to education, decent employment, and fair and equal remuneration in rural areas will still be influenced by ethnic factors, due low level of education.

Greater impact in women is expected by *good governance*: Decentralization and local governance capacity will create an enabling environment for an inclusive and participatory planning and local development process. Decentralization advocates greater efficiency and equity along with local people's "ownership" of local decisions and projects will result in more effective local investments and management and ultimately in more socially and environmentally sustainable development.

The coefficient estimates for investment in poverty and multilateral support (capacity building and technical assistance projects) are both positive and highly significant in the model for all districts, as well as in the models has great significance. Thus, higher project-based investment leads to greater reductions in poverty rates, but the effectiveness of such spending increases with the size of investment grants received (Local Development Fund).

Likewise, the effectiveness of grant spending in *reducing* poverty (note that the sign on the non-interacted variable has changed) is attenuated as local consumption spending increases. The forecast, investigated the independent effect of capital investment on poverty rates, found that districts rich in capital investment (infrastructures) have lower poverty rates.

From the budget point of view, it is predicted that decentralization reforms will create environment for planning and execution. It is expected also that investment in local development will generate new capacity at the district level. Districts will use their new authority to authorize small-scale infrastructures, to charge taxes on goods transiting through their territory and on local enterprises, and to attract new investment, increasing the level of local revenues – laying sustainability of the districts.

3.5 DISCUSSION

a) Budget Support and allocation:

As Hidge and Tibana observed (2004)¹⁶ in an ideal situation, budgeting would be linked to the policy framework and planning. A move toward budget support has to be assessed with the overall context of economic and social policies, institutional issues, and governance considerations. Where governance and corruption issues are deeply rooted these can only be addressed to a limited extent by development cooperation. For developing countries, improved transparency and adequate control systems are therefore crucial for improving confidence, and gaining broad-based donor support for domestic poverty reduction programs.

On the donors' side, budget support is only one of a range of aid instruments and the choice will depend on a balance of considerations, including the level of the country's commitment to sound policies, capacity and aid dependence. For example, where commitment to sound policies is unclear, donors may prefer to use NGOs or seek to build commitment through the demonstration effect of projects. Where aid dependence is high and management capacity strong, the case for reducing transaction costs by direct support for the budget is more compelling.

Apart from policy considerations, there are several other factors likely to complicate donor budget support, such as differing terms of financing, donor parliaments' preference for a particular sector, NGO or project focus, differing financing cycles or disbursement procedures. In many cases, domestic support for development expenditure depends on the ability to point to projects that "show the flag". For some donors, pooled funding arrangements are not feasible for fiduciary reasons. There are also less compelling reasons. Donors¹⁷ may have strong commercial interests tied to aid or development cooperation agencies dominated by staff with a project background or outlook.

In terms of budget support, we found that Decentralised Aid Support (DAS) could improve the local capacity and address the local demands and needs. UNCDF Local Development Fund is one critical example in Mozambique.

b) Sector-wide approaches

The development of sector-wide approaches has also been seen as a way in which the government and donor community can agree on common priorities. Unfortunately, lack of consensus on what constitutes a sector program has led to disagreements and not all donors support the process. However, at the core is a sector strategy and recent thinking has emphasized the need to integrate donor funds into the government system rather than using sector approaches to *by-pass* the budget.

The new framework maintains the unitary system of government. But it places the responsibility for the delivery of public services primarily at the district level. At the same time, the authority of provinces is limited to the implementation of essential inter-district functions such as the provision of specialized education and training, control of communicable diseases, spatial planning, and environmental control.

The new arrangements afford provincial and district governments more certainty in the availability of transferred resources and more discretion over their use. For example the lack of a coherent sectoral

¹⁶ See Tony Hodges and Roberto Tibana (2004) Political Economy of The budget in Mozambique

¹⁷ As referred by ADCD/DAC/TFDP(2001) - DAC Task Force on Donor Practices

policy/strategy makes it difficult to monitor progress in decentralization, notably in relation to PARPA implementation and the transformations envisaged within the Public Sector Reform, whose strategy document clearly mentions an increasing role of local governments in the execution of policy and programmes (Jacob Massuanganhe, 2005)¹⁸

In practice, sector programs have been slow to adopt decentralised systems. However, there are cases where funds are largely disbursed via government systems. In order to overcome central, provincial and district government capacity, broad coalitions that bring together a diversity of interest groups from different sectors of society and government could provide an effective institutional forum for the promotion of democratic decentralization. Such coalitions are needed to counter-balance the centralizing tendencies of national governments, and as such might serve as important political allies for the long-term development of a real, democratic decentralization.

At the same time, the case descriptions we have provided implicitly show that the central state is not a monolithic actor. While some elements within the state pursue decentralization policies, others find their interests better served by resistance to decentralization. Indeed, the politics inherent in decentralization reforms means that alliances among different political actors can be formed across administrative levels of the state, and that actors at the same level – central, provincial, or local¹⁹ – are not necessarily united by a common set of interests.

c) How funds are managed

The efficiency of decentralizing a governmental task must consider both the efficiency of performing the task itself and its impact on the political economy. The development of a decentralization plan must be based on balancing efficiency and effective learning. Deconcentration (or administrative decentralization) is said to occur when powers are devolved to appointees of the central government.

We document how central governments - ministries and front line agents - often transfer insufficient and/or inappropriate powers, and make policy and implementation choices that serve to preserve their own interests and deconcentration. Our analysis suggests that fundamental aspects of decentralization, including discretionary powers and downwardly accountable representative authorities, are missing in practice, when we look at the districts. There are needs to be confidence in how funds are managed if government procedures are to be used rather than simply using common donor procedures. Donors have therefore become more concerned with the overall improvement of financial management systems.

d) Harmonization and Monitoring

The Donor Practices is looking at “best practices” for supporting poverty reduction and integrating donor activities into the budget and planning framework includes the harmonization of their own processes including common disbursement, accounting, reporting and appraisal systems. The IFIs have developed a number of assessment tools, checklists and guidelines to assist in evaluating public expenditure management (PEM) systems. This work should aim at allowing resources to be channelled increasingly through government systems and at enhancing the transparency and

¹⁸ See Working Paper number 5: Decentralization and District Development

¹⁹ Meaning districts, administrative post and locality.

predictability of donor financing. Increasing the reliability of donor disbursements in both timing and amount should greatly improve budgeting and planning.

Opportunities for economic expansion for increased efficiency must always be weighed against the risks involved in losing political control and abdicating responsibility for the welfare of the citizens. Institutional and policy innovations need to be based upon some measure of societal consensus. Lack of confidence and willingness to take the risks necessary to innovate is a major problem in over-centralized systems. Local government initiative is therefore a key element in the political systems of liberal democracies.

Poverty monitoring and evaluation system needs to be addressed at local level and to promote linkages at central, provincial local and community levels for M&E systems. Continue to strengthen statistical capacity and leverage the on-going work and international commitments and make it sustainable (including sub-national levels of Government) will be critical to strengthen capacity at the local level (including CSOs) to enable effective contribution to M&E and development issues using existing structures.

e) Local Governance capacity development

The process of decentralization has highlighted the fundamental dilemma of upholding the government's dual role as promoter of change, stability and accountability. Creating conditions in the public sector which promote a culture of continuous improvement, foster innovation and capitalize on individual and team performance is in itself an ongoing challenge for governments.

It is often the most appropriate level for effective government intervention to meet a variety of public welfare needs and to stimulate economic efficiency. It also serves as a vehicle to permit such variation in the mix of government delivered services as is necessary to respond to local needs and diversity.

Local government is therefore central to the establishment and maintenance of responsive government and the sustaining of the democratic process. The decision of adoption of the district as "budget entities" and in the 2006 budget they have been attributed a budgetary allocation of approximately \$300,000 per district for infrastructure projects, emerge the need of capacity development to deliver local demands and needs.

Finally, given current political conditions demanding a higher degree of local autonomy and decentralization efforts in sustaining the provision of local services, further decentralization policies should continue to emphasize: (1) promoting equitable development by involving widespread participation in planning activities, (2) improving the district by providing more local revenue responsibilities, (3) providing more expenditure responsibilities to local governments in the provision of public services (4) improving the inter-provincial and inter-district harmonization by increasing alignment on investment block grant, (5) strengthening local capacity in human resources and institutions; and (6) promoting private participation in provision of services.

4 CONCLUSIONS

This study has found evidence of a significant correlation between economic growth, budget allocation and good governance in poverty reduction. With results obtained and discussed in the previous sections found considered econometrical significance of the model and related variables. The paper recognises that poverty is much related with good governance, economic growth, budget support and allocation and demography.

We examined the relationship between poverty dynamics by using parameter estimates to simulate the effect of each variable over time and we found that all variable are significant in poverty reduction efforts.

We estimate this econometric model using PRSP II data on individuals stretching from the 2004s to the late 2015s. Our estimates are, in general, well defined and in accord with findings from previous research, and indicate that unobserved heterogeneity is important in the sense that it is estimated to be large and affects the parameter.

We have argued that poverty dynamics are appropriately modelled as the outcome of interrelated economic growth and investment (budget Allocations). In terms of budget support, we found that Decentralised Aid Support (DAS) could improve the local capacity and address the local demands and needs. UNCDF Local Development Fund is one critical example.

We found that changing investment in local development (budget allocation via direct budget support or multilateral investment (UNDP/UNCDF) has a large direct impact on poverty reduction via availability, accessibility and utility of integrated services (service delivery), capacity building of citizens (participation) and good governance (local institutions). Indirect effect, meaning that there is a (inverse relationship), were found with the demographic variable. The effect of HIV/AIDS could be critical in terms of impact on poverty rates, with more impact for women and children.

Finally, the foremost conclusion is that investment in Local Development is a critical feature to achieve MDGs and decentralization could be vehicle for that purpose. In general, good governance is crucial pre-condition to be considered.

REFERENCES

- Aassve, A. (2003), "The Impact of Economic Resources on Premarital Childbearing and Subsequent Marriage among young American Women", *Demography*, Vol 40 (1).
- Anil Rupasingha and Stephan J. Goetz (2003) The Causes of Enduring Poverty: An Expanded Spatial Analysis of the Structural Determinants of Poverty in the US. *Rural Development Paper Number 22*.
- DAC (Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD). (2001). Moving to budget support: Making the transition in ways of giving aid: from single projects to supporting national budgets
- Harding, A 1993 Lifetime Income Distribution and Redistribution: Applications of a Microsimulation Model, Contributions to Economic Analysis Series. Amsterdam, North Holland.
- Greenwell Harry, Rachel Lloyd and Ann Harding (2001) An introduction to poverty measurement issues. National Centre for Social and Economic Modelling. University of Canberra. Discussion Paper no. 55. ISBN 1 74088 010 2
- Lancaster, T. (1990). The Econometric Analysis of Transition Data. Cambridge University Press: Cambridge.
- Jenkins, S (2000) Modelling Household Income Dynamics. *Journal of Population Economics* 13 (4).
- Massuanganhe, I Jacob (2005) Participatory Monitoring and Evaluation at the district Level. Mechanisms, Evidences and Practices. Working Paper Number 4. UNDP Mozambique.
- Massuanganhe, I Jacob (2005) Decentralization and District Development in Mozambique. Multisectorial framework addressed to the MDGs. Working Paper Number 5. UNDP Mozambique.
- Saunders, P (1994), Welfare and Inequality: National and International Perspectives on the Australian Welfare State, Cambridge University Press, Melbourne.
- Tony Hodges and Roberto Tibana. (2004). Political Economy of the Budget in Mozambique. Maputo, Mozambique
- Osberg, L (2000), Poverty in Canada and the USA: Measurement, Trends and Implications, Luxembourg Income Study Working Paper No. 236, <http://lisweb.ceps.lu/publications/liswps/236.pdf>, accessed 6 September 2001.
- UNDP (2005) Primer: Fiscal Decentralisation and Poverty Reduction.
- UNEP (2005) Connecting poverty and ecosystem services: A series of seven country scoping studies: Focus on Mozambique (2005). Published for the United Nations Environment Programme by the International Institute for Sustainable Development

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ANNEX 1: Local Development Framework

