

**One year Performance Based Financing experiences  
in Zanzibar, Tanzania: the case of West and Mkoani  
PBF Pilot Districts**

**Omar Ali Abdalla  
Tanzania**

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Vrije Universiteit Amsterdam  
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# **One year Performance Based Financing experiences in Zanzibar, Tanzania: the case of West and Mkoani PBF Pilot Districts**

A thesis submitted in partial fulfilment of the requirement for the degree of Master of Public Health

By

Omar A. Abdalla

Declaration:

Where other people's work has been used, this has been carefully acknowledged and referenced in accordance with departmental requirements.

The thesis "One year Performance Based Financing in Zanzibar, Tanzania: the case of West and Mkoani PBF Pilot Districts" is my own work.

Signature:



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## **Preface**

I have been working in the Ministry of Health Zanzibar for more than two decades in different units from services provision, to the administration and policy formulation department. Since 2012 I have been appointed as Performance-Based Financing (PBF) focal person and am leading the activities for initiation of the PBF intervention in Zanzibar. My experience on PBF includes two weeks training I received in Lusaka, Zambia in 2010, a one day study visit in Rwanda, and my full participation in designing of PBF scheme of Zanzibar and field visits for verification.

My wish to understand the effectiveness of PBF and its contributing factors arose after I got a better understanding of how different health system blocks work and interlink to result into increased access and coverage, and how they improve the quality and safety of the services provided as intermediate goals. These intermediate goals result in a contribution to fundamental functions of the health sector, including improvements of the health status of the population, improved responsiveness, control of social and financial protection, and improved allocative and technical efficiencies.

In the last decade PBF has gained popularity in the middle- and low-income countries and is being promoted as a promising strategy to improve health service delivery and thereby attain health sectors performance targets such as the Millennium Development Goals (MDG). The scheme has been fully or partially implemented in at least 35 Sub-Saharan Africa countries. Overall, the evidence of PBF effectiveness on reaching such goals is mixed.

In Zanzibar health status is relatively low and its health system doesn't perform well. In order to evaluate whether PBF could address these issues, the Ministry of Health started a PBF pilot in July 2013 in two districts.

PBF is considered not only an intervention but also are structural reform of the health sector, which makes it crucial to clearly understand how PBF works in different contexts. Therefore, this study will critically review the first year of implementation of the PBF pilot in the two districts in Zanzibar, identify its effectiveness, weakness and discuss learned lessons and suggestions for a way forward.

## **Acronyms**

AJHSRM	Annual Joint Health Sector Review Meeting
ANC	Antenatal Care
BCG	Bacillus Calmette-Guerin Vaccine
CBO	Community Based Organization
DANIDA	Danish International Development Agency
DHMT	District Health Management Team
DID	Difference in Difference
DRC	Democratic Republic of Congo
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HRITF	Health Result Innovation Trust Fund
HSPR	Health Sector Performance Report
HSSP	Health Sector Strategic Plan
IMCI	Integrated Management Childhood Infectious
IPC	Infectious prevention control
KIT	Royal Tropical Institute
MDG	Millennium Development Goal
MKUZA	MkakatiwaKukuzaUchumi Zanzibar
MoF	Ministry of Finance
MoH	Ministry of Health
NBS	National Bureau of Statistics
NGO	Non Governmental Organization

NHA	National Health Accounts
OCGS	Office of Chief Government Statistician
ODI	Overseas Development Institute
OPD	Outpatients Department Visit
PBF	Performance Based Financing
PER	Public Expenditure Review
PHCC	Primary Health Care Centre
PHCU	Primary Health Care Unit
PHNB	Public Health Nurse B
PSM	Propensity Score Matching
RGoZ	Revolutionary Government of Zanzibar
STI	Sexual Transmitted Diseases
SWAPs	Sector Wide Approach
THE	Total Health Expenditure
Tsh	Tanzania Shilling
USD	United States Dollar
WB	World Bank
WHO	World Health Organization
ZANA	Zanzibar Nursing Association
ZEHCP	Zanzibar Essential Health Care Package
ZHMT	Zonal Health Management Team

## **Abstract**

The Zanzibar (Part of United Republic of Tanzania) health status is relatively low and its health system like some other Sub-Saharan Countries doesn't perform well to reach the MDGs for some of the indicators by the end of this year. In July 2013, to boost its health system performance the Ministry of Health Zanzibar institute implemented PBF in two districts, selecting 24 primary health care units for control. At the end of 2014 some positive results were shown and claimed to be attributed by the pilot, which led to the plan to scale up the project.

In this study we aim to review a one year implementation of PBF in Zanzibar by examining the history and design of PBF in Zanzibar, analysing the effectiveness of the project in terms of quality by utilizing index indicators, and exploring experiences of PBF in some other Sub-Saharan countries. The study used secondary data from routine verification to determine the effect. The statistical techniques used for analysis were Difference in Difference and time series .

This study reveals that the adherence to treatment guidelines improved by 300% in the intervention districts. Further, in comparison to control facilities PBF has shown improvements in increasing institutional delivery (18%), immunization Penta3 (10%) and first ANC visit within 16 weeks (10%). The filling of partogram has been increased by 60%. However the number of outpatients per capita remains 0.5 and the PBF showed no effects on family planning consultation.

PBF in Zanzibar has shown promising results in some of the analysed indicators, though the scheme contains certain risks like distortion, gaming, coercion and decreased sustainability, which need to be addressed. Also the design and one year implementation of PBF has caused important components of PBF to be left out, including compiling of the business plan and the separation of responsibilities between provider, purchasing agent and the regulatory party. All these components need to be put in place in order for improving accountability.

Key words: Zanzibar, Performance-based Financing, quality, utilization.

Word Count : 13196.

# CHAPTER I

## 1. Background

### 1.1 Geography and administrative set-up

United Republic of Tanzania is an East African Country, neighbouring Uganda and Kenya on the north, Rwanda, Burundi and Democratic Republic of Congo on the west, Zambia and Malawi on the southwest, Mozambique on the south, and on the eastern part with the Indian ocean which is where Zanzibar islands located, see Figure 1.



Figure 1 Map of Zanzibar : Source: (1)

Zanzibar is a semi-autonomous part of the United Republic of Tanzania and is comprised by two main islands ie Unguja and Pemba. According to 2012 Census report, Tanzania has a total population of 45million of which 1.3million live on Zanzibar (of these 68% live in Unguja and 32% live on Pemba island) (1).The average annual growth rate for Zanzibar is 2.8% and the average household size is 5.1 (1).Administratively, Zanzibar was divided into 10 districts during the period pertaining this study.

## **1.2 Socio-economic situation**

Tanzania is among poorest country in the world, however its Gross Domestic Product (GDP) reported to grow with 6.9% in 2012 and 7.0% in 2013 and the GDP per capita was Tsh.1,186,200 (USD754) in 2013 (2).Zanzibar GDP at market price has reported to grow with an average of 6-7% for the last five years 2009-2013, however the GDP per capita was recorded to be 667 USD in 2013, which is lower compared to the national level(3). The poverty level in Zanzibar is extremely high as 44.4% of the population cannot afford their basic needs (about a Dollar a day per person) and 13% of the population lives under the food poverty line(about 0.5 USD a day per person) (4). In Tanzania mainland 28.2% of the population lives under the basic need poverty line while 9.7% lives under the food poverty line (5). Food and basic need poverty inequality is extremely high between different Zanzibar islands, e.g. the population living below food poverty line in Unguja districts is between 4-9%, while in Pemba districts it ranges between 19-28%(4).

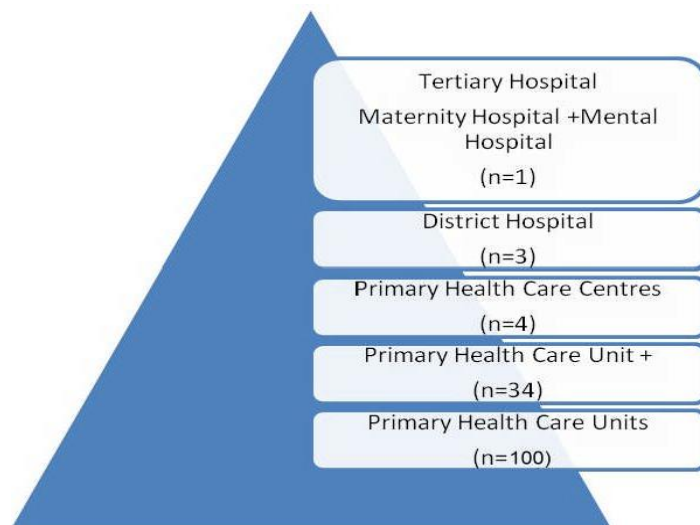
## **1.3 Zanzibar Health System**

### **1.3.1 Health infrastructure and Service Delivery**

Zanzibar health service delivery comprises public health facilities, private health facilities and traditional and alternative medicine. The public sector is a major provider in Zanzibar which is subdivided into primary, secondary and tertiary level, see figure 2. At primary level there are 138 primary health care facilities of which four (two in Unguja, and two in Pemba) are categorized as Primary Health Care Centre (PHCC). These are inpatient hospital with bed capacity of 30-40 beds. In these hospitals basic surgeries, including caesarean sections, are performed. Also among 138 facilities, 34

are categorized as "Primary Health Care Unit +" (or PHCU+). Those facilities provide more services such as dental care in comparison with the remaining 100 primary health care units (PHCU)(6).

Three out of the four districts in Pemba have a district hospital; none of the six districts in Unguja have a district hospital, however there are two PHCC which also fulfil hospital functions. There is one tertiary hospital (Mnazi-Mmoja) located in Zanzibar City, the capital of Zanzibar (6). There is not really a clear division into primary, secondary and tertiary care: the three districts hospitals and Mnazi-Mmoja hospital in the capital Zanzibar stone town fulfil their referral role (for secondary and tertiary services, respectively) only in a very partial manner. Zanzibar uses a 5 km radius for the construction of PHCU. By 2010, 90% of the population could reach PHCU within 5km and 58% of the population could reach the public facility within one km (4).



**Figure 2: Structure of Public Health Facilities.**

**Source: (6)**

There are four private hospitals and 82 private dispensaries. The majority of these facilities are located in urban areas, specifically Zanzibar Town, leaving Pemba Island and Unguja rural areas not served with these facilities. Traditional/alternative medical practice is less regulated, though a special



law for regulation of these practices has been established, yet its enforcement is still challenge (6).

### **1.3.2 Indicators for Zanzibar health status and Health System Performance**

The Zanzibar Health Sector has undertaken great efforts toward achieving MDGs and Sector goals: malaria prevalence has been reduced from 49% in 2004 to below 1% in 2010. Maintaining the prevalence of HIV among in the general population of below 1% is also regarded a great achievement (7).

There are, however, several MDGs for which the sector is far from the target. Childhood nutrition remains one of the most challenging areas: stunting for children under five was at 30.2% in 2010, and has to be reduced to 20% by 2015 (8,7). In 2010, the under five mortality rate was 79 per 1000 live births, neonatal mortality rate was 31 per 1000 live births, and infant mortality rate was 51 per 1000 live births(8). Skilled birth attendant was 51% in 2010, and is targeted to reach 90% by 2015(8,7). Use of modern contraceptive was only 12% in 2010 and is targeted to reach 20% by 2015 (8,7), while the unmet need for contraceptive is 35% among married women (9).

According to Demographic Health Survey 2010 only 0.5% of mothers reported to use ANC services under four months of pregnancy and 49% of mothers reported to have 4+ ANC visit before delivery (8).The Non-communicable disease risk factors survey conducted in 2011 revealed that the overall prevalence of hypertension of 33%, obesity of 14.4%, and 3.7% of the surveyed population has diabetic mellitus (10).

### **1.3.3 Human Resources for Health**

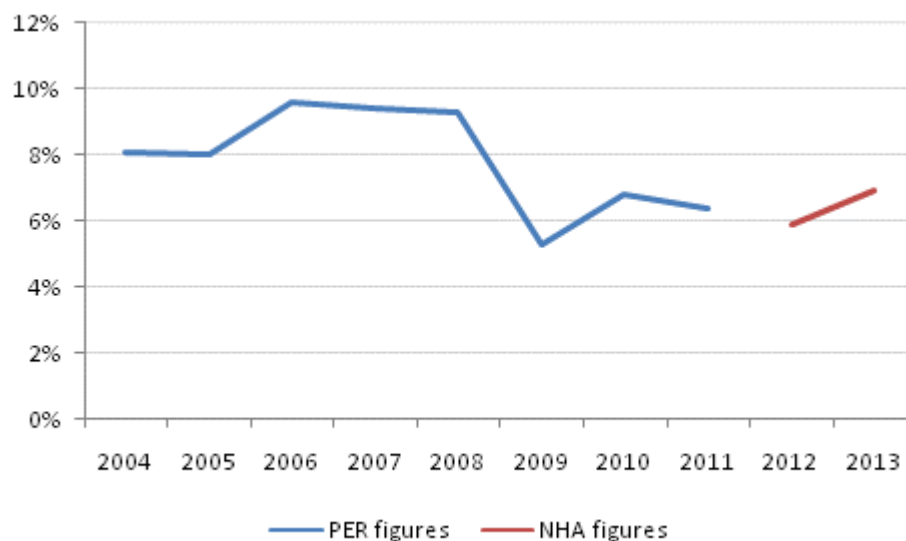
It has been estimated that the number of staff required to achieve the objectives of health policy is 4,657, while by November 2013 there are 3,977 staff employed in the Ministry (11). These staff include medical, paramedical, nurses, cleaners, administrators, planners, watchman etc. Overall only 38.5% of medical posts were filled and 75.8% of nurses were available At the primary level there are 60% and 50% shortages of nurses and clinical officers respectively (11). In comparison to WHO benchmark of 2.26 health staff per 100 population, Zanzibar stands at 1.22 per 1000

population in 2013. The related challenge is the retention of medical staff, specifically medical doctors and specialized doctors, for whom the main reason of leaving the job is low salary (12).

### 1.3.4 Health Financing

The Zanzibar 2013 National Health Account reveals that the Total Health Expenditure (THE) as a percentage of gross domestic products (GDP) was 3.8%, while THE per capita was 25.78 USD (13). Expressed as a percentages of THE, the government health expenditure was 37.9%, out of pocket expenditure was 25.8%, and external fund was 36.3%(13). In comparison to the Sub-Saharan region, in 2013 THE as percentage to GDP was 5.6%, while THE per capita at exchange rate was estimated to be USD110 and it was shown that 10% of THE originated from external sources (14). In comparison with Sub-Saharan region, these data show that the health sector in Zanzibar is highly underfunded and is dependent on donors. The rate of out of pocket exceeded the WHO guiding limit (which is set to be below 20%), which indicates the risk of catastrophic expenditure. The MoH is on the process to establish its National Health Insurance to minimize these effects.

The government health expenditure as percentage of total government expenditure was 6.9% which is far to Abuja Declaration target of 15% (13). Figure 3 shows the trend for the last ten years.



### **Figure 3: Zanzibar Government spending on health as percentage of government spending**

Source:(13)

There is no official user fee at primary level although due to reagents, supplies and drugs being frequently out of stock at some facilities, patients were asked to pay or buy from local drug shops. This was initiated by community health committees and some providers (15).The official user fees begin at district hospitals to tertiary hospital in which its revenue represents 4.4% of the Government expenditure to the Ministry of Health (15). If we exclude the salary and capital expenditure, this revenue accounts for 37% of the hospital's expenditure of other charges from government fund (15).There is one joint account for all hospitals in Pemba, which is controlled by the MoH in Pemba. In Unguja, from 2013, these revenues are controlled by the Ministry of Finance (MoF) through treasury and expenditures made on request.

#### **1.3.5 Planning and Budgeting Process**

Zanzibar has a vision 2020 and five year national plan "Strategy for Growth and Poverty Reduction (MKUZA II 2010-2015)", which is coordinated by MoF. In the sector level there is the Zanzibar Health Policy of 2011 and the Health Sector Strategic Plan III of 2013-2018. Its implementation is under three years Medium-term Expenditure Framework which is then segregated into one year plans.

Zanzibar has no Sector Wide Approach (SWAp) mechanism, although certain elements exist: there is one agreed health sector strategic plan, one monitoring and evaluation mechanism, and the majority of the government and donor funds are used for the implementation of this plan. Since 2012, the MoH has established the Basket Fund to replace Health service fund, which was only supported by one donor (DANIDA). The Basket fund is currently contributed to by DANIDA, Global Fund R.8 (Health System component), UNICEF, and the Government. The basket fund represents only 2% of Total Health Expenditure and is mainly used to support districts plans (13).

An input based system is the dominant system in financing of health facilities in Zanzibar, meaning that the facilities unconditional to the result, receive drugs, medical supplies, vaccines, equipment, salary and training of staff, maintenance of infrastructure. Majority of these inputs are received from central Ministry (Programmes and Central Medical Stores). Some items are also procured by District Health Management Team (DHMTs), such as medical supplies, reagents, equipment, cleaning materials and stationary and maintenance materials.

## **CHAPTER II**

### **2. Problem Description**

Zanzibar health system performance and health status in general is relatively low and the majority of its indicators doesn't seem promising in reaching the target set by the sector (6). This is also a case in the sub-Saharan region. The underfunding of Zanzibar health system might be one reason for its poor performance (13), but experience shows that increasing of funds alone doesn't guarantee better performance. In Zanzibar poor staff performance is also among the reasons for stagnation of the sector's performance (16).

The Zanzibar health sector conducts annual joint technical reviews to assess the progress and propose interventions to facilitate the realization of the targets. In 2012/13 MoH, together with the consultation of development partners, decided to introduce PBF as the intervention to accelerate the achievement of sector targets. The decision was motivated by the findings of the health sector performance report, which concluded that staff performance at all level was inefficient and ineffective(16),while the productivity study conducted in Zanzibar revealed that only 61% of the staff time was used for productive activities (17).The establishment of PBF in Zanzibar is facilitated by both the encouraging experience of PBF in other sub-Saharan countries including Rwanda and Burundi, and the increased capacity of the Ministry on the subject. At the same time anecdotal evidence and results from ad hoc ministry reports suggest that the services provided are still of low quality, and thus there is room for improvement of both quantity and quality.

Severe issues with staff performance are common place in many low-income countries: a study across a set of least developing countries identified that one third of health staff were absent during the unannounced visits, but even those present in the facilities were not working (18). Staff motivation is an important factor to determine the quantity and quality of care, thus deserves much attention from policy makers. At the same time a well-functioning health system, among others, depends upon removing the challenges faced by health workers (19). A qualitative study in Tanzania

found that the majority of providers prefer financial incentives as a key method to motivate them to do their best (20).

In Zanzibar, the PBF initiative was designed and implemented by a MoH-wide PBF team which was coordinated by the Health Sector Reform Secretariat (HSRS). From 2012-2013 the team designed the scheme with inputs from a wide range of participants from throughout the Ministry and with the technical support of outside consultants. The detailed design of this scheme will be elaborated on in chapter IV. In July 2013 – after passing several preparatory steps (including the design of the scheme, securing the fund and authorization of the decision makers of the Ministry) – the pilot was rolled out in two districts, Mkoani in Pemba Island and West in Unguja Island. The pilot had the following objectives:

1. To increase the utilization of preventive services
2. To improve the quality of curative and preventive services as well as patients satisfaction
3. To demonstrate the value for money so as to attract more financial support from government and development partners
4. To retain key staff in rural areas, especially in Pemba Island

PBF is gaining popularity in the developing world, yet its evidence on effectiveness is still low (21). The term PBF can be defined as the transfer of money or material goods conditional on taking a measurable action or achieving a predetermined performance target (22). PBF mainly applied on demand side where subsidies can be directed to health facilities, health staff, DHMTs , provincial health teams or even central level staff central medical stores (23).

Before the first two years of the introduction of PBF several activities were conducted, including establishment of PBF unit, training of service providers, and formation of verification teams. For the first six months the facility verification was done once every month in order to enable health staff to understand the PBF principles. The verification was continued as planned on a quarterly basis. Community verification was done by the Zanzibar Nursing Association –ZANA. The detailed process of verification will be explained in chapter IV.

The primary funder of the pilot is the Danish International Development Agency (DANIDA). For the first year of PBF implementation DANIDA paid all four quarters' facility performance bonuses. As at the time of writing, some results have been shown and claimed to be attributed to this pilot; moreover the PBF unit is in process to develop a proposal to seek funds for scaling up the project without conducting a review of the project. The steering committee which was intended to oversee the PBF process has not yet been established.

Initially, the pilot was not intended to serve as a basis of conducting an impact evaluation. Instead the Ministry simply wanted to demonstrate the feasibility of the program. However, the Revolutionary Government of Zanzibar (RGoZ), MoH programmes and development partners are demanding local evidence in order to commit to scaling up the program. Besides providing evidence on the pilot's effectiveness, lessons learned, best practices and show weakness. An evaluation could also provide insights on how to improve implementation as to optimize the outcomes. Furthermore, without consider other factors, these results which are claimed to be attributed to this pilot, might influence MoH to make irrational decisions to scale up the project in an ineffective manner. Under these circumstances we found it reasonable to undertake this study, which involves an assessment half way through the PBF pilot project, i.e. after one year of implementation.

## **CHAPTER III**

### **3.Objectives and Methodology**

#### **3.1 Objectives**

##### **General Objective**

The objective of this study is to critically review the first year of implementation of the PBF pilot in two districts in Zanzibar, so as to inform the policy makers of the results obtained at this stage and recommend a way forward.

##### **Specific Objectives**

1. Describe and critically examine the history and design of the PBF pilot in Zanzibar.
2. Analyse the effectiveness of the PBF initiative after one year, in terms of service utilization and quality for the index indicators of the project.
3. Critically review the challenges encountered during implementation of PBF in Zanzibar.
4. Review PBF experience in other Sub-Saharan countries, particularly the evidence on service quality and quantity of both curative and preventive services.
5. Formulate conclusions and recommendations for the way forward of PBF in Zanzibar.

#### **3.2 Methodology**

##### **3.2.1 Study Type and Data Analysis**

A retrospective assessment was done, using the existent data of index indicators. The analysis compares the indicators of the treatment facilities (30 PHCUs in the 2 intervention districts) with those of a control group of facilities (a sample of 24 PHCUs from the remaining 8 districts was taken). This data was used to evaluate effectiveness of PBF in Zanzibar and were obtained from a facility verification process at both treatment (PBF) and control (non-PBF) facilities. For the treatment group the purpose of collecting the data was the payment of PBF subsidies. Baseline data for all facilities and the data for the control group were collected for the purpose of evaluating the program's impact. 19 output indicators and their



corresponding quality indicators were officially adopted for the PBF pilot. These indicators were routinely monitored through a verification process and they are used for payment of subsidies. The list of these indicators is attached in annex 2. This assessment covered five output and two quality indicators only, see table 1. These indicators cover all four areas i.e. curative services, reproductive health and preventive services.

**Table 1: Selected Indicators for Analysis**

	<b>Quantity ( output ) indicator</b>	<b>Quality Indicator</b>
<b>1</b>	OPD consultation	% of OPD cases treated with adherence to treatment guidelines
<b>2</b>	Children immunized - Penta 3	
<b>3</b>	Antenatal care First Visit with 16 weeks	
<b>4</b>	Institutional Delivery	% of partograms filled correctly
<b>5</b>	Family Planning consultation	

**Source:** (14)

The reasons for selection of these indicators are:

1. Performance of the selected indicators was used as justification for introduction of PBF in Zanzibar, thus by analyses of these indicators a clear picture will be given of effectiveness of intervention in terms of output indicators and quality of service provided.
2. A number of the indicators were not properly implemented due to frequent shortage of supplies or are difficult to evaluate because the services are usually administered in sporadic campaigns, e.g. bed nets, vitamin A and deworming medicines.
3. Tetanus vaccination of girls 12years and above performed at school was not properly implemented by many PHCUs due to misunderstanding of government policies by some school headmasters.
4. The criteria for the fourth ANC standard visits were also changed during the process. Initially payment was made to any attendance of

four visit, but was later changed to only those four visit according to guidelines

For the analysis in this study, the monthly case counts for each indicator are aggregated to the treatment and control facility group level. Output indicators were expressed by percentage of coverage: the actual number of activities performed was divided by the expected number of activities. The expected number of cases was estimated as follows:

- For outpatients department services' (OPD), the target was one consultation per inhabitant per year
- For 'Pentavalent vaccine third dose (Penta3)', the target population was children under one year of age
- For 'institutional delivery', the target was all expected pregnancy in a year
- For 'ANC first visit within 16 weeks', the target population was all expected pregnancy
- For 'family planning consultations', the target was the population of all women at reproductive age

Indicators that proxy service quality (as called 'quality indicators') are expressed as a percentage of cases adhering to guidelines over all cases recorded. The analysis compares the treatment and control facilities before and after the start of the pilot and is therefore akin to a difference-and-difference analysis. There were no data collected in control facilities for two indicators (Uses of partogram and family planning consultation), so the main analysis done for these indicators represents the trend.

To carry out the analysis to identify the effect of the project, two statistical techniques were applied:-

- a. The Difference-in-Difference (DID) technique is being employed to estimate the effect of the pilot by comparing the average changes in the outcome (coverage, the absolute number of cases, or the percentage of cases according to guideline), before and after intervention in treatment and control PHCUs.
- b. Time series graphs will be used to supplement the difference-in-difference analysis in order to examine trends in monthly or quarterly coverage from treatment and control PHCUs.

### 3.2.2 Literature review

An online literature search was conducted between June-August 2015 from multiple databases and database aggregators; Google Scholar, PubMed and Google. In addition the Word Bank (WB) website, Result Based Financing Website ([www.rbfhealth.org](http://www.rbfhealth.org)), WHO website (<http://www.who.int/en/>) were used to search for published papers and guidelines. The key terms used to search were Pay for Performance, Performance Based Output, Result Based Financing, Performance Based Contracting, Performance Based Funding, Performance Based Incentives and Performance Based Financing.

During searching the key words were combined with the Sub-Saharan countries Tanzania, Uganda, Kenya, Burundi, Rwanda, Mali, Ghana, DRC, Mozambique, Zambia, Zimbabwe and other Sub-Saharan countries. Also the reference list given on peer reviewed papers was used to search further published papers. Generally, the literatures included in this review were those published from 2005 onward; published in English language; evaluate impacts or outcome of PBF on output indicators or service quality indicators; assess the determinants of PBF, conducted in Sub-Saharan Africa countries; either qualitative or quantitative studies. **Table 2** describes the search strategy by objective and sources.

**Table 2: Search Strategy**

Source	Objective (1)	Objective (3)	Objective (4)
	Key words used		
Pub Med, Google scholar, Google and KIT library			Pay For Performance, Performance Based Output, Result Based Financing, Performance Based Contracting, Performance Based Funding, Performance

			Based Incentives and Performance Based Financing and Combined with names of Sub Saharan countries.
WB website, RBF website and WHO website			Pay For Performance, Performance Based Output, Result Based Financing, Performance Based Contracting, Performance Based Funding, Performance Based Incentives and Performance Based Financing and Combined with names of Sub Saharan countries
Tanzania (Zanzibar) government websites ( MoH websites, OCGS, MoF, NBS)	Performance Report, Performance Based Financing, JAHSRM Report, PBF Pilot Report, Poverty, Map, Health Bulletin	Performance Report, Performance Based Financing, JAHSRM Report, PBF Pilot Report, Poverty, Map, Health Bulletin	

**Source: Author design**

Furthermore, to answer research objectives number 1 and 3 an extensive search was made to Tanzania official government websites. The main

websites used were Ministry of Health Websites (<http://info.zanhealth.go.tz/>), Office of chief government statistician website (<http://www.ocgs.go.tz/>) and National Bureau of Statistics of Tanzania (<http://www.nbs.go.tz/>).

### **3.2.3 Conceptual Framework**

To be able to find a conceptual framework to explain and analyse the effectiveness of PBF on utilization and quality of services, a review of several published papers related to the topic was conducted. The main key search words were “conceptual framework” combined with “Performance Based Financing”. The authors of all papers that were found decided to apply various theories and conceptual frameworks not specific for PBF, while these frameworks were drawn from different disciplines e.g. sociology, anthropology and economics, depending upon the authors area of interest and issue to be discussed.

Brawn GW et al., conducted a literature review in 2013 and identified several frameworks which were used by PBF researchers. They concluded that though some specific PBF frameworks had been developed, participation is implied as an important factor, yet not explicitly dealt with in theory or in the design recommendations and frameworks (24).

A recent published PBF conceptual framework by Health Results Innovation Trust Fund (HRITF) includes many determinants influencing the functioning of PBF (25). The model describes health facility factors, health system factors, community factors and political economy factors such as public policy, legal framework, institutional capacity and stakeholders support. The model explains how these factors interlink to produce the required result.

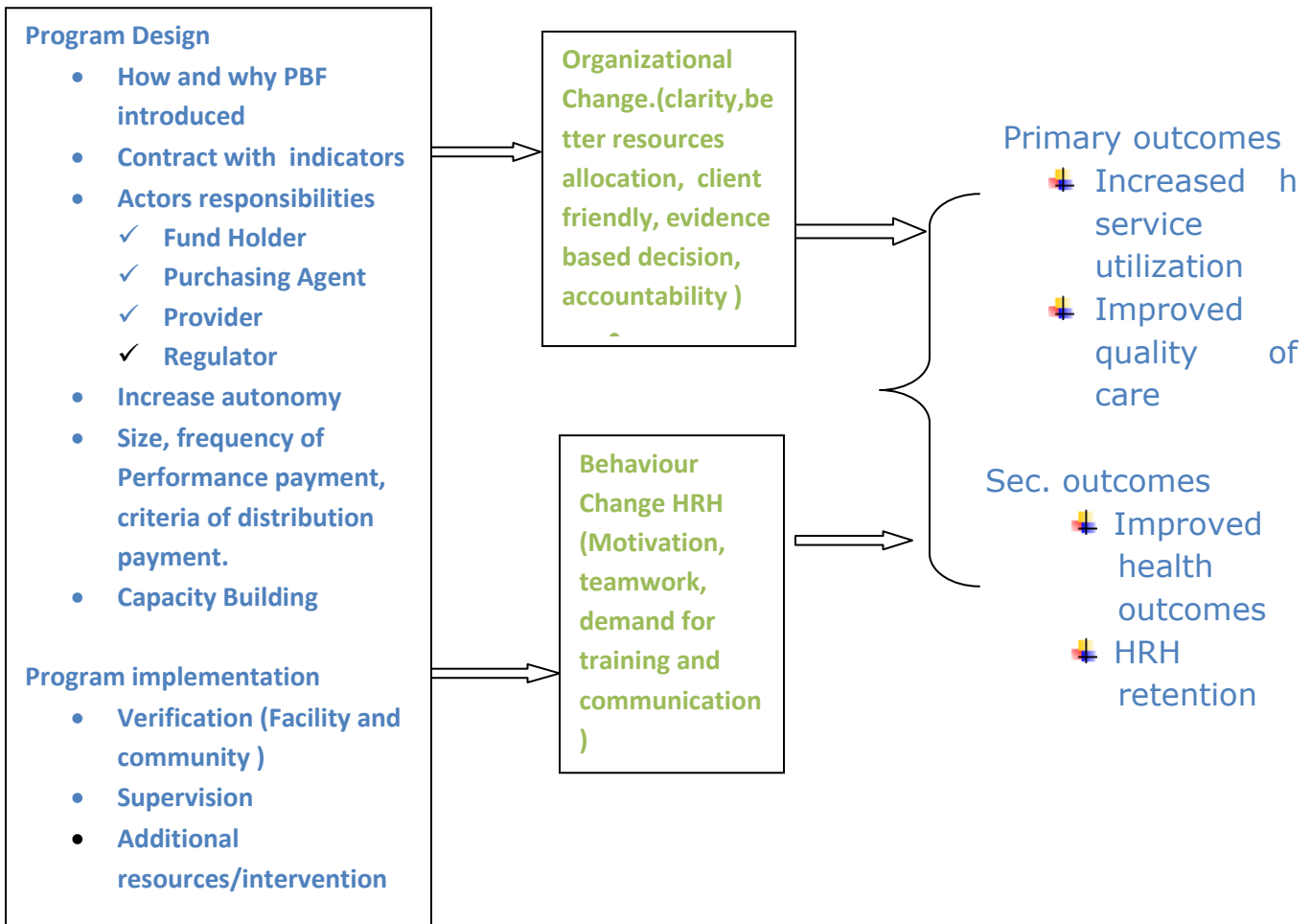
The present study used this model with modification to suit the objectives of this research. This model enables exploration of the factors that make changes to organizations and behaviour of human resources for health, which ultimately results in changes in primary and secondary outcomes. The modified framework see figure 4 does not include community factors, political factors and details of pillars of health system as these are beyond the objectives of this thesis.

The theories behind changes in this model can be explained as follows: increasing autonomy to PHCUs and build their capacity to develop and implement their plans leads to better resource allocation by using the acquired management and leadership skills. Also evidence based decision making can be achieved by increasing autonomy, contracting with indicators and routine verification. The model shows that the improvement of transparency and accountability could be achieved by contracting as well as routine reporting and verification process. Also the level of transparency and accountability is normally improved by dividing responsibilities among actors i.e. fund holders, purchasers, regulators and providers. If PHCUs as an organization understand that their clients are important for their payment they will employ a more client-friendly approach These organization changes lead to improved availability and quality of services provided, which will ultimately result in improved utilization and better health outcomes (25).

The model also demonstrates how human resource behaviour changed in terms of size and frequency of payment and the level of autonomy the PHCUs have been given, which all will bring changes to the morale and motivation of staff. Depending on the type of indicators and fund distribution among staff, team work and collaboration will improve. Also autonomy increases the perceived feeling of control of health facilities, as well as the demand for knowledge. The change in behaviour also depends on the health facilities' level of understanding of the program, their expectations, their intrinsic attractiveness of the PBF, and their perceived sense of righteousness (25).

The availability and quality of services provided will improve by having motivated staff, improved team work, better communication, higher perceived control of PHCUs and increased specific demand of knowledge. This in turn increases utilization and better health outcomes, taking into consideration that other health system factors and community factors also improve or at least not worsen (25).

Intervention implementation Intermediate outcome Outcome



**Figure 4: Adapted Performance-Based Financing Framework**

**Source: (25)**

## **CHAPTER IV**

### **4. History and Design of PBF Pilot in Zanzibar**

#### **4.1 History of PBF in Zanzibar**

##### **4.1.1 Why and how MoH Zanzibar introduced PBF**

As mentioned previously MoH Zanzibar conducts annual joint health sector review meetings to assess the yearly performance of the sector. One of the important reports prepared for that meeting is the Health Sector Performance Report (HSPR). The 2008/09 HSPR revealed that staff performance at all health service delivery levels was inefficient and ineffective and contributed to poor performance of the health system (16). The report listed several issues which contributed to poor staff performance which include:

- a. High staff absenteeism due to different reasons e.g. training, arrive in job late and leaving too early
- b. Staff having low understanding of their job description
- c. Non exploitation of certain skills of some staff
- d. No effective rewards or disciplinary mechanisms in place for good or bad work respectively
- e. High turnover of professionals
- f. Low productivity of staff e.g. only productively work for a part of the shift
- g. Little commitment, motivation or accountability to complete work or do it well
- h. Unclear lines of communication.

Almost the same findings were found in a Productivity study conducted in 2007, which showed that, general staff use only 61% of their time for productive activities, while more than 39% of their time was spent on non-health issues or spent not in their working place due to different reasons (17). The productivity level varies between cadres and levels of service delivery. With regard to productivity by level, PHCU record the lowest productivity (55%), while District Hospitals recorded 70% and Referral Hospitals 82%(17).The high productivity at hospital levels can be allocated to the absence of gate keeping procedure allowing patients to decide to



bypass the lower health care levels. This sequence of events results in excessive staff time used for waiting for patients, which was regarded as unproductive time in the study. The study also reveals that lower cadre of Public Health Nurse B who mainly work at PHCUs, use only 44% of their time for productive activities, while doctors who work at District Hospitals or Referral Hospital spent 78% of their time, and Clinical Officers who work at all levels of care use 88% of their time for productive activities (17).

The findings of these two reports were used by the MoH to justify the introduction of individual staff performance appraisal systems, a scheme which has not been implemented due to its effectiveness is unclear and due to anticipated implementation difficulties including time consuming, lack of precision etc. Instead, in 2013/14 the PBF was introduced as pilot in two districts Mkoani in Pemba Island and West in Unguja Island to tackle the issue of low productivity and improve health system performance (26). For the summary of activities prior to the introduction of PBF in Zanzibar refer to table 3

Although the Zanzibar health sector has a fairly dense and equal distribution of primary health care facilities (4), the community still doesn't adequately use the preventive and curative services, even though those services are available (27). There is slow progress toward certain MDGs (especially 4&5) and certain indicators are far to reach the target e.g. institutional delivery, contraceptive use, immunization coverage, first ANC Visit within 16 weeks and postnatal visits.

**Table 3: History of PBF in Zanzibar**

Year	Milestones	Progress and way forward
2009/10	Milestone 3: Develop and implement an incentive scheme based on open, participatory performance appraisal system.	<b>The milestone was not implemented</b> due to difficulties to undertake individual appraisal; instead new milestone for health facility level appraisal was opted for.

2010/11	Milestone 3: Develop and implement an incentive scheme based on an open, participatory performance appraisal system at facility level	<b>The milestone was partially achieved.</b> Three Technical Working Group (TWG) members (finance, sector performance and quality) attended two week course on Performance Based Financing in Lusaka. The PBF concept was oriented to all members Health Sector Reform Secretary and TWGs
2011/12	Milestone: Develop and implement an incentive scheme based on an open, participatory performance appraisal system at facility level	<b>This milestone was assigned to three TWGs</b> (Quality, Finance and Sector Performance). Other two TWG members (Finance and Human Resource) also attended same two week course at Nairobi.  After higher official ministerial consultation a decision was made to establish PBF
2012/13	Milestone : Institute Performance Based Financing in two piloted districts of West and Mkoani prior to PBF roll out to all districts	<b>The milestone was partially achieved.</b> PBF team has been appointed and meets weekly. A consultant was recruited to advise the team and develop a mechanism of implementation and estimate the cost of project.

		<p>PBF indicators were identified together with all vertical programs and got approved. Each indicator was priced (given specific incentive award).</p> <p>Criteria for pilot districts were developed and two districts were selected.</p> <p>A study visit to Rwanda was done which included senior official from MoH and Ministry of labor.</p> <p>Ministry of Health higher decision organ (Executive committee) approved the design and allow to pilot the scheme in these two districts</p>
2013/14	<p>Milestone No. 5:          Institute Performance Based Financing in two piloted districts of West and Mkoani prior to PBF roll out to all districts</p>	<p><b>This milestone was achieved</b></p> <p>Training package for PBF was prepared, endorsed and conducted.</p> <p>PBF unit was established under Department of Policy, Planning and Research.</p> <p>Verification committee was formulated.</p> <p>PBF has been instituted at two selected districts of West and Mkoani. Health Staff have been motivated in intervention districts and there is a notable change on use of Standard</p>

		<p>Guidelines as compared to control facilities.</p> <p>There is a full time staff under Overseas Development Institute (ODI) support facilitating PBF operation</p>
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Sources: Author design from (6, 15, 28, 29, 30, and 31)

**4.1.2 Selection of Pilot Districts and PHCUs for Control**

Two criteria were used to select PBF pilot districts; (a) the level of performance of district; (b) the size of the population. Two years HMIS data (2009 and 2010) were used to understand which district had the lower performance. Indicators used included OPD utilization rate, BCG coverage, % fully immunized children, ANC first visit coverage, % children reached with medication for Deworming and Vitamin A supplements and % of U5-children with moderate malnutrition. Mkoani and West districts were found to have lower performance as compared to the rest of the districts on the two islands.

In regard to size of population the West district has the highest population (370,000) compared to all districts in Zanzibar. Mkoani with a population of 98,000 is the 6<sup>th</sup> most highly populated district in Zanzibar and the 3<sup>rd</sup> largest in Pemba. As Mkoani district’s population is low it was not entitled to be selected as a pilot district. Other criteria favouring the selection of these districts include the previous decisions of the MoH that the approach shall be tested in both islands as well as the decision that one district should be rural and another should be urban. Mkoani is a rural district and the West district is a semi-urban district.

For the selection of control facilities HMIS data were used to identify the particular characteristics of treatment PHCUs. Subsequently those treatment PHCUs characteristics were matched with all government PHCUs by using matching statistics technique known as Propensity Score Matching (PSM). The process started by finding out which characteristics are specific to pilot PHCUs. Next a single variable (the propensity score) was created for each

facility to captures the relative importance of these different characteristics. Lastly the facilities that had similar propensity scores were matched. As a result each PBF facility was matched with a similar non-PBF facility.

## **4.2. Setting of indicators and level of incentive**

Another important dimension which this study examines is the process of selecting and pricing these indicators. In general this process involves all key stakeholders. The process starts with the PBF team's development of a list of indicators which is then compared with a generic list in other countries. This in turn was discussed with all vertical programs, DHMTs, health facilities representatives, to then finally get approved by the health sector reform secretariat.

A list of 19 output indicators were selected, see annex 2, out of which four indicators are about OPD curative services, seven were for reproductive health services, two for immunization services, two for HIV services, two for nutrition, one for malaria and one for tuberculosis. At the same time a list of service quality indicators were agreed upon, in which 11 out of 19 output indicators have corresponding service quality indicators, see annex 2

The PBF indicators cover at least four out of five priority health interventions of the Zanzibar Essential health care package (ZEHCP) of 2007. Among the health promotion and diseases prevention interventions, no indicator was selected for PBF; service providers may take this as a signal that policy makers consider this area as less important and they may be tempted to neglect it.

The setting of level of incentive per indicator was done under the assumption that the existing input system will continue even to the intervention districts. Among the inputs which facilities will continue to receive are salary of staff, drugs and supplies, training for staff, major equipment and maintenance. Thus, the designed PBF scheme was to provide an incentive to staff and to fund business plans, which will help PHCUs to achieve their targets.

To come up with an incentive level per each indicator a PBF team developed three criteria i.e. externality, government priority and coverage (Current

level).The scoring system was applied to all indicators using these criteria. During scoring, the service quality indicators were given higher weight, sometimes more than double of the output indicators. The total scoring per each indicator was then referenced with USD 0.3 per OPD case to get the incentive level for each indicator. The result of this exercise shows that the lowest incentive is Tsh. 448/= for an OPD consultation and the highest is Tsh. 9,072/= per health facility delivery in which the partogram is filled correctly. For the level of incentive to each indicator see annex 2.

The estimated subsidies required for the two districts were USD 413,747 for one year (32). The existing PBF fund from DANIDA in the three years was USD1.2 million.

### **4.3 Actors of PBF in Zanzibar**

The PBF institutional framework for Zanzibar has six main actors see figure 5; each of these actors has a different task.

#### **i. Purchasing Agent/PBF unit**

According to the design of the scheme, the purchasing agent shall be an independent organization and its main responsibilities include: contract with providers; conduct training to services providers on PBF; conduct facility verification; and hire the community organization to conduct community verification or patient's satisfaction survey. During the first year of PBF implementation the purchasing agent was not hired, instead all the functions of this agent were performed by PBF unit.

PBF unit has been established under the department of policy, planning and research and the Director of the department is an immediate supervisor of the unit. There are 3 staff of the unit including: one administrator; one public health specialist and one economist from ODI. With the exception of economist from ODI the rest of staff also perform other task under the health sector reform secretariat. The unit was supported by DANIDA Human Resource and Quality Assurance Advisor, as well as an economist from the planning unit who is also a PBF focal person and other members of PBF team. Another function of the PBF unit is to prepare and request the subsidies from fund holder.

**ii. Principal contract Holder PHCU**

These are providers which are responsible to provide a full range of health services as per ZEHCP. These facilities undergo contracts with Purchasing Agent/PBF units. Ideally, both private and government PHCUs should be involved. However, this did not happen during the pilot, during which only government health facilities were contracted. This reduces the competition among providers, especially in western districts where almost half of the patients receive their curative services in the private sector.

**iii. Fund Holder**

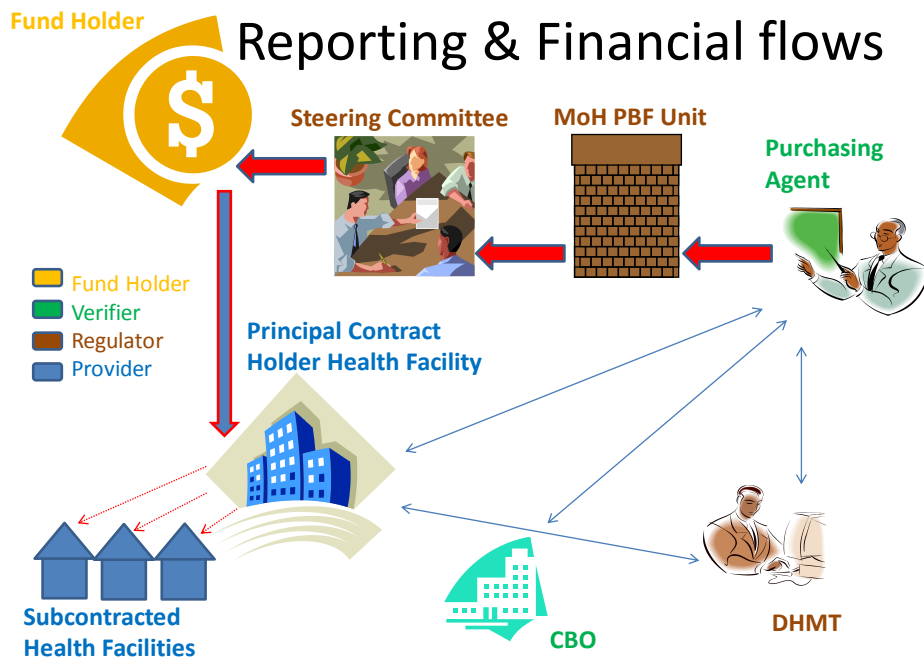
Although not separated as an established fund holder, DANIDA, who is only a donor of the project, also performed the task of fund holder mainly by making payment to facilities.

**iv. District Health Management Team –DHMT**

The functions of DHMT include supporting PHCUs in their development of business plans, verifying the place where PHCUs procure supplies, equipment etc. from PBF funds, and ensuring the quality assurance. At the same time according to the design of the scheme, DHMTs were supposed to contract purchasing agents for the achievement of certain indicators. Since this did not happen in the first year of implementation, the DHMTs did not receive PBF bonus.

**v. Community Based Organization-CBO**

The main responsibility of CBO is to conduct community verification to identify fake cases and obtain patient satisfaction. Purchasing Agent/PBF unit contracted ZANA which is a professional NGO in order to conduct community verification. The detailed process of this community verification is explained in section 4.6.



**Figure 5: PBF Institutional framework of Zanzibar**

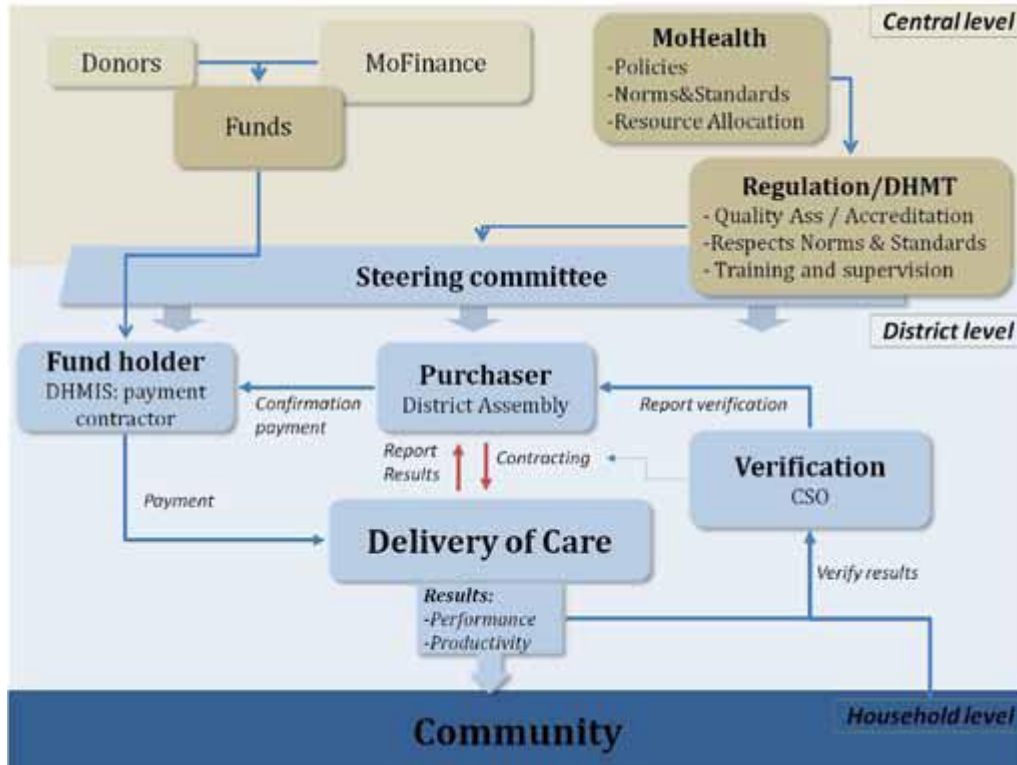
Source: (26)

### vi. **Steering Committee**

The main function of this organ was to oversee the project, policy alignment, approve revision and weighting of indicators/subsidies, approve budget, review the reports of PBF unit, and scale up the project. The proposed members of the committee were Principal Secretary of MoH who will be chair, director of planning, director of preventive services, representatives from MoF and department of civil servant. For the first year of implementation of the scheme the committee was not established, and as a result there is no one who to perform the above mentioned task.

There are obvious differences between the Zanzibar PBF institutional framework and the generic institutional frame work of PBF which was developed by Royal Tropical Institute (KIT) see figure 5 and figure 6





**Figure 6: The generic institutional framework for PBF**

Source : (33).

The Zanzibar model looks incomplete in the sense that the donor is also serving as the fund holder; moreover, during the first year of implementation there was no steering committee, and no independent purchasing agent. With this, the Zanzibar PBF model did not satisfy one of the most fundamental features of a typical PBF scheme, being the distinct roles for the purchaser, providers, regulator, and fund holder.

#### **4.4 Expected outcome of the Project**

There are four specific objectives to the PBF pilot project which can be classified into two categories being primary outcomes and secondary outcomes. The expected primary outcomes were to increase the utilization of preventive services and improve the quality of services provided. The secondary outcomes were to improve health outcomes, retain health staff especially in rural areas, and demonstrate the best mechanism to finance health services, which can lead to increased funds to health sectors both

from government and development partners. The general impact of this initiative could be to contribute improvement of health, improve efficiency, and reduce of risk of catastrophic expenditure.

#### **4.5 Intervention to Support Initiative**

- a) One week before starting the pilot, a two days training was conducted in intervention districts involving at least two participants from each PHCU, DHMT members and representatives of Zonal Health Management Team (ZHMT). The main topics covered during this training are: management of health facilities, how to develop a business plan, basic concept of PBF, the PBF model of Zanzibar, and expected benefits for both parties.
- b) Biannually one day conferences were conducted involving the representative of each PHCU from intervention districts, DHMTs members, ZHMTs members and the representative from the vertical programs. The objective of these conferences is to show progress and discuss challenges.
- c) The first six months of pilot the facility verification was done on a monthly basis in order to make the providers understand the concept of PBF. During these verifications the DHMTs members observe in order to use their experiences during routine supervision as to ensure the facilities' improvement. In control PHCUs the verification was performed only once at the end of the first year.
- d) Ensuring all PHCUs had all required guidelines including IPC guidelines, standard treatment guidelines, Integrated Management of Childhood Illness (IMCI) guidelines, Sexual Transmitted Infections (STI) treatment guidelines, Immunization guidelines etc. In control facilities guidelines were not given particular attention.

To ensure all districts had the same benefits the following inputs remained unchanged: salary, drugs, equipment, major maintenance, supplies, routine training, routine supervision from districts and program. During 2013/14 the

basket fund for districts was not affected as separate, additional funds were secured for PBF.

## **4.6 Verification**

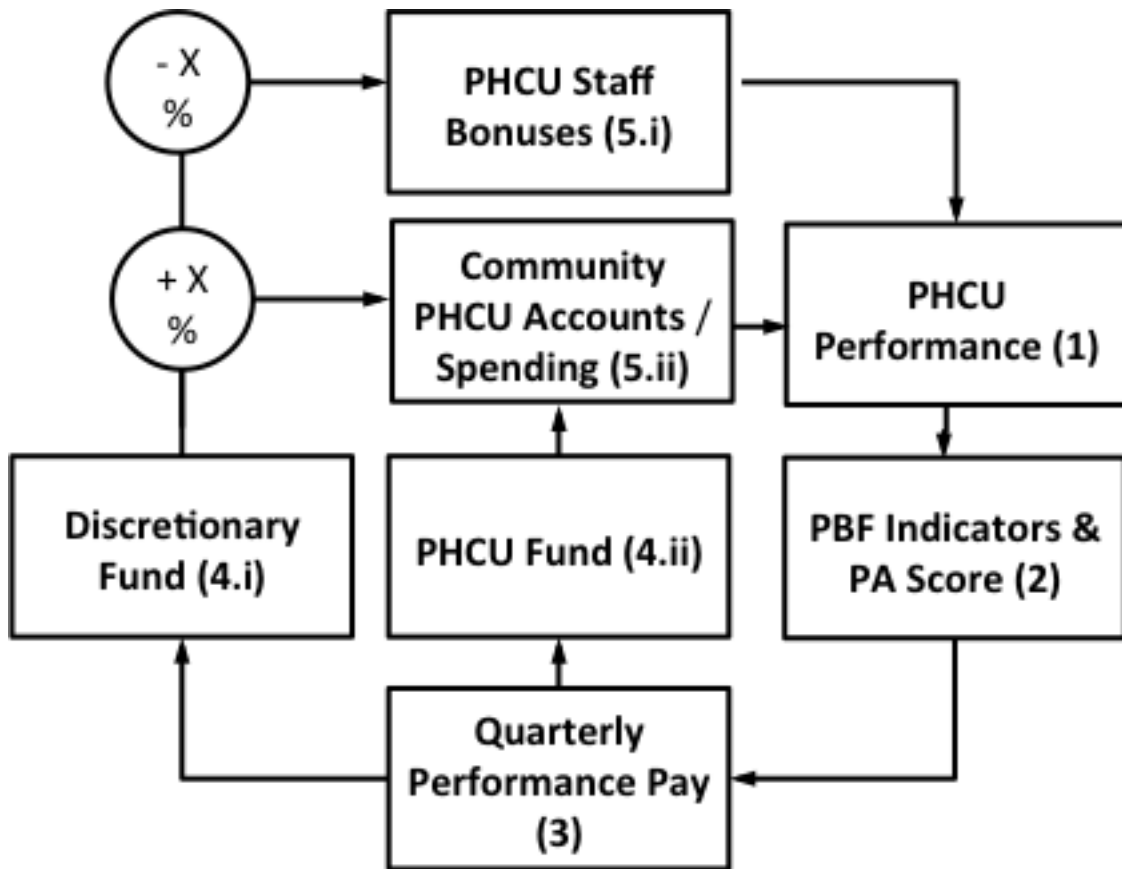
Verification is done at two levels i.e. facility level and community level. Facility verification was organized by the PBF unit, whereas the verifiers were from zonal level, central level and vertical programs. The main purpose of this verification is to validate the information which was reported by PHCUs. One of the pre-conditions which was introduced by PBF project for the facilities to be paid, was that the clients served needed to have proper records including house number and/or mobile telephone number. During facility verification, verifiers verified whether the clients/patients that the facility had reported to have served were genuine cases; and hence whether the performance payment was justified. For OPD patients the verifiers only take a sample of cases to check on adherence to treatment guidelines. For the few diagnoses that were outside of the scope of the guidelines, the decision on whether the patients were treated correctly depended upon the experience of the verifiers, which may have lead to measurement bias.

On preventive services, the verifiers check all client cases for adherence to guidelines. At the same time IPC, which was introduced for PBF, was checked and scored. During the verification day, the verifiers check the availability of materials for IPC and level of cleanness of the procedure rooms. After having completed the verification, the team established the number of clients actually served and the performance bonus to be paid.

Meanwhile, community verification was conducted only once instead of twice in the first year as planned. Community verification was intended to collect household level information including patient satisfaction, and identified false cases and discrepancies between the hospital register and patients prescription. To perform this task the professional NGO Zanzibar Nursing Association (ZANA) was contracted. A PBF unit gave ZANA specific intervals between patients to be verified in order to minimize the selection bias. The data collected was intended to be used to adjust the performance of the facility. However this has not happened due to a delay in survey results.

## 4.7 Performance outcome and incentives

Zanzibar design also demonstrates how change will occur by introducing PBF see figure 7. The performance of PHCU is measured through agreed indicators by a fee for services method. If we compare it with the target method, the fee for services method has several advantages includes: reducing fraud or false cases, applying the principle of “money follows patients”, provides good proxy of the marginal effort of providers. But on other hand others said that the method reduces people to work hard to reach the target.



**Figure 7: Flow and performance improvement**

Source: (26)

As explained before, the quarterly performance of health facilities is determined by the number of cases and quality provided (fee for services). So the health facilities have an opportunity to raise their earning by increasing the number of clients and by improving the quality of services

provided. 80% of the funds is allocated to staff bonuses and a minimum of 20% shall be used as an investment for PHCU. Depending on how investment funds are used, the subsequent quarterly performance of PHCU is determined. The skill to prepare the business plan as well entrepreneurship skills of the health staff will enhance the making of better investments for future health facilities performances. The bonus also motivates staff to perform better, thus could increase the next quarter performance.

#### **4.8 How funds are divided among the staff**

According to the PBF guide, 80% of subsidies shall be allocated for staff bonuses and a minimum of 20% shall be used as investment for PHCU. All staff are entitled to a bonus, the distribution among the staff depending upon the scale of the basic salary, retention factor (importance of cadre), working hours and staff appraisal score. The staff appraisal system is not yet established so it was not used during the 2013/14 payment.

According to information from the PBF unit, the project expenditure for the financial year 2013/14 was Tsh 218,736,150/=(USD 135,692.40)( exchange rate : One USD=1612 Tsh). The per capita expenditure was only USD 0.3 per year. The expenditure was very small when compared to the budget, see table 4. This indicates that either the budget was overestimated or there was a low performance of PHCUs. Note: This expenditure excludes running cost of fund holder and doesn't include 20% for health facility investment.

**Table 4: 2013/2014 Budget and Expenditure for PBF project in Zanzibar in Tsh.**

	<b>Budgeted</b>	<b>Expenditure</b>	<b>Balance</b>
<b>PBF Administrative Cost</b>	50,000,000/=	21,000,550/=	28,999,450/=
<b>Facility Verification</b>	50,000,000/=	40,203,000/=	9,797,000/=
<b>Bonus for staff</b>	300,000,000/=	155,032,000/=	144,968,000/=
<b>Community verification</b>	50,000,000/=	2,500,600/=	47,499,400/=
<b>Total</b>	450,000,000/=	<b>218,736,150/=</b>	231,263,850/=

## **CHAPTER V**

### **5. Trends in index indicators in PBF pilot districts versus control health facilities**

This chapter presents the effects and trends of selected indicators after one year of PBF implementation. It covers the five output indicators and two quality indicators listed in table 1. At the end of this chapter some implementation challenges of the project will be presented.

#### **5.1 Effects**

To understand the effects of the intervention the statistical techniques of difference in difference and time series analysis have been applied.

##### **5.1.1 Difference in Difference**

Only five indicators instead of seven will be analysed in this section, due to control facilities' lack of data on family planning consultation and use of partogram. The analysis was done using both absolute numbers and % population coverage. Table 5 shows the absolute number of clients/patients served in intervention PHCUs and control PHCUs before PBF (April-June 2013) and after PBF (April- June 2014). The change between the two quarters and between intervention and control is also shown in the table. At the same time table 6 shows the difference of coverage between two periods and between intervention and control PHCUs.

As shown in table 6, there is a big difference (68%) of percentage changes of OPD cases treated according to treatment guidelines between intervention PHCUs and control PHCUs. This difference was slightly lower in percentage change of institutional delivery (18%), coverage of ANC first visit within 16 weeks (10%) and immunization coverage (10%). These differences indicate that PBF has different levels of effects between indicators. The project doesn't show any effect on OPD utilization as the outpatients visit per capita in both intervention and control PHCUs remain unchanged.

**Table 5: Number of clients/patients served in intervention and Control PHCUs and its change between two period.**

Indicator	Intervention PHCUs			Control PHCUs			DID
	April-June 2013	April-June 2014	Change	April-June 2013	April-June 2014	Change	
<b>Number of children immunized (Penta 3)</b>	1147	1306	159	1112	1160	48	111
<b>Number of pregnant women attended ANC first visit within 16 week</b>	621	907	286	516	472	-44	330
<b>Number of institutional delivery</b>	394	519	125	387	398	11	114
<b>Number of OPD cases</b>	39280	38118	-1162	39657	41870	2213	-3375
<b>Number of OPD cases adhered with guidelines</b>	9784	31802	22018	15281	13884	-1397	23415

**Source:** Author' analysis from PBF verification data

**Table 6: Changes in indicators between April-June 2013 to April-June 2014 in the Intervention PHCUs and Control PHCUs in Zanzibar, Tanzania**

Changes in indicators between April-June 2013 to April-June 2014 in the Intervention PHCUs and Control PHCUs in Zanzibar, Tanzania			
Indicator	Change before (Apr-June 2013 ) and after (Apr-June 2014) PBF		Difference in % between intervention and control PHCUs
	Intervention PHCUs	Control PHCUs	
Coverage of children immunized Penta 3	7%	-3%	10%
Coverage of ANC first visit with in 16 week	8%	-2%	10%
Percentage of institutional delivery	18%	0%	18%
OPD utilization rate	0%	0%	0%
% of OPD cases adherence to treatment guidelines	59%	-5%	64%

**Source:** Author' analysis from PBF verification data and population census data

## 5.1.2 Time series analysis

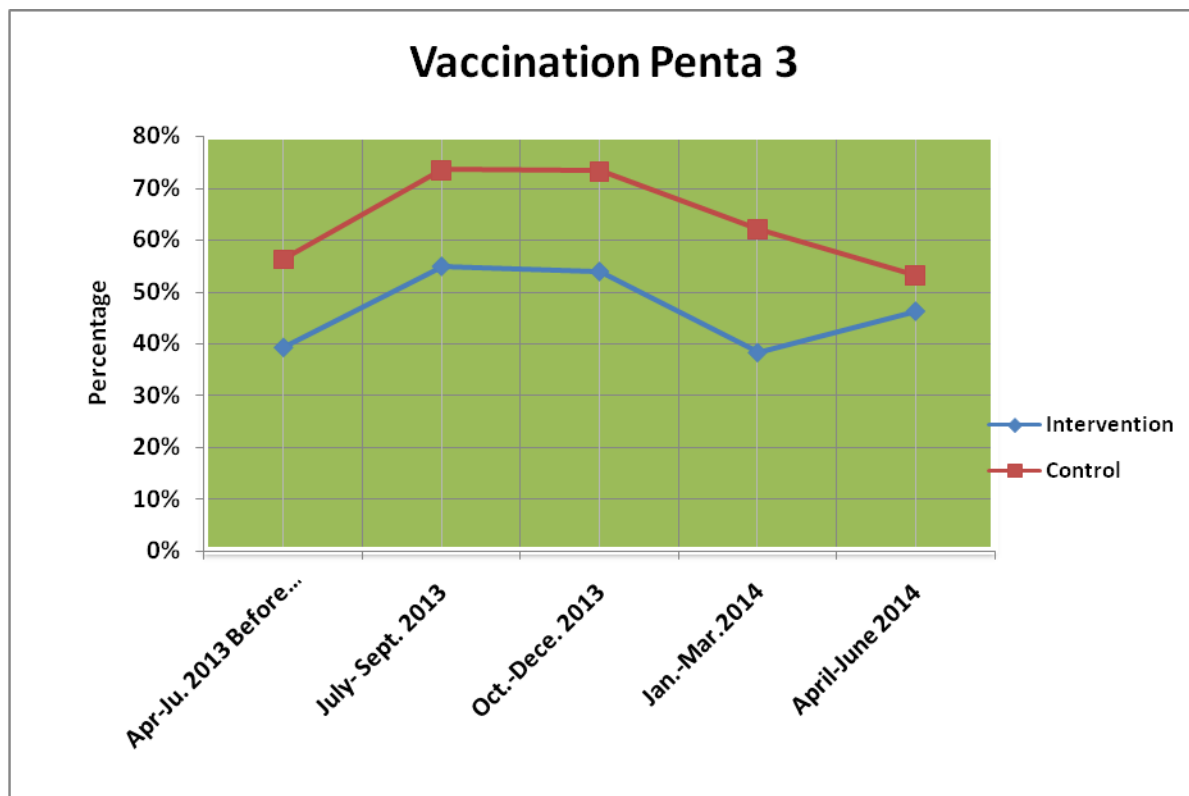
Under this section the quarterly or monthly trend of coverage from before PBF to the end of one year of implementation will be shown for five indicators. For two indicators (family planning consultation and uses of partogram) the trend will be from the month of initiation of the intervention to the end of one year of implementation of PBF. There will be no comparison to control as there is no available data.

### 5.2.1 Immunization coverage – Penta 3

Figure 8 shows that before starting the intervention, the immunization coverage was high in control facilities. Then the treatment group and control group show an initial increase (in the first Quarter of PBF implementation), but then declines (in the 3quarter). At the last quarter the gap between treatment and control diminished, which was mainly caused by a downward trend of the control group for which the reasons are unknown. The initial



difference (before PBF) between intervention and control group (more than 15 percentage points) persists for some time, but in the last quarter (1 year after the start of PBF) it has almost disappeared (seven percentage points).

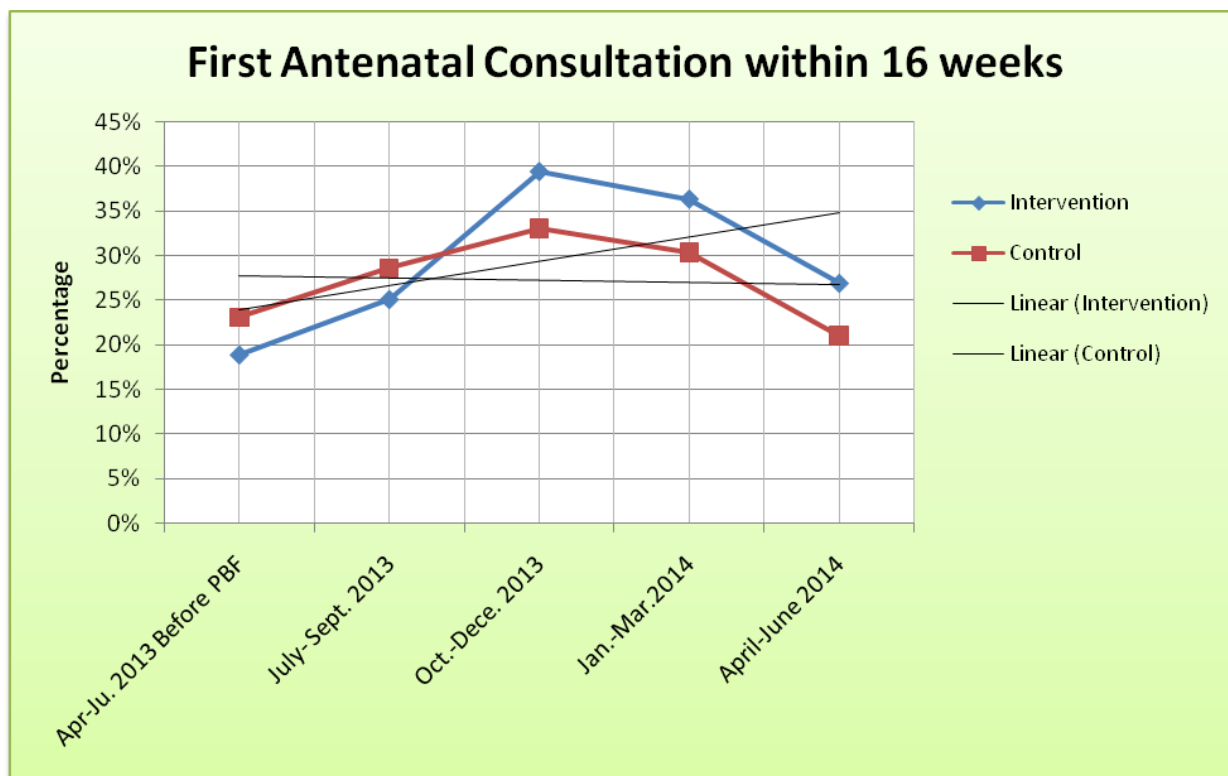


**Figure 8: Penta3 coverage in Treatment and control PHCUs**

**Source:** Authors' analysis of PBF verification data

### 5.2.2 ANC within 16 week coverage

In the first and second quarter of PBF the trend in intervention PHCUs increased sharply, even though during the following quarters the coverage declined. The sharp rise of this indicator was suspected to be due to gaming of the providers. It was not expected there to be quick changes toward this indicator as culturally Zanzibaris women don't like to disclose their pregnancy at an early stage; therefore the improvement for this indicator needs long-term community mobilization activities.

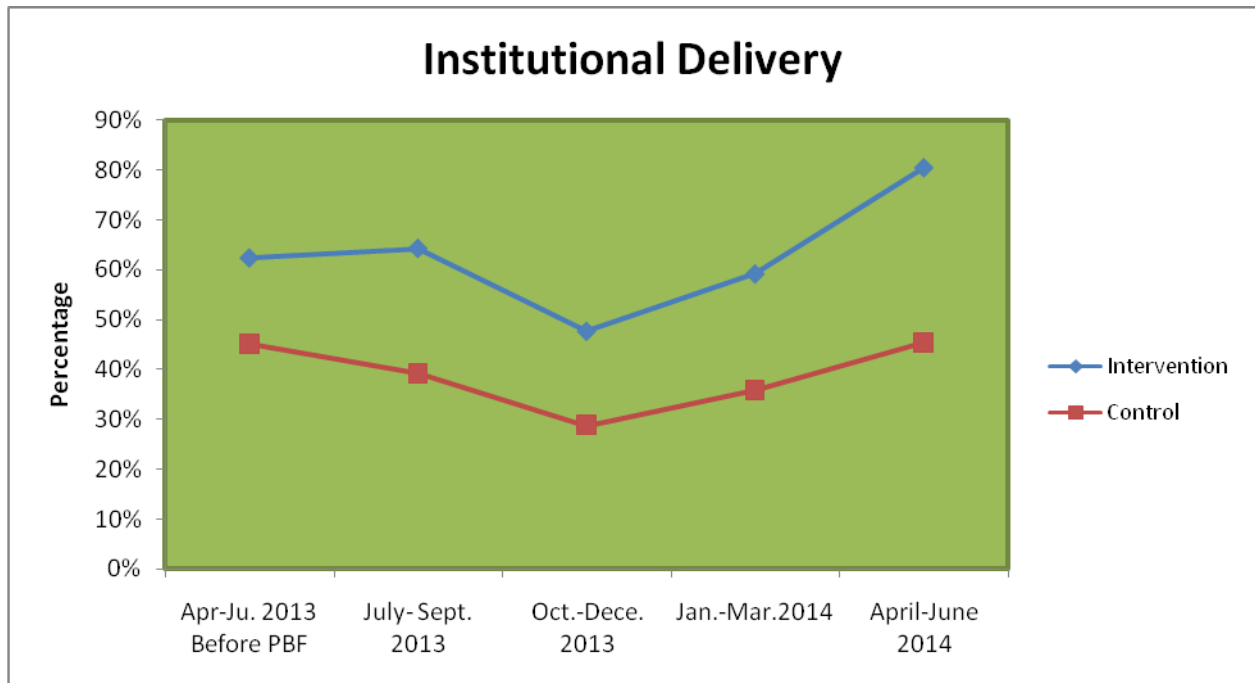


**Figure 9: First ANC coverage within 16 weeks in treatment and control PHCUs**

Source: Authors' analysis of PBF verification data

### **5.2.3 Institutional delivery**

After the second quarter of the project implementation, the coverage of institutional delivery has shown an upward trend and was thus promising to reach the sector goals see figure 10. The difference of coverage at the last quarter between treatment and control PHCUs has been dramatically increased (35%) due to sharp increases of participating facilities. The significant amount of price paid for this indicator might be the reason for this growth.

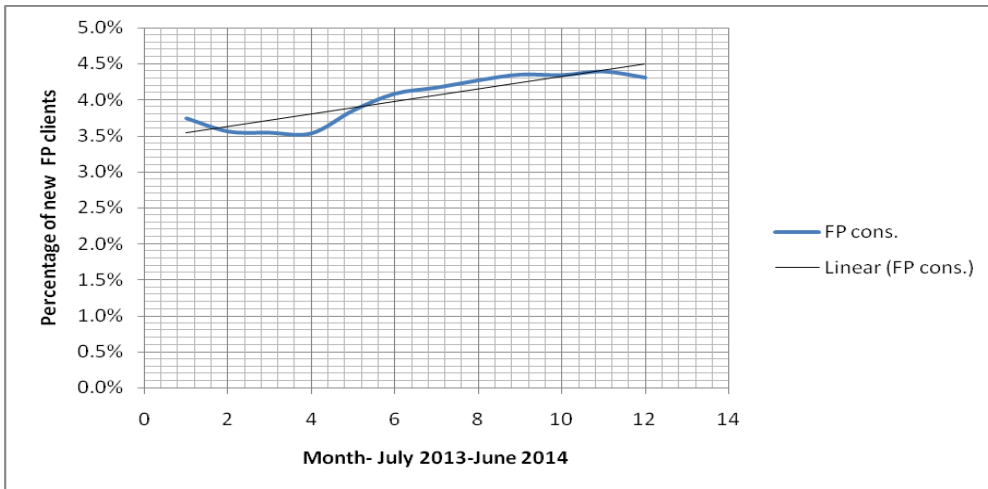


**Figure 10: Percentage of institutional delivery in treatment and control PHCUs**

Source: Author’s analysis of PBF verification data

### 5.2.4 Family Planning consultation

The contraceptive prevalence is one of the indicators in which the Public Health System in Zanzibar doesn’t perform better than other indicators. The subsidies paid for the new consultation for short term method is USD 1.1, and USD 3 for long term method. While normally there is no stock out of the contraceptives at facilities, it is expected that the utilization of this indicator would grow quickly. However, this was not the case as figure 11 shows a very slow growth. The reasons could be that the provider-client relationship didn’t improve as expected, a shortage of human resources for health in the facilities, or a human resource for health perception barrier.

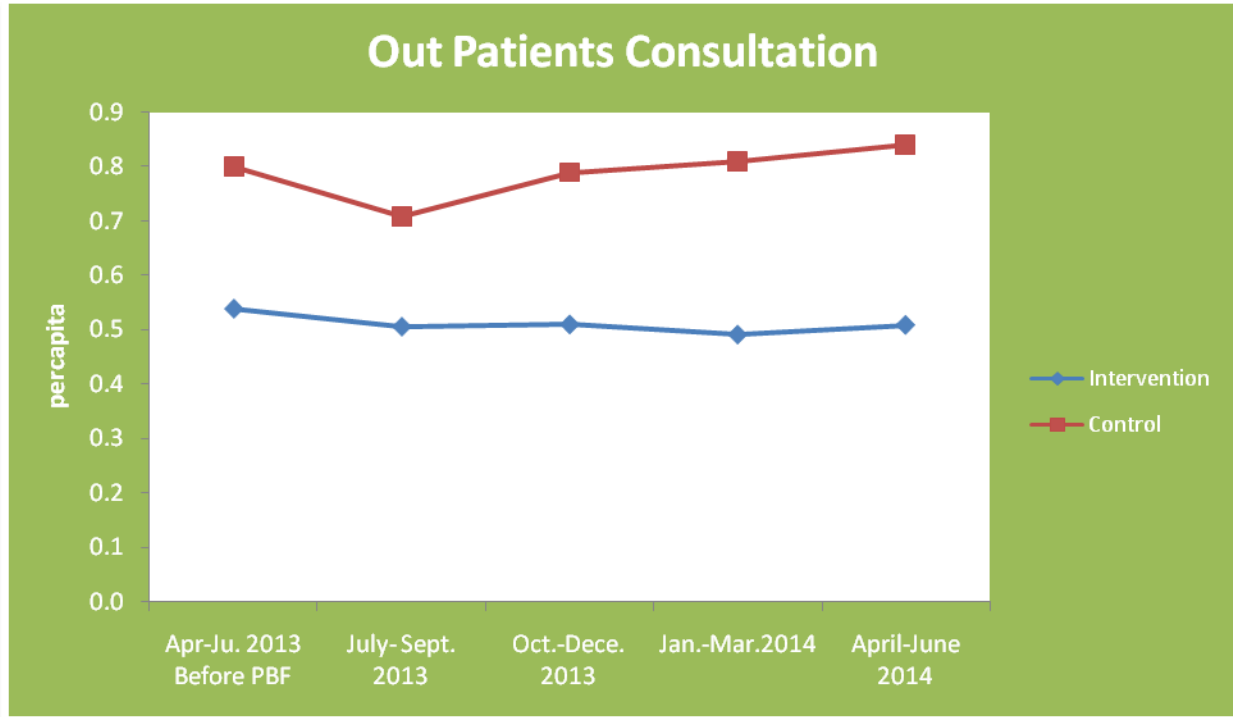


**Figure 11: Family planning consultation in intervention PHCUs**

Source: Author’s analysis of PBF verification data

### 5.2.5 OPD utilization rate

Throughout the financial year 2013/2014 OPD per capita remained the same (0.5) in intervention districts and slight increased in control facilities see figure 12. At national level the OPD visits is one per capita, which is lower compared to other countries, yet inline with ZEHCP target(4). It is not fair to compare the national level to the areas of the projects, as PBF doesn’t involve private dispensary. The reasons for stagnation of OPD per capita in intervention districts could be ; that the provider-client relationship didn’t improve as expected or perceived quality of patient was not improved or an improvement of proper recording of patients.

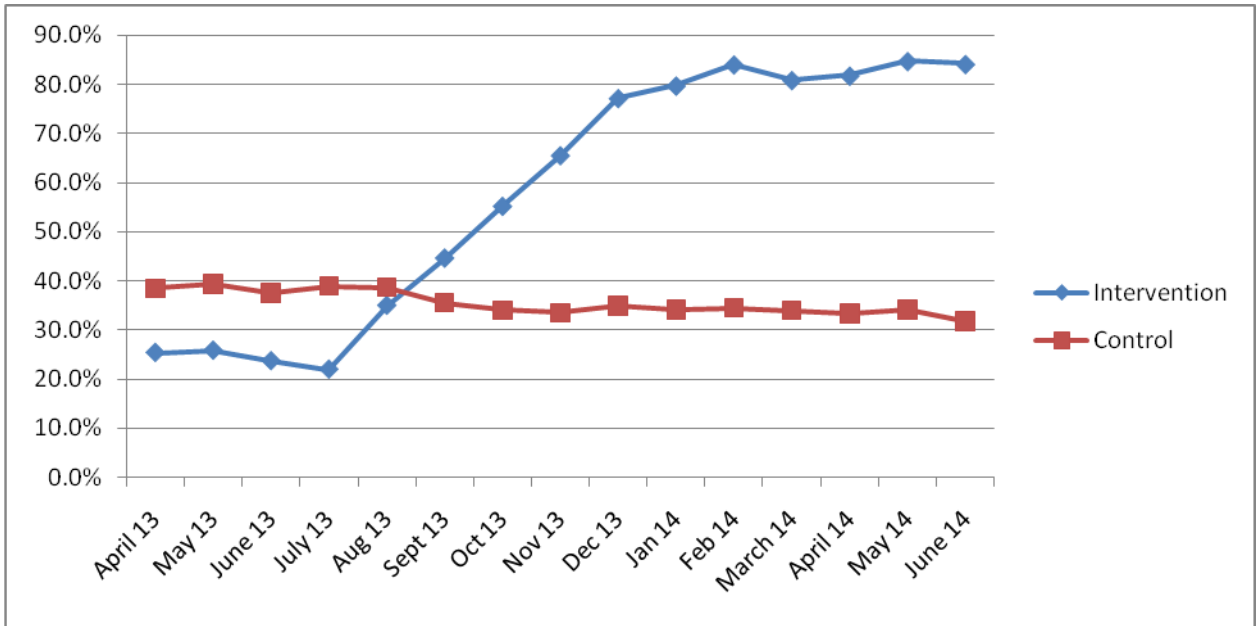


**Figure 12: OPD utilization rate**

Source: Author's analysis of PBF verification data

### **5.2.6 Percentages of OPD cases treated according to treatment guidelines**

The percentage of patients treated according to guidelines increased by almost 300% from baseline, see figure 13. The PBF started on July 2013 where the percentage of OPD cases treated according to guidelines dropped by 2% as compared to June 2013, while from August 2013 a sharp increase was noticed which reached its peak (84%) on February 2014. The drop of the percentage in July 2013 was mainly due to mistrust of the providers until they saw the verifiers came for verification on August 2013, from which moment onrising trend can be noticed.

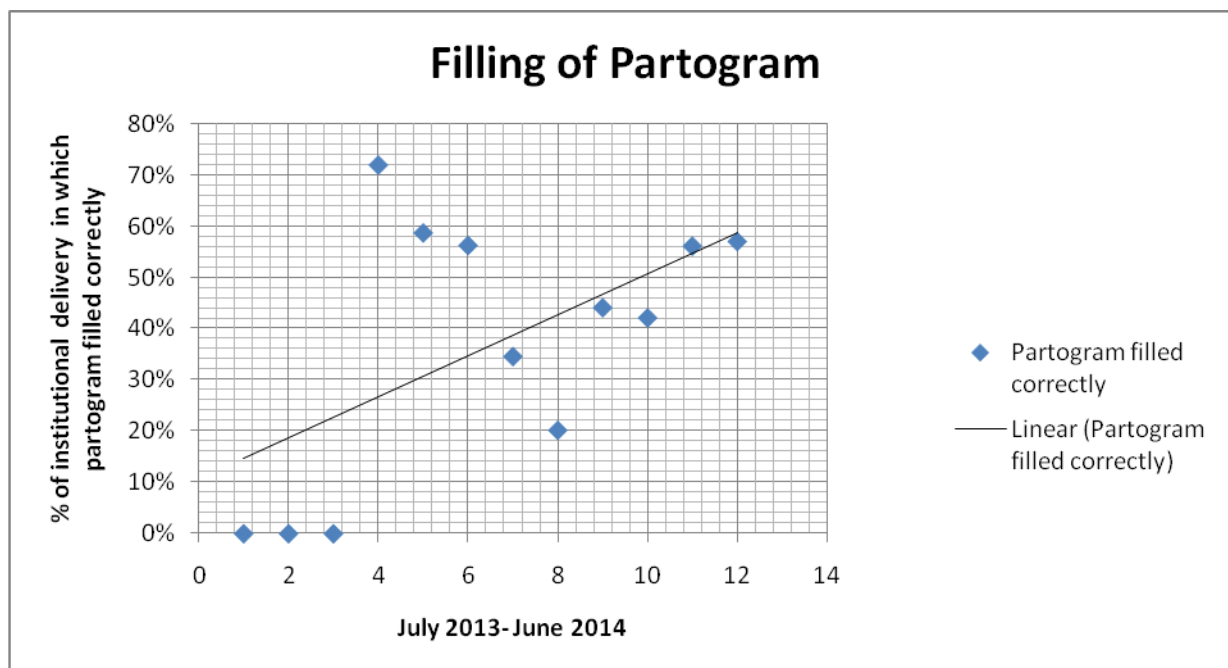


**Figure 13: OPD patients treated according to guidelines in treatment and control PHCUs**

Source: Author’s analysis of PBF verification data

### **5.2.7 Percentage of institutional delivery which filled partogram correctly**

Another quality measure targeted by the project is the use of partogram to monitor labour. Figure 14 shows rapid increase of the use of partograms from October 2013, before which three month had passed without any improvement. The delay of availability of partograms and staff training on its usage were reasons for failure of improvement in the first three months. The correct filling of partograms might contribute to the increase of institutional delivery.



**Figure 14: Uses of partogram during delivery in intervention PHCUs**

Source: Author’s analysis of PBF verification data

### 5.3 Challenges

Under this section some implementation challenges and weaknesses of the Zanzibar scheme will be presented: they are mostly related to the fact that certain procedures were not adhered to – partly because of start-up problems of the PBF pilot.

#### 5.3.1 Delaying on payment

According to the design of the scheme, the subsidies have to be paid on a quarterly basis, however in reality the payment was only done biannually. The delays of payment especially at the beginning of the project may have reduced the trust of the staff in the scheme. There are two main reasons for these delays;(1)Delaying of verification and data processing;(2)Delays in government financial procedures.

#### 5.3.2 Opening of facility bank accounts

One of the prerequisites for releasing the 20%of subsidies was for every PHCU to have a bank account. This was among the reformations proposed by PBF, but was not executed due to failure of MoF to give permit MoH to allow opening of that bank accounts. This brought several consequences

about, including poor implementation of the business plan and perhaps a reduction in the performance of facilities.

### **5.3.3 DHMTs no bonus**

During the first year of implementation, the scheme doesn't provide any benefit to district health management teams. This may demoralize the motivation of district teams in terms of taking their coaching responsibilities toward PHCUs.

### **5.3.4 Lack of fulltime local technical staff for PBF**

Though a PBF unit was established, this unit was also burdened with other responsibilities. At the same time none of the staff of the PBF unit had basic knowledge on PBF, which made the unit dependant on members of other departments and external staff regarding the implementation of PBF activities. This issue contributed to delaying of verification, data processing and payment.

### **5.3.5 Failure to formulate Steering Committee**

According to Zanzibar PBF design the Steering Committee is the uppermost body for policy making decisions. The design suggests that the committee should be composed of senior officials from the Ministry MoH, MoF and civil servant Department. Absence of this committee can have several consequences to pilots including; resistance on implementing proposed reforms, such as opening bank account for PHCUs; reduction of the ownership of the scheme to decision makers; introduction of the risk in sustainability of the project.

### **5.3.6 Absence of clear monitoring mechanism for objective (c) and (d) of the project**

Retention of the staff is among four objectives of the project, but the design doesn't establish any mechanism to measure the progress of these objectives. The project doesn't provide an insight in the number of staff before the intervention, how many were deployed during the project, and in the attrition rate in treatment facilities as compared to the control facilities.



Another objective was to demonstrate value for money, where again the project doesn't monitor the amount spent per indicator. Due to the previously stated it is difficult to conclude the success or failure of the project objectives (c) and (d).

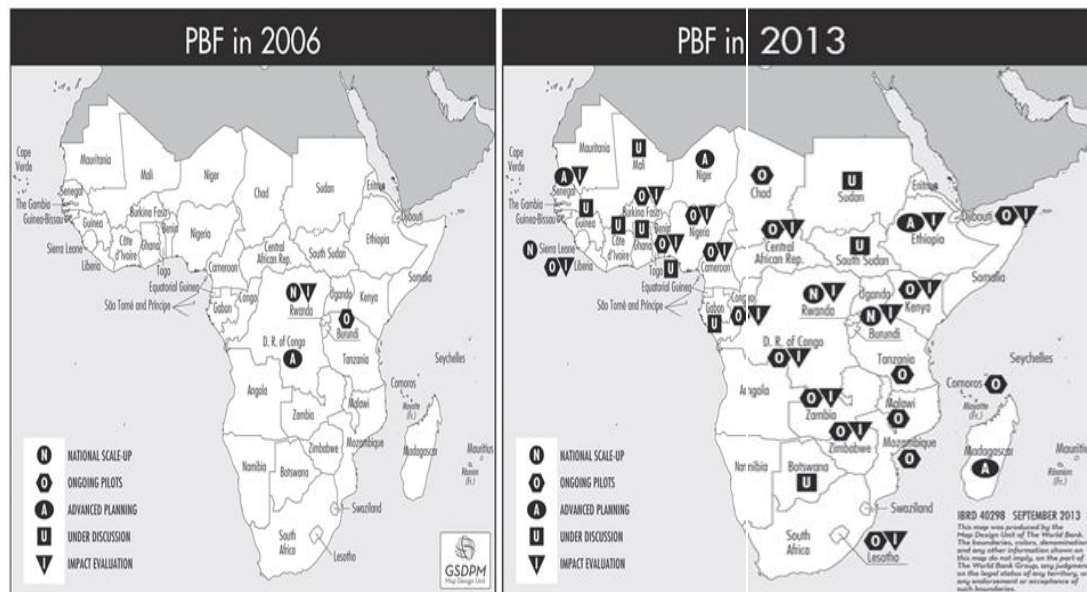
## **CHAPTER VI**

### **6. Experience of other countries on PBF**

#### **6.1 Why and how countries in sub-Saharan Africa established PBF in the health sector**

In the last decade Performance Based Financing has gained popularity in low and middle income countries and it has been promoted as a promising strategy to facilitate the attainment of health sectors goals and targets including MDGs (35). As compared to only four countries in 2006, in 2013 at least 35 countries in Sub Saharan Africa either employed PBF on a national scale up-3, under pilot-17, advanced planning-6, under discussion or under impact evaluation-9 (23) see figure 15.

The UN Secretary General advocates that “Innovative approaches to financing are urgently required to meet the health needs of the world’s women and children. Results based financing can improve the quality and efficiency of services and, just as important, enhance equity”(35).The increased availability of technical and financial support from donors, especially the World Bank, facilitates the process of piloting or scaling up this intervention. In 2013 the World Bank alone allocated 1.3 billion USD to be spent by 2015 through PBF to improve women and child health (36).



**Figure 15: PFB in Sub-Saharan Africa in 2006 and 2013**

Source: (23).

The link with national ownership and buy-in from national authorities from the start, are central to the success of PFB. The reason for this is that this might encourage the central level to produce the required support to the lower level, and also might facilitates evidence based planning and better allocation of resources at all levels. Also having national ownership allows for an easy translation from project to programs that require changes in policies (37). One of the lessons learned of PFB success in Rwanda is strong leadership and political will are crucial in implementation of PFB (37,38).

In Tanzania mainland, PFB was introduced since 2008 and the recent (2011) pilot in the Pwani aim was to test its effectiveness on improving the performance of health services, which can accelerate the accomplishment of MDGs 4 and 5(39,40).

Burundi’s Ministry of Health mentioned PFB in their strategic plan of 2005 and introduced the first pilot in 2006. It aim to shift from input based system to output based system by rewarding health workers financial incentives that could motivate them and improve their performance, which would lead to an overall improvement of the health system performance (41). In 2010 the

Ministry of Health in collaboration with donors decided to scale up the scheme (42).

Similar to Rwanda, the first pilot in Butare district had an assumption to shift to output based system as the existing input-based or process-based payments were not powerful enough or even contradictory with regard to health challenges in rural Rwanda. But also rewarding a health facility according to its number of nurses does not create a strong incentive for efficient use of human resources, and it was found that process payments such as per diem for training were even less productive (43). Following the success of this pilot, which was funded and implemented by a NGO, the government decided to implement a national PBF scheme to improve utilization and quality of key services by supplementing primary health care centers' input-based budgets with bonus payments (44).

In Uganda the first PBF pilot was done in 2003, and emerged after the Health Sector Strategic Plan mid-term review, which recommended that, there is need to conduct a study to justify if contractual arrangement would improve access to the minimum health care package for the poor and most vulnerable. (45).

## **6.2 Contract with Indicators**

Meessenet al, concluded that poor health system performance in many low-income countries to a large extents is likely due to inadequate institutional arrangements (46).It has been pointed out that success of PBF depends on the predictable and systematic way that a clearly expressed contract is set up and agreed upon between the local fund holder and the health providers (37).

When describing contract PBF indicators it is important also to understand what indicators were chosen and how they were priced. In Butare pilot in Rwanda, the indicators were chosen according to public health expertise, and the price was determined according to priority of the indicator and its coverage (44). In Burundi the list is so comprehensive and encompasses all activities of Minimum Package activities as defined by MoH, and it comprises at least 42 indicators for the level of health centre (42). Basinga et al

concluded that the P4P scheme in Rwanda had the greatest effect on those services that had the highest payment rates and needed the least efforts from the service provider (47).

### **6.3 Actors**

Berton et al shows that, the institutional reorganization was successful in limiting conflicts of interests and clarifying responsibilities. The study concluded that institutional arrangements do matter in influencing the performance of an organization as they define rules, rights and incentives within the system (48). At the same time, one of the identified factors for failure of PBF in Uganda was that, the designer of the scheme failed to regard and include important actors like purchasing agents, who influence outcomes but are not directly included in the change process (49).

It was also reported that the compliance with a split of responsibility among the actors ensured that judgment on the results and decisions on the incentives are impartial (37)

### **6.4 Autonomy**

The level of autonomy of the health facilities was considered a basic principle for success of PBF as this will rise to entrepreneurship skill and innovative activities (50). On the other hand it was found that the autonomy of providers was mainly constrained by close coaching and the mandatory use of planning tools, which represents a form of enforcement by the purchasing agent (48). Toonen et al, based on experience from Sub Saharan Africa PBF schemes, concluded that the level of autonomy of providers to develop their own strategies for achieving the agreed indicators improved their accountability to the results (37)

In Uganda, although the scheme didn't generate better outcomes, one of the lessons learned from the pilot was that by granting autonomy to health facilities in financial decision making, this appears to have had a positive impact on health service provision (45).

Furthermore, it was found that the autonomy encouraged entrepreneurship and better utilization of resources. It was reported that the facility fund was

utilized for infrastructure and equipment, thus addressing a major constraint to performance (51)

## **6.5 Performance Payment**

Morgan L. mentioned that one of the reasons for failure of Uganda's PBF pilot was that the incentives may have been too small and don't match the government salary increase of 14-63% during the same period. According to design the maximum performance bonus could reach 11% of its base grant. Also it was found that the arrangement of bonus structures were too complex to understand and implement (45).

The productivity study conducted in Rwanda found that the staff are more productive in output based systems than in input based system, as they have more control over the quantitative production of their health centres, and if the incentives are increased, staff productivity can be much higher (52). Another study in Rwanda found that the majority of staff interviewed agreed that by introducing PBF their motivation increased, staff absenteeism reduced, team spirit was fostered, and effort for quality services was increased. This was mainly related due to the staff's perception that their work is appreciated, and due to increased incentives (51). On the other hand the same study found that though the PBF scheme improves provider- client relationships, yet the patients capacity to negotiate the quality of services reduced, which could result in a reduction of patient perceived quality and utilization (51).

To understand the size of bonuses and how they were divided among staff is crucial. An average bonus was found to range between USD20- 30 per month per staff member (53). Manongi et al found that thirty-two per cent of staff interviewed, altogether denied the usefulness of P4P and proposed to just "trust medical staff instead"(54).

## **6.6 Capacity Building**

A study at Rungwe Tanzania found that PBF training facilitated in the improvement of performance and motivation of staff, and authors concluded that the training acted as leverage for initiating innovative and proactive

actions. Among the outcome of training results are: administrators developed a job description for each cadre; health facilities developed their quarterly business plans, managers of hospitals and health centres improved their advocacy and lobbying skills; and all health centres improved their financial transparency and accountability by developing new recording and reporting financial tools (54).

## **6.7 Verification**

Both facility and community verification play an important role in PBF implementation. Independent verification is vital and needs to be carried out by other stakeholders, not providers exclusively (37). Another study shows that by engaging CBOs in community verification the accountability increases (55).

## **6.8 Supervision**

Coaching, i.e. the provision of technical assistance, support and guidance to the providers, plays a key role in activating and boosting staff motivation, and is supposed to be one of the 'hygiene' factors to avoid workers' dissatisfaction—Hertzberg et al. 1959; Franco et al. 2004) (48). Kalk et al findings show that the supervision and quality improvement measures play an important role in the success of the scheme (51).

## **6.9 Additional resources**

The health professionals working in Pwani PBF pilot in Tanzania recommended that shortages of resources (health staff, drugs), weak infrastructure and unfavourable community perception can negatively affect their performance and they suggested to the government to find means to reduce these challenges (39)

## **6.10 Evidence on effectiveness on utilization and quality of services**

To summarize the effects of PBF from Sub-Saharan countries, these evidences have been classified into four categories i.e. curatives services,

reproductive health services, Preventive services and quality of services provided.

### **6.10.1 Curative Services**

The common indicator used in many studies is OPD utilization. A study in the Democratic Republic of Congo-DRC reveals that the outpatient visits per capita increased from 0.06 in 2005 to 0.3 per capita in 2007, following the introduction of PBF. (56). The World Bank found that the utilization rates increased from 0.4 per capita in 2005 to 0.7 in 2007 (57)

### **6.10.2 Reproductive health services**

Witter Sophie found that assisted deliveries rose from 25 % to 74 %. (56). Soeters et al found that institutional delivery increased by 21% in the control group compared to treatment districts (58). Compared to control groups there was no impact on women completing 4 ANC visits, however an increase of 23% in the number of institutional deliveries was observed (47). In WB study Rwanda Contraceptive prevalence increased from 7 to 28%, and assisted deliveries increased from 29 to 52%. (57) There was no significant improvement for the number of ANC first visit within the first trimester (59).

### **6.10.3 Preventive services**

Witter Sophie found that measles immunization coverage increased from 25% to 92% (56) and Rwanda immunization (DTP3) coverage increased from 83% to nearly 100% (57). But Basinga et al found that in comparison to the control group there was no impact on child immunization (47). No improvements were seen in the number of children receiving full immunization schedules (59)

### **6.10.4 Quality of services**

An increase of 0.157 SD (95%CI:0.026-0.289) in prenatal quality as measured by compliance with Rwandan prenatal care clinical practice guidelines has been found (61). There was a marginally significant ( $p = 0.065$ ) increase of six percentage points in the probability that a mother reported to have had her BP measured at least once during her pregnancy (59)



## **CHAPTER VII**

### **7. Discussion, Conclusion and Recommendation**

#### **7.1 Discussion**

Under this subsection the detail discussion of findings from literature review, Zanzibar PBF model and its one year results were undertaken.

##### **7.1.1 Outcomes**

PBF has been implemented in many sub-Saharan countries as a pilot or national scale up, and its effectiveness has shown diverse results. The same indicator showed different effects in different studies. In this study the one year trend shows some promising results for some analysed indicators.

This study shows that PBF has a slight effect on number of institutional deliveries coverage of immunization Penta 3 and ANC first visit within 16 weeks. The effect has been observed in improvement of quality of care provided specifically on adherence to treatment guidelines for the outpatients and filling of partogram for institutional delivery. However, the project doesn't show any effects on increasing of OPD utilization; the OPD visit per capita remain the same (0.5) before intervention and even during the implementation of the intervention. The same is true for family planning consultation as its trend doesn't shows potential effects.

Generally, the promising trends observed were greatly attributed by bonuses. The initial excessive control to the participating facilities i.e. monthly verification can also be associated with this success. Additionally, the involvement of staff from vertical programs during verification was useful as these are highly respected by PHCUs providers, thus could be linked with provider's behavioural changes. Moreover, the biannually meeting to review the progress per facility and discuss the challenges of the project has attributed to these successes.

Rusa L. et al, concluded that the services which were disorganized before the intervention were easy to change (53). Bonfrer I. et al found that PBF has a quick effect to the services which required provider's behaviour changes while the patients were already in health facilities (59). The findings of these

two studies (53,59) resemble with the remarkable finding of this study regarding the adherence to treatment guidelines and the uses of partograms. Before intervention there was no effective mechanism to monitor and ensure that the prescribers adhere to guidelines when they attend their patients, and at the same time partograms were not used in PHCUs. The 25% of adherence to treatment guidelines observed before implementation of PBF can be concluded as by chance, since the experience shows that the type of cases which adhered with guidelines varied between facilities which indicated that this depends upon the capacity of the individual prescriber.

Both intervention and control PHCUs received the supervision from DHMTs. One purpose of these supervisions is to provide technical support to providers on services provision. It seems that these supervisions have little effect in improving the quantity and quality of services. Figure 13 showed that the percentage of patients treated according to guidelines remain almost the same in control facilities. However, in the PBF facilities where both supervision and verifications were received, a sharp increase of adherence to treatment guidelines was observed. This requires for action in terms of understanding why DHMTs supervisions have little effect on changes of provider's behaviour.

The increase in the percentage of patients treated according to guidelines, which is perceived as a success of the project, in actuality is only part of a technical quality. The project is ensuring the corresponding of diagnosis with treatment, however, it doesn't find out how these diagnoses were reached, which is a very important part of technical quality. It is also important to understand why the number of patients decreased compare with before and during intervention; is it because of effective treatment suggesting there is no re-attendances, or because the perceived quality was not improved resulting from the patients' use of other providers (drug shops), or is due to an improvement in data record keeping?. This decrease in the number of patients was not expected by the project and it differs from other studies' findings, urging the project to find out the underlying reasons.

### **7.1.2 Factors that determine success or failure of PBF**

The finding from Sub Saharan studies justified that the national ownership and buy-in from national authorities from the start of the project are central to the success of PBF. In the case of Zanzibar, this success fortunately has happened; the development of Zanzibar scheme involved all important stakeholders and was approved by the highest MoH body i.e. executive committee. Also in Zanzibar HSRP III, PBF was mentioned as an option to facilitate the attainment of the objectives of the plan; this is also was the case in Burundi and Rwanda.

The failure of MoH Zanzibar to formulate the steering committee to monitor the pilot could hinder more support from senior officials especially during scale up. Also, this could delay or even hinder the approval of the reform required to be made by civil servant departments and MoF to facilitate the implementation of PBF in National scale up. The formation of policy to support PBF at the civil servant department is important for National scale-up of the scheme.

One of the key factors which determine the success of PBF is the institutional arrangement, including division of responsibilities among the actors. Meessen et al, concluded that poor health system performance is almost likely due, to a large extent, to inadequate institutional arrangements (43). It must be clarified who is doing what, what the relationship is between the actors, how contract is made between providers and purchaser, and the expectation of the provider should be clear and open. If all parties involved in PBF understood their responsibilities and benefits, this might increase the clarity and improve transparency and accountability which will ultimately increase the utilization. In the Zanzibar PBF model, this was not given enough attention especially during the first year of implementation; no separation of responsibilities between the actors was made.

To establish new institutions in a stable health system is difficult and may take a longer time. In countries like Rwanda, Burundi and DRC it was easy to establish purchasing agents outside of the normal health system, where private organizations like Cordaid were contracted. There are some arguments that PBF is doing well in countries with conflict or unstable situation in comparison to stable countries. Another important observation related to the establishment of purchasing agents is the type of providers

leading the services provisions. In countries like Tanzania mainland and Uganda, private providers (religious organization) took almost half of the services provided, which facilitated the establishment of private purchasing agents during their PBF pilot. In the case of Zanzibar, being a stable country, private providers play a small role, especially in rural areas, as it may take longer for the government to understand the importance of establishing separate independent purchasing agents.

The level of autonomy of providers is also an important component of PBF. Some studies found that autonomy of providers stimulates better utilization of resources, and increases accountability, entrepreneurship skills and innovative activities. On the other side Berton et al, found that the level of autonomy, including development and implementation of business plans, is just an enforcement mechanism of PBF nothing special on it (48). Zanzibar PBF doesn't put enough emphasis on this component. The business plan remained as an important part for the success of PBF. However, in Zanzibar business plans were developed only once and no follow up was done in order to understand its implementation and progress. Also the government policy on decentralization and financial regulations is an important concern prior to introducing PBF reforms. It is clear that the obstacles for PHCUs in Zanzibar pilot districts in opening bank accounts was a limitation of the Zanzibar government financial policy and regulations.

Taking into consideration the findings from the literature and Zanzibar PBF design, it is clear that to determine the amount of bonuses per staff or payment per indicator is difficult and cannot be compared between countries. It is not easy to determine whether the price of an indicator is high or low by just comparing between countries. It is important when you set the price or amount of bonuses to consider the salary of the staff, the salary at private practice, and other opportunity costs of the providers. These will improve intrinsic attractiveness of the PBF. Also some findings suggest that for better improvement, the important indicators should have high weight or in other words the higher the price the higher the performance. But care shall be taken when pricing the indicators as this may end up in distortion. Also if care is not taken during division of bonuses per individual staff member, this may distort the spirit of teamwork.

### **7.1.3 Adverse Effects**

Distortion is one of the risks of the Zanzibar scheme, meaning that providers might ignore services which are not rewarded with a monetary incentive. The best examples of such services are all services under the component of health promotion and diseases prevention, while in this area there is no indicator selected for payment. The environmental health officer whose main responsibilities lie under this component might shift his job and assist in doing clinical services. As a result activities like inspection of premises, environmental sanitation, school health and community health promotion will be less prioritized and might be forgotten.

Gaming is another risk of the scheme, a provider might over-report in order to increase incentives, e.g the provider might fill the partogram after the mother has been discharged or delivered; prescribers might register fake patients; prescribers might write the correct treatment in the register but incorrectly in the patient's prescription book. Although the project has a mechanism to do community verification, experience shows that this is performed once a year, which doesn't lead to a solution of the problem. Even so, for some indicators it is difficult to understand the legitimacy in conducting community verification, e.g. the assurance that a pregnant woman attends the first ANC visit within 16 weeks of pregnancy.

Although payment mechanism used in Zanzibar PBF i.e. fee for service, has a stronger argument compared to payment by target used in other countries, MoH Zanzibar should find other ways to make providers reach their target which is a main objective of the scheme. The payment mechanism used may make the providers to be satisfied with the incentive they got, even though the target is not reached. If the scheme would set a special bonus for PHCUs which reached the target, this might overcome this challenge.

Sustainability is another risk which is faced by the PBF scheme in Zanzibar. Experience from Rwanda and Burundi, where PBF is in national scale up, shows that the governments were highly committed to the scheme. So when they want to scale up their government reviews their policies and their allocated fund for PBF, their schemes were partially funded by governments. In Zanzibar this might be a challenge, as involvement of senior officials from

MoH and other ministries is at low level. Another sustainability issue in Zanzibar is on capacity, where there is limited domestic human technical capacity to run the project, which means that if the MoH decide to scale up the project its implementation will face human resource challenges.

Coercion is another risk which needs to be considered in Zanzibar. Coercion implies that the clients might be pressured to accept services to increase incentives for providers. Family planning consultation could be one example; the providers might pressure the clients to use long term methods of family planning instead of short term methods, because they will earn more money this way.

#### **7.1.4 Limitation of the study**

- In literature review the study only used papers published in English.
- This study involved a midterm review of the project, only one year after the start of the pilot, thus the result might become more visible in year 2 and 3 of implementation.
- Moreover it was not possible to evaluate the progress of all four project objectives due to lack of required data. Instead it covered only parts of two project objectives (1 &2).
- Lack of comparison data from control for some indicators e.g. family planning consultation and filling of partograms.
- The study used secondary data from verification processes; this might have been influenced by measurement bias.

## **7.2 Conclusion**

Zanzibar health system, like other Sub-Saharan countries health system, needs new initiatives to boost its health system performance. The PBF which have been piloted in West and Mkoani Districts in Zanzibar could be the right choice as it shows promising outcomes for some indicators. It is important for the MoH planners to consider that PBF is not comparable between countries as evidence shows that the design is different, the implementation is different, and the context is also different, wherefore Zanzibar shouldn't depend upon these other countries' evaluations. In other words, to understand the effectiveness of Zanzibar PBF an independent evaluation needs to be conducted after a period of at least three years of

implementation of the pilot, which should be followed to by the decision to scale up or not.

When comparing the Zanzibar model and its one year implementation experience to basic principles of PBF, the Zanzibar model has serious design and implementation problems that might reduce outcomes of the project. To mention a few examples: the business plan was not actually implemented as 20% of the incentive which was intended to fund the plan was not disbursed up to the end of the first year due to failure to open PHCUs bank accounts; coaching was not so effective as DHMTs members were not part of incentives; no independent organization was hired as purchasing agent, while the functions of purchaser were performed by PBF unit. Indeed the absences of independent purchaser removed the distinct feature of PBF of separation of functions between provider, regulator and purchaser.

The identified risks which faced the Zanzibar PBF scheme might distort the intention of the project; some of these risks might decrease the outcomes as well. The MoH needs to find the right approaches to minimize the effects of these risks and develop proper methods to monitor.

Generally, regarding to its one year implementation and other countries' experiences, I think PBF could help to boost the Zanzibar health system performance and achieve its goals including improving efficiency. Although there is no pay for performance culture in Zanzibar, the health sector could serve as a role model and other sectors could follow. This culture could also improve accountability and transparency which is one of the problems in the public sector.

### **7.3 Recommendations**

From the findings of this study the author recommended the following as the way forward for PBF in Zanzibar

#### **MoH central level**

1. Establishing Steering committee for PBF and involve all related sectors eg. MoF, civil servant department
2. Offer one week PBF training to key staff of the Ministry and some domestic NGOs to build capacity

3. Hire the domestic or international NGOs such as D-Tree International, Zanzibar Outreach Program etc, to perform the task of purchasing agent at least once a year to verify the validity of the data from verification exercise.

### **PBF unit**

4. Ensure that the basic components of the Zanzibar PBF design are implemented which include:-
  - Establishing PBF incentives for DHMTs
  - Development and implementation of a quarterly business plan
  - Opening of Health facility bank accounts
5. Revise the list of indicators and include the indicators from health promotion and diseases prevention area e.g. number of new latrine constructed, number of community meetings conducted, number of school health screening conducted etc.
6. Periodic revise of the price of indicators to reduce imbalances e.g. increase the price of consultation of short time family planning methods
7. To facilitate the target of coverage it is important to establish a special bonus to the facilities which reach its target eg the facility reach target could given 10% of their subsidies.
8. Establish monitoring mechanism for the objective 3 of the project (Retention of the staff at rural areas)

### **Research**

9. Conduct independent evaluation of the project to determine its effectiveness before scale up
10. Conduct study to evaluate effectiveness of DHMTs supervision to providers.



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## Annex

### Annex 1: Indicators and its price .

Exchange Rate : One USD=1612 Tsh in 2013/2014

Num	Number of Cases		Number of Quality Cases	
	Indicator	Price in Tsh	Quality Criteria	Price in Tsh
1	OPD Consultation: OVER 5 years old	448	According to STG, Malaria	896
2	OPD Consultation: UNDER 5 years old	448	According to IMCI Guideline	896
3	OPD Consultation: STD, diabetes, hypertension, mental health, epilepsy	1,064	According to STG, STI	2,128
4	Minor surgery (including circumcision, incision, suturing)	1,176	IPC guidelines completed	2,352
5	Cases with 3 symptoms referred/ tested for AFB: Persistent cough, evening fever, weight loss 10%	4,648		
6	Manual Vacuum Aspiration (MVA)	4,480	IPC guidelines completed	5,376
7	Children immunized against Penta 3	1,176	EPI guidelines - Penta 3 spacing:1 <sup>st</sup> vaccination at 6 weeks after delivery;2 <sup>nd</sup> 4 weeks later; 3 <sup>rd</sup> 4 weeks later	1,411
8	Tetanus vaccination of girls 12 years and above in schools	1,232		



<b>9</b>	Antenatal Care (ANC)	-	4 standard visits spaced 1 month apart	2,128
<b>10</b>	Antenatal Care (ANC) first visit	-	Within 16 weeks of conception	2,184
<b>11</b>	Postnatal care	560	Within 48 hours of delivery	1,120
<b>12</b>	Health Facility Delivery	4,536	Partogram filled correctly, IPC guidelines completed	9,072
<b>13</b>	Family Planning: consultation	1,792		
<b>14</b>	Family Planning: implant	4,592	IPC guidelines completed	5,510
<b>15</b>	Children receiving 6 monthly deworming treatment (12-49 months)	280		
<b>16</b>	Vitamin A (6-49 months)	280		
<b>17</b>	Mosquito net given to pregnant women and children under 1 of age	504		
<b>18</b>	Voluntary counselling & test for HIV (PITC, DCT)	1,568		
<b>19</b>	PMTCT: HIV+ mothers and children treated	4,648		