

ASSESSING THE FINANCIAL SUSTAINABILITY OF UNIVERSAL HEALTH INSURANCE
SCHEME "AASANDHA" IN THE MALDIVES

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ในประเทศมัลดีฟส์



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CONTENTS

	Page
THAI ABSTRACT	iv
ENGLISH ABSTRACT	v
ACKNOWLEDGEMENTS	vi
CONTENTS	vii
LIST OF ABBREVIATIONS	xi
Chapter 1 INTRODUCTION.....	1
1.1 Background.....	1
1.1.1 Country Profile and Health system context	2
1.1.3 Macro Economic and social context.....	3
1.1.4 Vulnerable to External Shocks.....	7
1.1.5 Fiscal Space- High Fiscal Deficit	8
1.1.6 Madhana Members and its Cost.....	10
1.2 LAUNCHING OF UNIVERSAL HEALTH CARE IN THE MALDIVES	11
1.2.1 AASANDHA: BENEFIT PACKAGE AND BENEFICIARIES.....	11
1.2.3 FINANCIAL STATUS OF AASANDHA	13
1.3 PROBLEM STATEMENT.....	14
1.4 OBJECTIVE OF THE STUDY	17
1.4.1 SPECIFIC OBEJECTIVES:.....	17
1.4.2 RESEARCH QUESTIONS	18
1.4.3 SCOPE OF THE STUDY:.....	18
1.4.4 EXPECTED BENEFITS:	18
1.4.5 HIPOTHESIS:.....	19

	Page
CHAPTER 2 LITERATURE REVIEW.....	20
2.1 Financial Sustainability.....	20
2.1.1 A study on financial sustainability.....	21
2.2 Fiscal Space.....	22
2.3 What are the sources of Fiscal Space?.....	23
2.4 The Reform of the Health care Financing.....	25
2.5 Universal Coverage.....	29
2.6 Effect of Gate Keeper.....	31
2.7 Review on Health account and sources of health funds in the Maldives.....	32
2.8 Review on Government Expenditure on Social Protection schemes.....	33
CHAPTER 3 METHODOLOGIES.....	35
3.1 Research Design.....	35
3.2 Conceptual Framework.....	37
3.3 Data Collection.....	37
3.4 Research Instrument.....	38
3.5 Data Source.....	39
3.6 Study Method.....	40
3.7 Compiling the Total Cost of Hospital.....	40
3.7.1 Labour Cost of Hospital.....	41
3.7.2 Material Cost of the Hospital.....	41
3.7.3 Capital Cost.....	43
3.8 Aasandha Cost and funds Capital Cost.....	43
3.9 Data Analysis for Hospital Costing.....	44

	Page
3.9.1 Data Analysis for Cost and Funds of Aasandha	44
3.9.2 Data analysis for the qualitative research.....	45
CHAPTER 4 RESULTS	46
4.1 General Data on Hospital Costs	46
4.2 Total Costs.....	48
4.3 Total Cost Profile of IGMH.....	49
4.4 Total Cost Profile of IGMH inpatient and outpatient.....	51
4.5 Unit Cost in the year 2011	53
4.6 Unit Cost in the year 2012	53
4.6 Unit Cost in the year 2013	54
4.7 'Aasandha' Total Cost and funds.....	55
4.8 'Aasandha' Cost for services and referrals to abroad	56
4.9 Total funds received and total funds due for 'Aasandha'	57
4.9.1 Total Administrative cost of 'Aasandha'	58
4.10 Projection for the Financial Sustainability of the Aasandha	59
4.11 Projection for the Financial Sustainability of the Aasandha with the increase in line with the government revenue as a percentage of GDP.....	60
4.12 Projection for the Financial Sustainability of the Aasandha in terms of population growth.....	61
4.13 Projection for the Financial Sustainability of the Aasandha	62
4.14 Sensitivity Analysis on the financial sustainability of the Aasandha Scheme ..	62
4.15 Sensitivity Analysis on the financial sustainability of the Aasandha Scheme..	63
4.16 Sensitivity Analysis on the financial sustainability of the Aasandha Scheme..	64
CHAPTER 5 DISCUSSION.....	66

	Page
5.1 Discussion on the Hospital Costing.....	66
5.1.1 Expenditure of the Hospital.....	67
5.1.2 Higher Labour Cost of Hospital.....	67
5.1.3 Material cost and capital cost of the Hospital	68
5.1.4 Unit Cost of the Hospital.....	69
5.2 Cost and funds of ‘Aasandha’	70
5.2.1 Total Cost and referral to abroad ‘Aasandha’	70
5.2.2 Total Administrative cost of ‘Aasandha’	71
5.3 Projection to the financial sustainability of the Aasandha.....	72
5.4 Strengths and benefit of the study	74
5.5 Limitations	75
CHAPTER 6 CONCLUSION	76
6.1.1 Recommendations for the Hospital.....	77
6.1.2 Recommendations for the financial sustainability of the Aasandha Scheme.....	78
REFERENCES	80
VITA.....	88

LIST OF ABBREVIATIONS

IGMH: Indhira Gandhi Memorial Hospital
NSPA: National Social Protection Agency
MVR: Maldivian Rufiyaa (currency)
MPND: Maldives planning and National Development
MoH: Ministry of Health, Maldives
TPA: Third Party Administrative
OPD: Out Patient Department
IPD: Inpatient Department
RF: Rufiyaa (Maldivian Currency)
LDC: Least Developed Country



Chapter 1

INTRODUCTION

1.1 Background

The question on whether a health insurance scheme will be financially sustainable in the future is regularly discussed topic in the policy level. However, the problem is often related with the ability of the government and others who are involved to finance the insurance scheme or health care in the aspect of increasing cost burdens, with the ageing population, new technological innovations and increase in the consumer expectations on the health care coverage and the quality of health services are important challenges to be faced every day.

Even though the view of 'financial sustainability' seems to very crucial in the health policy level debates, it is not seen in most part of the health system objectives. And also it has not been included in the World Health Organization's health system performance framework (Thomson, Foubister et al. 2009). Furthermore, Thomson et al, 2009 argues that there is little clearness about the term's meaning other than it has something to do the 'ability to pay' or 'affordability'. However, he says that sustainability issues with the balancing cost pressure against the limited resources is one of the main concern to all the countries (Thomson, Foubister et al. 2009). Financial sustainability is generally defined as the comparison between the government's investment in to health system and what the health system can generate and provide in benefit to the government in terms of monetary value.

Any health care intervention or any insurance scheme need be assessed whether it can be financially sustainable in the future in regard to the ageing population and other economic changes. For any health system the financial sustainability will be met when the cost equals to the benefits

it achieve from that system. And in order to assess this financial suitability, any government needs to expand and explore more on its fiscal space in regards to its health care resources that comes from a combination of tax revenue and other contributions. In the present day alarms have started to rise regarding ways to identify the fiscal resources or fiscal space of the government. Nevertheless to this, the term fiscal space is still regarded as a vague term in most policy debates. Fiscal space refers to *“room in a government’s budget that allows it to provide resources for a desired purpose without jeopardizing the sustainability of its financial position or the stability of the economy”* (Heller 2006)

It is indeed very clear that for a better desired solutions fiscal space of the government plays a mandatory role in assessing the financial sustainability of any given health system.

1.1.1 Country Profile and Health system context

A nation situated on the equator consisting of 1,190 low lying islands, naturally divided into 26 atolls that stretch to 820 km from North to South and 120 km East to West is the beautiful The Republic of Maldives. The country consists of small islands surrounded with turquoise lagoons, which are divided in to 20 atolls for the ease of local administration – out of this 200 islands are inhabited. The total population of the country stood at 298,968 in year 2006 with 74,000 people living in the capital island- Malé and the rest of the population are scattered in the rural or sub-urban islands (MPND, 2006).

1.1.2 Health System in the Maldives

It was in the year 2001; the Government of Maldives established a five-tiered referral system which includes a central level and subsequently regional, atoll, sub-atoll and island levels. IGMH (Indira Gandhi Memorial Hospital) serves at the central level. The regional level includes regional hospitals.

In a similar manner, the atoll level includes atoll hospitals, the sub-atoll level includes atoll health centres and the island level health posts and family health sections, respectively (MPND, 2006).

IGMH being the main hospital in the country provides general and specialty health care services to the whole country. Additionally, IGMH is assigned as the tertiary level referral hospital. IGMH is the leading health care delivery centre with a 275 beds, which provides advanced diagnostic testing, major surgeries and other health facilities to the whole nation. The second main hospital in the country is ADK Hospital, which is a private hospital in the capital Male' which also provides tertiary level health services to the public.

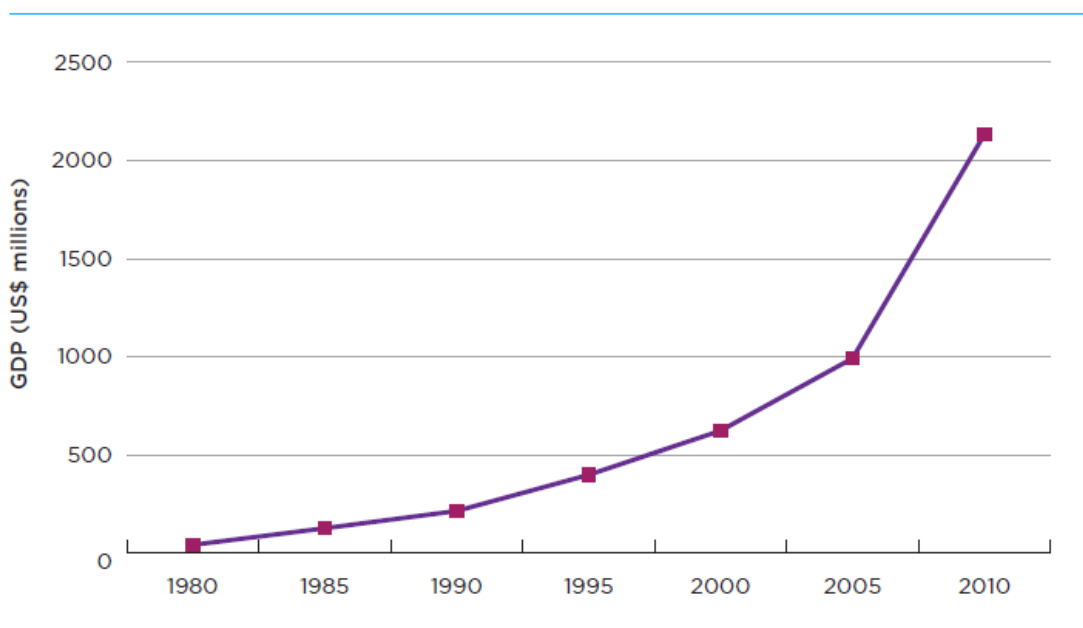
Maldives, being a small country with limited resources gives its priority to provide immunization for children against diseases such as Diphtheria, measles, poliomyelitis, BCG and hepatitis B. For that matter, effective immunization programmes are being conducted and has achieved a tremendous success by eradicating most of the childhood diseases throughout the country. Additionally, this includes pregnant women being immunized against tetanus (MoH, 2011).

1.1.3 Macro Economic and social context

Maldives is a country with a narrow economic base line that relies mainly on two sectors: tourism and fisheries. Regardless to this, the economy has been growing steadily and is in fast transition. Gradually the country started to move towards the highest per capita and graduated from least developed country status in 2011, being one of the highest per capita income countries in South Asia (Statistical Year book of Maldives, 2011). In 1980, the Maldives listed amongst one of the 20 poorest countries in the world with a per capita Gross Domestic Product (GDP) of US\$2751. In those days the country had a population of 155,100 and a GDP of US\$42 million. However, tremendously

by 2012, annual GDP enlarged to US\$2.2 billion, while the total registered population was estimated at 350,759 (Statistical Year Book of Maldives, 2013).

The Maldives GDP in US\$ current prices.



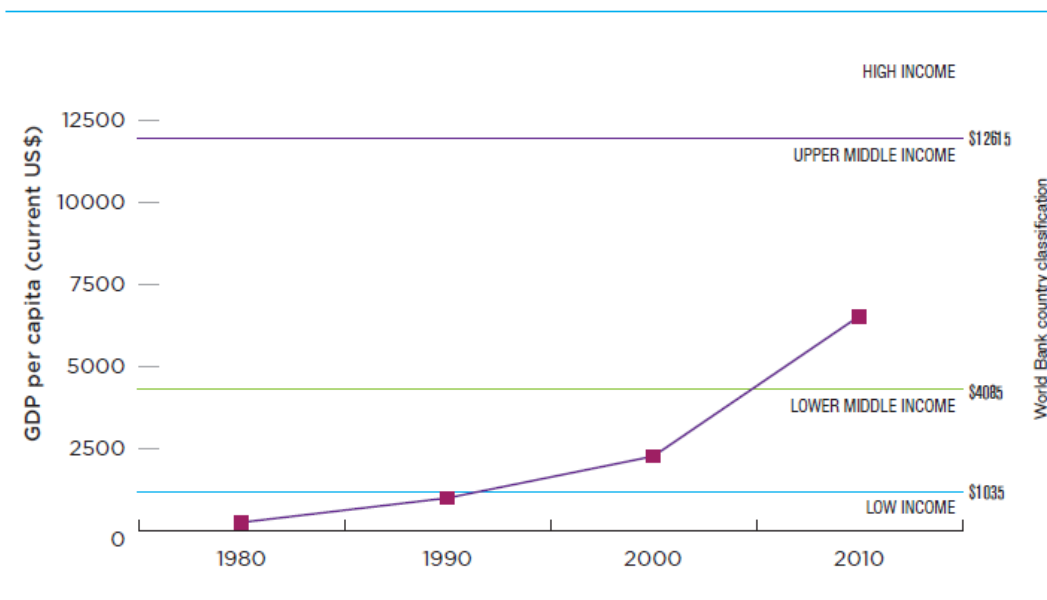
Source: Maldives Economic Diversification Strategy

During the year 2011 the Maldives has progressed from a least developed country to a one with a highest per capita income in South Asia (Statistical Year book of Maldives 2013). The gross national income (GNI) per capita in 2011 was US\$ 5800 and the gross domestic product (GDP) per capita was US\$ 6488(WHO -Country Cooperation Strategy, 2013)

During this time the Maldives has moved from a low income country to an upper middle income country. From the year 1980 to 2012, the country has reached a per capita GDP of US\$6,567 from US\$275(WHO -Country Cooperation Strategy, 2013). This shows a great improvement with more than a 23 fold increase in per capita income over three decades. The 2012 GNI per capita (current

US\$) of the Maldives calculated using the Atlas method was US\$ 5, 750(Maldives Economic Diversification Strategy, 2013)

Growth in Maldives GDP per capita 1980 to 2010



Source: Maldives Economic Diversification Strategy

Presently, Maldives is no longer eligible for the preferential treatment enjoyed by LDCs as the country is among three to have graduated from LDC status by 2012. The qualification was based on three criteria: per capita gross national income (GNI); human assets; and economic vulnerability to external shocks (Maldives Economic Diversification Strategy, 2013).

Nevertheless, in terms of the food and the fuel price hikes, the global recession and climate change, social protection system; both the formal and informal is under a lot of pressure (WHO - Country Cooperation Strategy, 2013). Unfortunately, these events had led to major losses in the resources and the fiscal space available to the government as indicated in the Ministry of Health

Master Plan. Furthermore, the people of Maldives persist vulnerable to both environmentally and geophysical.

The Population and Housing Census of Maldives 2006 showed that the population of Maldives was 298, 968 with a projected annual average population growth rate (2008–2010) of 1.6% (MPND, 2006). The shape of the population. Pyramid specifies that the age and the sex composition of the population is relatively similar to other developing countries. However a relatively. smaller proportion is in .the older age categories and larger proportion of the population is in the age group of less-than-20-years-of-age categories (WHO -Country Cooperation Strategy, 2013).

Population Trends from 1995-2015 (Projected)

	1995	2000	2006	2010	2015
Population	244 814	270 101	298 968	319 466	347 552
Numerical increase	31 599	25 287	28 867	20 498	28 096
Average annual growth (%)	2.73	1.96	1.69	1.6	1.76

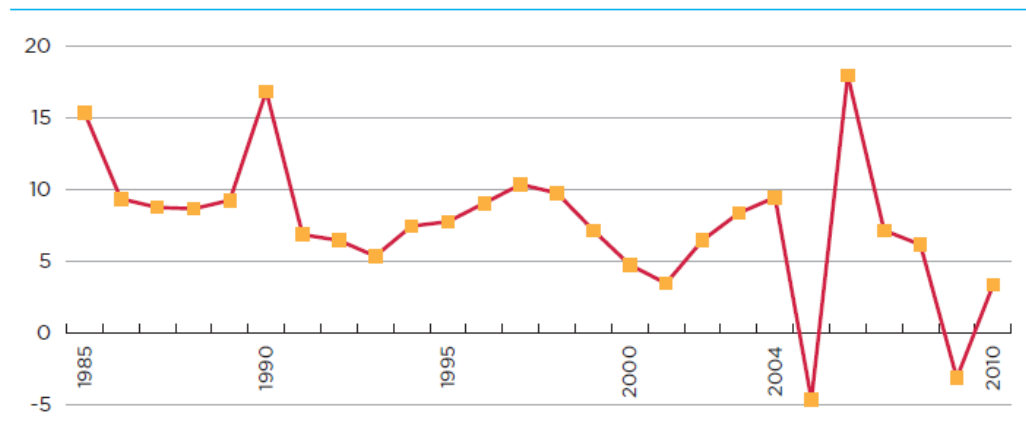
Sources: Statistical year book of Maldives 2010

The life expectancy at birth in male has increased from 70 to 73 years and incase of female it has increased from 70.1 to 75 years from 2000 to 2011 (MPND, 2006). Many defining reasons and factors have been contributed to this increase in the life expectancy. Better diagnostic and quality health services, improved accessibility to health care services and greater awareness about the health among the population are some of the factors that have contributed to this increase (WHO -Country Cooperation Strategy, 2013).

1.1.4 Vulnerable to External Shocks

In the decade 2000 to 2010, the Maldives economy faced external shocks from natural disasters, global terrorism, health pandemics and hikes in fuel prices (Maldives Economic Diversification Strategy, 2013). After having recorded annual growth rate of 8.4 percent per annum in real terms over the decade 1990 to 2000, real GDP grew at the rate of 7.4 percent in the decade 2001 to 2010. The high level of global integration adversely impacted the economy from exogenous shocks such as the terrorist attack on the World Trade Center in 2001, the outbreak of SARS in East Asia in 2003, and the international fuel prices escalation that began in 2004. The combined impact of these international incidents temporarily hindered the upward economic trends enjoyed by the country (Maldives Economic Diversification Strategy, 2013).

Real GDP growth at 1995 constant prices 1985-2010.



Source: Maldives Economic Diversification Strategy

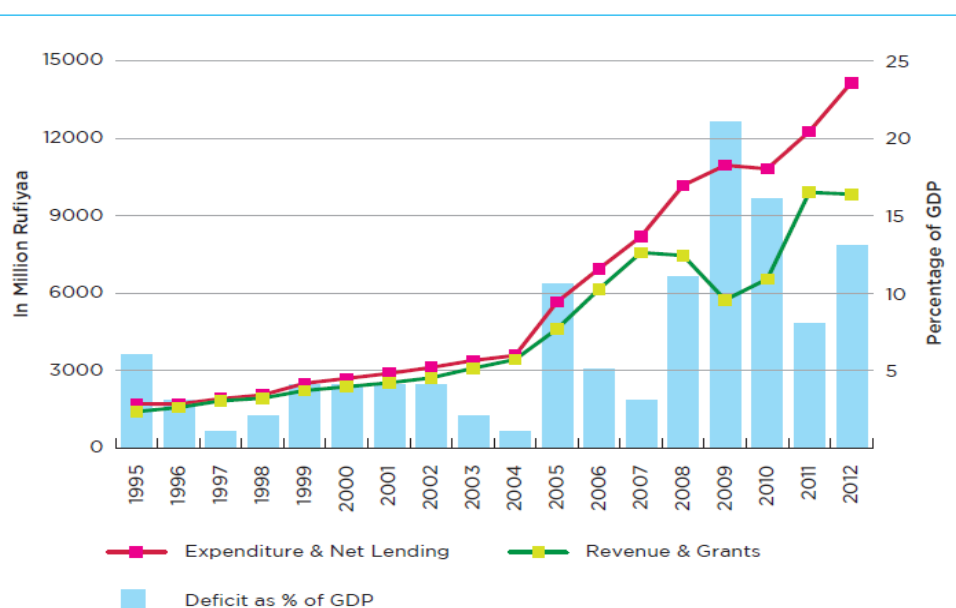
For the first time ever, the Maldives had a negative economic growth rate in 2005 (Maldives Economic Diversification Strategy, 2013). Since GDP calculations began in the Maldives in 1978, the Maldives economic growth had the first major setback in 2005. The Indian Ocean tsunami of December 2004 caused the Maldives damage equivalent to 62 percent of GDP and the economy

contracted by 4.6 percent. In 2009, the economy experienced a negative growth for the second time. Having partially recovered from the economic, social and environmental effects of the tsunami disaster, the country had to face yet another set of challenges from the 2008/2009 international food, fuel and financial crises. Tourist arrivals declined and access to credit crippled. As a result, the Maldives economy contracted by 3.1 percent in 2009 (Maldives Economic Diversification Strategy, 2013).

1.1.5 Fiscal Space- High Fiscal Deficit

In the present day alarms have started to rise regarding ways to identify the fiscal resources or fiscal space of the government. Until 2000, the Government followed a prudent fiscal policy. Since 2001, a more expansionary fiscal policy regime was followed and Government spending outpaced GDP growth since 2000. Total government spending increased from 32 percent of GDP in 2000 to 45 percent in 2001. In 2012, it stood at 42 percent of GDP (Maldives Economic Development, 2013).

Public finance, revenue and expenditure 1994-2012.



Source: Maldives Economic Diversification Strategy

Revenue has also grown, but at a slower pace. From 2000 to 2004 overall deficit ranged between 4 and 5 percent of GDP.

In the aftermath of the 2004 Indian Ocean Tsunami, fiscal deficit reached a new high. Due to the post Tsunami reconstruction efforts, the deficit reached 11 percent of GDP in 2005. However, this was followed by a short period of stabilization until 2008 when fiscal deficits again escalated. After the fiscal deficits having reduced to 2 percent of GDP in 2007, it increased to 11 percent of GDP in 2008. The global financial crisis induced shortfalls in revenue, coupled with declining international financing, led to a record deficit of 21 percent of GDP in 2009. The fiscal deficit of 2012 stood at 13 percent of GDP. Coupled with high fiscal deficit, the total public debt of the government reached 72 percent of GDP (US\$ 1.6 billion) by the end of 2012, of which 39 percent is domestic debt (Maldives Economic Development, 2013).

Recently, important new revenue streams have been introduced. Government's effort towards fiscal consolidation has strengthened the taxation base. *The introduction of the Business Profit Tax (BPT) and Goods and Services Tax (GST) in 2009, increased the government's reliance on tax revenue, while lessening the reliance on non-tax revenue.* A number of new revenue measures were also implemented during 2012, including an increase in the rates of GST and T-GST. *The current expenditure of the Government has spiraled upwards. Government expenditure has increased to 42 percent of GDP (US\$ 922 million) in 2012.* Current expenditure of the government contributes to over 70 percent of total expenditure. The high current expenditures, due to the large size of the public sector in the economy with close to 84 percent of current expenditure spent on administrative and operational expenses. Total government wage bill (salaries, wages and allowances) constituted 40 percent of current expenditure, amounting to US\$ 274 million in 2012.

Although salaries and wages constitute a large portion of current expenditure, spending declined slightly in 2012 (Maldives Economic, 2012).

Social welfare spending has emerged as a major current expenditure. The growth in current expenditure in 2012 was led by the increased spending on social welfare contributions, which more than doubled, from US\$ 84 million in 2011 to US\$ 179 million and accounted for 26 percent of current expenditure in 2012. **This primarily reflects the government contribution to the Aasandha health scheme, which was introduced in January 2012.** The external debt of the Maldives has increased significantly. At the end of 2012, the official external debt stood at US\$ 846.2 million⁹ (38 percent of GDP) as compared to US\$ 959.1 million at the end of 2011 (43 percent of GDP) (Maldives Economic Diversification Strategy, 2013).

1.1.6 Madhana Members and its Cost

In the year 2011, the social health insurance (SHI) scheme Madhana covered over 77,500 people, which is about 25% of the country's population. The membership primarily comprises of two large groups- all civil service officials and all senior citizens, which together form the bulk of Madhana's membership. Family members of these groups are not included in the coverage, and have to be enrolled voluntarily by payment of the requisite contribution, similar to other citizens in the country. Voluntary enrolment by individuals, after several rounds of quarterly enrolment is just 11,613 members (World Bank. 2010).

The aggregate expenditure for the Madhana scheme in 2010 was 165 million MRF, which is more than double the expenditure in 2009 (76 million MRF). Despite the introduction of mid-stream corrective measures, average costs per beneficiary have steadily escalated since the launch of the scheme from 1,500 MRF in 2009 2,500 MRF in 2011. Since the Government was trying to establish

a scheme to cover the whole population the policy level discussion were going on to make plans modification. Madhana was abolished from the day Aasandha came in to existence.

1.2 LAUNCHING OF UNIVERSAL HEALTH CARE IN THE MALDIVES

Recently Maldives health has taken many challenging turning points to its health financing system. The largest of its change was the launching of the country's universal health insurance scheme "Aasandha" which came in to life after the Parliamentary Act Social Health Insurance. "Aasandha" commenced on 1 January 2012. It is administered by National Social Protection Agency (NSPA) under the Ministry of Health and Family. The whole scheme is applied through an insurance company, Aasandha Private Ltd, with a contact price of Maldivian Rufiyah 2,750 per person (for the year 2012). This scheme has many similar characteristics as its predecessor "Madhana" which covered mostly civil service officials, senior citizens and voluntary individuals. "Madhana" before its abolishment had covered 25 percent of the countries' population (Nagpal' S and Redaelli S, 2013).

1.2.1 AASANDHA: BENEFIT PACKAGE AND BENEFICIARIES

Aasandha benefits is widespread; it covers services ranging to inpatient and outpatient treatment including drugs and diagnostics, though subject to certain conditions, within an overall cap of MRF 100,000 per person per year. In theory, the entire population of the country, comprising over 3,30,000 citizens, is eligible for scheme benefits without any premium contributions (Nagpal' S and Redaelli S, 2013). The whole population of the country has an easy access to the scheme with their national identity card. According to the National Health Statistics of Maldives as on December 31, 2012, a total of 2,76,033 citizens, or about 84 percent of the population had already used the scheme at least once during the first year of its implementation.

1.2.2 TRENDS IN UTILIZATION OF AASANDHA

The utilization rate of Aasandha was very high even starting from its implementation. The trends show quite a high rapid growth even during its first week. The bills by the service providers shows claims has increased rapidly after the launching of the scheme. However, after March 2012, two main private clinics which was included as providers discontinued their service which later dropped the cost containment of the Aasandha.

According the Health statistics of Maldives the first year of Aasandha implementation a total of 3.6 million transactions took place, which is an average of 13.2 transactions per patient. A country like Maldives where the young population is dominant and has many supply constrains like access to health services and medical service providers, this amount was quite high (Nagpal' S and Redaelli S, 2013).

When we look at the transactions and expenditure of Aasandha the bulk was seen in the outpatient services. 92 percent of all the transactions was for outpatient utilization, where only 8 percent was for the inpatient services. The next is the cost of the Aasandha claims made by the providers during its first year, where 61 percent was for outpatient, and 33 percent for inpatients. Pharmacies amounted for 32 percent of all transaction and 18 percent of the bill accounted (Nagpal' S and Redaelli S, 2013).

An area for cost containment and measures to be taken is from over sea treatments. As some services and treatments are not available in Maldives the scheme provides the patients to fly to over sea and get the treatment from some selected providers. Significantly, this accounted for 0.3 percent of all claims received by Aasandha, but amounted to 19 percent share of the total claimed

amount, by value. As drugs (including the medicines billed by pharmacies bills directly by hospitals) and overseas services together account for about half of Aasandha current costs, and also these are the two main areas for emphasis in the short term for potential cost containment options (Nagpal' S and Redaelli S, 2013).

1.2.3 FINANCIAL STATUS OF AASANDHA

In spite of some cost containment procedures taken during the first year, Aasandha was costlier than what had been planned by the Government and the insurer at the launch of the scheme (Nagpal' S and Redaelli S, 2013). According the Maldives Health Statistics 2013, the Government had budgeted MRF 720 million for the scheme even though the full year's premium, at MRF 2750 per beneficiary, worked out to be over MRF 900 million. Even this premium amount was irregularly paid and some of it continued to be in debts till the end of the year (Health Statistics of Maldives, 2013). And with this trend it will adversely affect the insurer's ability to settle the claims and unquestionably affect the financial health and the service of the service providers.

According to the available data claims showed that the insurance company had already received claims amounting to about MRF 943.6 million in the first year of the scheme. If these claims are to be accepted in full the insurer will report tremendous losses on account of the claims payments and the administration costs (World Bank, 2012). Nevertheless, significant shares of the claims were rejected due to incomplete documentation which may reduce the insurer's losses (Nagpal' S and Redaelli S, 2013). However, this will affect the finance of the service providers, most which are publicly owned.

Not until recently many cost control measures had been included in the scheme though this was mainly due to the limited supply and the narrow size of the network of service providers which

ultimately facilitated to lower the expenses of Aasandha. As the Government continued in altering the scheme during its initiative, several experiences were taken into consideration. For instance, the recent decision to introduce clinics on Aasandha network- with limits on the fees that Aasandha Scheme would pay the clinics but allowing for the difference (often at pre-agreed consultation rates) to be paid by the patients- could result in a share of the cost burden shifting to the patients resulting to increase in out of pocket payment. However, this also ended in increasing the utilization rate of the scheme where some potential overuse was witnessed in the early months of the scheme. The main reason for this over use was that greater supplies of services were available through these clinics (Nagpal' S and Redaelli S, 2013).

1.3 PROBLEM STATEMENT

A developing country like the Republic of Maldives has many challenging reforms to encounter. A country with supply constraints has taken its last reform very recently; introduction of the county's universal health insurance scheme Aasandha.

The Government of Maldives budgets each year for this scheme through taxation. National Health Protection Agency administrates the scheme under the head of Ministry of health. Without a gate keeper, the scheme provides coverage of up to Rf100,000 annually for health services for all Maldivian nationals from hospitals and health centres operated by health corporations as well as private hospitals ADK in Male'(the capital of Maldives) and IMDC in Addu City and the private operations such as Central Clinic and Central Medical Centre. The scheme also includes stays in hospitals in neighboring India and Sri Lanka on the condition that the treatment is not available in the Maldives.

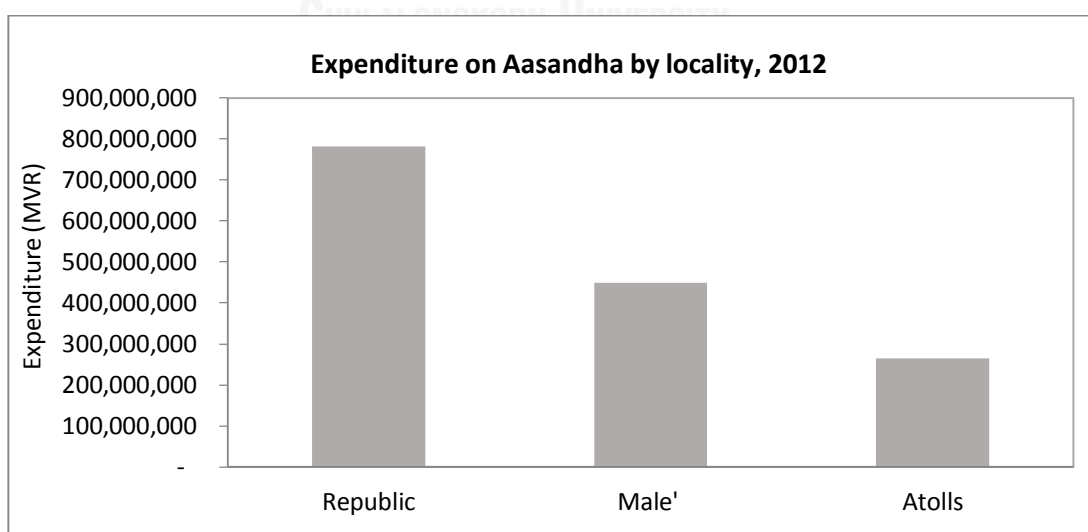
EXPENDITURE ON AASANDHA SERVICES BY TYPE OF INSTITUTION , 2012

Locality	Total Expenditure (MVR)	Hospitals	Pharmacies	Opticals	Clinics	Airfare Tickets	Overseas hospitals
Republic	782,126,477	489,577,981	164,518,581	14,876,749	21,704,802	22,925,989	68,522,375
Male'	448,843,963	301,390,314	88,423,560	14,399,298	21,704,802	22,925,989	-
Atolls	264,760,139	188,187,667	76,095,021	477,451	-	-	-

Source: Statistical year Book of the Maldives 2012

Department of National Planning, Maldives

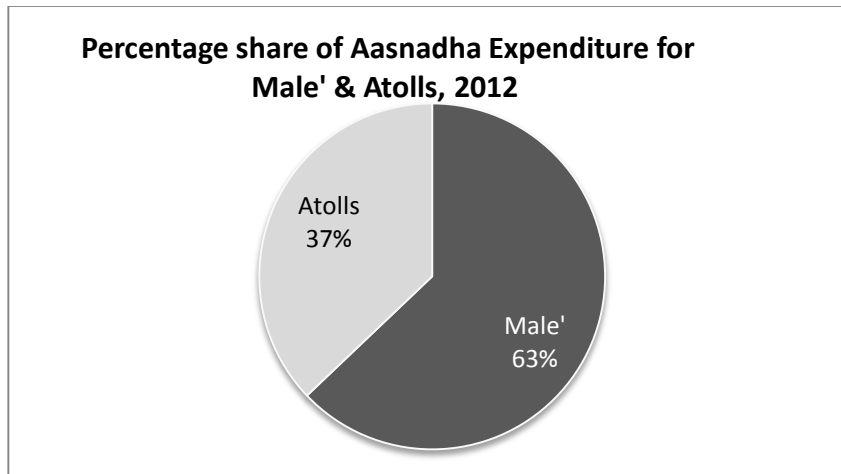
The total expenditure on Aasandha for the year 2012 was MVR 782,126,477. The total expenditure shows the expenses for the hospitals, pharmacies, optical, clinics and oversea hospitals including the airfare tickets. Male' being the capital city of the country has a total expenditure of MVR 448,843,963 where most clients from different part of the country come to seek health care. IGMH the main hospital located in the capital city provides general and specialty health care services to the whole country. In addition to this IGMH is assigned as the tertiary level referral hospital. Even though geography remains a barrier to health care in the Maldives people from different part of the country come to IGMH to get the best possible health care.



Source: Statistical year Book of the Maldives 2012

Department of National Planning, Maldives

The capital city Male' which has a higher expenditure on Aasandha has the best health facilities in the country.



Source: Statistical year Book of the Maldives 2012

Department of National Planning, Maldives

63 percent of Aasandha expenditure is taken place in the capital city Male'. The remaining 37 percent is dispersed among the other islands.

Aasandha has many encounters to face and also many reform steps to pursue (Nagpal' S and Redaelli S, 2013).

- Cost drivers distressing the scheme includes the fee-for-service system that is known mechanism which boosts the supplier-induced demand.
- The use of proprietary drugs with no essential drug lists and no cost controls there.
- Lack of monitoring and IT systems with NSPA.
- A non-existent referral system with patients directly accessing specialized care.
- Significant potential for moral hazard.
- And lack of incentives to contain costs on the part of the providers and beneficiaries are problems that the scheme encounters (Nagpal' S and Redaelli S, 2013).

It is in this light that this study finds it necessary to assess the financial sustainability of the Universal Health Insurance Scheme “Aasandha” in the Maldives. This study will attempt to assess the current health care insurance scheme ‘Aasandha’ and the financing sustainability of this scheme in the Republic of Maldives. The fiscal space of the government and the changes in the utilization rate after the introduction of the scheme will be taken in to consideration.

1.4 OBJECTIVE OF THE STUDY

The general objective of the study is to assess the financial sustainability of Universal Health Insurance Scheme “Aasandha” in the Maldives.

1.4.1 SPECIFIC OBEJECTIVES:

In order to achieve this aim, the study addresses the following specific objectives which includes;

1. To find the total cost of hospital for inpatient and outpatient before and after the implementation of “Aasandha” 2011- 2012.
2. To find the average cost for inpatient and outpatient before and after the implementation of the “Aasandha” 2011- 2012.
3. To make a comparison of the funds provided by the government to the Aasandha against the cost of Aasandha.
4. Assess the degree of financial sustainability of “Aasandha” using country’s macroeconomic data and projections 2014-2018.
5. To study the expected effect of removal of the Rf100, 000 ceiling on the financial sustainability of the scheme.

1.4.2 RESEARCH QUESTIONS

To be able to achieve the objectives of this study, the following research questions need to be stated to aid in finding answers to the research problem.

1. What is the total cost of hospital for inpatient and outpatient before and after the implementation of “Aasandha” 2011- 2012?
2. What is the average cost for inpatient and outpatient before and after the implementation of the “Aasandha” 2011- 2012?
3. How to make a comparison of the funds provided by the government to the Aasandha against the cost of Aasandha What is the degree of financial sustainability of Aasandha in five years’ time 2014- 2018?
4. What is the expected effect expected of removal of the Rf100, 000 ceiling on the financial sustainability of the scheme?

It is the policy of the government to spend Rf100, 000 for each person and once the health care cost exceeds this amounts the people will be paying out of pocket and will not be able to reimburse. However there are plans and talks of removing this Rf 100,000 ceiling.

1.4.3 SCOPE OF THE STUDY:

The scope of this research is to study the effect of the removal of the Rf100, 000 ceiling on the financial sustainability of the Aasandha scheme in to the years 2014-2018.

1.4.4 EXPECTED BENEFITS:

It is expected that the outcome of this study be used to

1. Find areas to improve in the hospital costing and find ways to manage the Aasandha scheme in to the hospital system.

2. Explore the expected effect of removal of reimbursement policy on the “Aasandha” health care cost and take measures to control the cost in the future.
3. Find ways to manage the Aasandha scheme and take measures to control the cost to sustain the scheme in the future.

1.4.5 HIPOTHESIS:

- In this study we hypothesize that removal of the Rf100, 000 ceiling will affect the financial sustainability of the Aasandha.



CHAPTER 2

LITERATURE REVIEW

The section will explore as much as possible both empirical and theoretical literature review available that has to do with the topic “Assessing Financial Sustainability of The Health Insurance Scheme Aasandha’ in the Maldives.

2.1 Financial Sustainability

Over the years the term ‘sustainability’ has received a significant attention. One of the definition is given in the UNICEF (1992) policy review document as “the ability of the system to produce benefits valued sufficiently by users and stakeholders to ensure enough resources to continue activities with long term benefits” (UNICEF, 1992). There are five main components required to achieve as a sustainable development, financial sustainability, political sustainability, managerial sustainability, technical and social sustainability (Olsen 1998). However, when focusing mainly to health sector the following definition was found very important.

“A health service is sustainable when operated by an organizational system with long term ability to mobilize and allocate sufficient and appropriate resources (manpower, technology, information and finance) for activities that meet individual or public health needs/demands” (Olsen 1998). It is primarily the ability of an organization or a government to generate a required service or benefit which should be sustained.

Whether a health system is going to be financially sustainable in the future is an important policy level debate. The term is often phrased with the ability of a government in financing the health care in surface with the increase in the cost pressure, population, and advance technologies with

higher expectation of the consumers and health care coverage, quality as important factors (Thomson, Foubister et al.).

“Financial sustainability may be defined as the comparison between the government’s investment in to its health system and what the health system can generate for the betterment of the government in terms of the monetary value” (Olsen 1998). Financial sustainability is achieved if the government investment is equal to what it can generate for the country, where it can generate to the government is equal to the influence of health care spending on GDP multiplied by the tax rate.

2.1.1 A study on financial sustainability

A study of the financial sustainability of Thailand’s national health insurance system has been conducted by Supakankuti et al (2013). In this study they began by reviewing the national health insurance in Thailand, Asian and South American countries. Supakankuti et al (2013) identified the problems associated with the systems as well as issues related to cost containment and revenue increasing strategies in these countries. They have conducted group interviews with stakeholders from different regions of the country. Based on these interviews and literature they have proposed possible alternatives to the current health care financing in Thailand. The study was concluded by assessing the degree of financial sustainability for each proposed alternative by using the existing macroeconomic data and projections (in to the year 2017) from the IMF (International Monetary Fund) (Supakankuti et al, 2013)

2.2 Fiscal Space

Countries in the world are facing enormous challenges to find ways to identify and find resources to finance for their health system. The term “fiscal space” is commonly used in policy debates however the word remains to be uncertain and vague (Heller P, 2005). He has defined fiscal space as:

“The availability of budgetary room that allows a government to provide resources for a desired purpose without any prejudice to the sustainability of a government’s financial position”. (Heller P, 2005, p.02)

Furthermore, Heller (2006) reported that when fiscal space is concerned the judgment and decision mainly depend on the country itself. In addition to this Heller (2006) explains that it is mandatory to have a complete study of the government’s current fiscal state. This includes the status of its revenue and expenditure, details about the debts, owing obligations and basic economic structure (Heller, 2006).

In addition to the general definition, the fiscal space specifically for health refers to the ability of governments to increase spending for the sector without risking the government’s long-term solvency or gathering out expenditure in other sectors needed to achieve other development objectives (Tandon and Cashin 2010). Moreover, Tandon et al (2010) states that fiscal space analysis is one important tool that can be used to assess, monitor and predict the sources and level of public resources available for the health sector. The fiscal space framework was first developed by Heller (2006) and later it was advanced by Tandon et al (2010).

2.3 What are the sources of Fiscal Space?

There are different ways and means a government can create fiscal space. More revenue can be generated by improving the taxation or by improving the tax administration. For the countries with the low tax burden raising the revenue share in the Gross Domestic product (GDP) is a clear option. Raising the tax share to at least 15% should be a minimum objective for LIC's (Heller 2006).

Less important expenditures can be removed to make space for high priority ones. The government should reprioritize the expenditures by reducing the unproductive expenditures. This must be an important principal for the countries that already have a higher spending on the GDP. However, finding such fiscal space is also not an easy task as the governments have a major segments of the budgets with nondiscretionary character, example high interest and wage bills.

Reprioritizing the expenditures include change in other support programs, cut back the expenditures on defense, internal securities expenses, reduce expenses on the embassy and foreign travels and addressing the issues related to over staffing or to clear out ghost workers (Heller 2006).

Moreover, resources can be borrowed from external sources or from internal sources to make better rooms for the desirable expenditures. This is another option for financing the main prioritized expenditure. When this option is considered whether borrowed externally or internally the question arises with the term repayment. Here the question is if the return on the borrowing justifies the cost of the borrowing (Tandon and Cashin 2010). Domestic borrowings must be handled with particular care as it overburdens the government budgets with debt service obligations.

Fiscal space can be achieved if the government receives grants from outside sources. Finally, a government can obtain fiscal space by printing money to finance for the public programs i.e.

seignorage creates a very limited room in creating the fiscal space for a government and should be subordinated to the broader objectives of the monetary policy (Heller 2006). However, Tandon et al (2010) says that all these are possibilities of how to create the fiscal space and these possibilities create consequences and there are number of issues to bear. He says that these possibilities lie outside the domain and are linked to macroeconomic policies and conditions. And these are linked to political economy ad cross sectional tradeoffs. In addition to this he says that even though these areas are exogenous to the health sector those areas needs to be analyzed and studied to find the implications to the health sector if there are any major changes to the political environment and the macroeconomic policies. (Tandon and Cashin 2010). For this reason the importance of health sector specific fiscal space assessment are needed to identify the adequate and sustained levels of resources needed to achieve the health outcomes. Fiscal space analysis is one tool to assess, monitor, or predict the sources and level of public resources available for the health sector (World Bank, 2010)

Furthermore, Tandon et al (2010) argues that health systems in both low and middle-income countries struggles with issues related to universal coverage, cost containment, quality and efficiency. Therefore, he says that analysis of fiscal space for health is not only in scope of low-income countries. The literature on fiscal space analysis have a collection that ranges from simple back-of-the-envelope calculations to complex models incorporating macroeconomic linkages and interactions resulting from an increase in government health expenditure (Tandon and Cashin 2010). A back-of-the-envelope “model” for assessing the fiscal space for health is found in the Williams and Hay (2005). In their model they have observed that if one assumes the government expenditure in any economy is limited to limited to 30-35% of GDP (an upper bound for most low income countries) – and if 15% of government budget is spent on health (also an upper bound

derived from the data) – then it is highly unlikely that government health spending would ever exceed 4.5-5% of GDP (Williams & Hay, 2005). According to them such calculations does not show the issues related to how to identify the additional need for health spending. However they have stated that these calculations will provide upper bounds for the magnitude of increases that's are feasible. Furthermore, William et al (2005) suggests that by assessing these areas this might be the starting point to complement costing studies that focus on resource needs (Williams & Hay, 2005).

2.4 The Reform of the Health care Financing

In the two decades for the effort of improving the health care finance and access the reforms have been combined with market ideologies, language, principles and practices with greater foundations to improve the efficiency and to put a halt on the swelling health care costs (Richards, 1996). And this lead to the promotion of private sector funding and provision of services and improving the sharing of patients cost eventually causing in a public-private mix (Richards, 1996).

Amazingly, a wide variety of reforms in the health care systems have taken place, contrast to this many economist have influenced health policies with basic utility models; for instance, if customers are well in advance informed and providers are more competitive then user fees will improve efficiency (World Bank, 1987). The recent trends in the health care systems can be caused due to the changes in the level of health and demographic changes. In the journal *Social Policy & Administration* Ravi Duggal has explained how important it is to over-emphasize the fact that health is a public or social good and so cannot be left to the vagaries of the market. According to him access to healthcare is critically dependent on how healthcare provision is financed (Duggal, R 2007)

In the past different transition has taken place throughout the world, changes in the demography, disease profiles and technological advances that had led to a many health systems and health care finance to reform. Such as, Maclaury (1984) had mentioned that hospital care and its price has vastly increased at a rate beyond inflation or even higher than the population growth. Basically, advancement in technology, rising income and aging population will strain the public and private purses which will eventually lead to increase in the cost of care (Maclaury, 1984).

Moreover, Figueras et al (1998) discusses that to understand the context of reform we need to consider the influences of political, ideological, social, historical, cultural and economic factors. Secondly burden on existing health and health sector problems along with increasing restrictions on health spending as well as organizational and structural challenges demand for new reform to take place (Figueras et al, 1998).

According to Dooslaer, different countries adopt different financing schemes (Dooslaer, 1999). Dooslaer states that the adoption of the scheme and the main sources varies from country to country and also the structure of choosing the reform mainly will depend on the country itself (E van Dooslaer, 1999). It is always a trend for the countries to move from one system to another within years' time. (Wagstaff, 1999). According to Wagstaff, in 1989 Spain has moved from social insurance to tax finance. In the 1980's there was a drastic increase in private health care finance. He has argued that out-of-pocket payments are seemingly becoming more regressive or less progressive (Wagstaff, 1999). Wagstaff et al (1999) described that in contrast to their previous study which was done in 1992, the mix of different financing mechanisms in different countries had become more complex and in addition to that most countries share in the financed privately increased. However it was concluded that in spite of many reforms, the findings of the 1992 study stayed true, i.e. tax-funded systems remained the most progressive and equitable. The study also

found that the French social insurance system progressed well but it showed that in Germany and the Netherlands it was regressive due to non-participation from high earning parties of the population (Wagstaff et al, 1999).

In a fair and efficient health care system it must be opened to all kinds of care to financing (Daniels et al, 2000). In most of the countries a mix mechanism of private insurance and out-pocket payment supplement one leading system of health care finance (Wagstaff et al, 1999). Even with this belief on numerous mixtures and disparities in healthcare financing designs, people appeared to be disappointed with health care financing and delivery of services (Ham, 1997) and this led to many reforms to take place in health financing all over the world.

However, among all the systems out-of-pocket payments are termed the most regressive of all financing systems. Nevertheless, out-of-pocket payments accounted for approximately 20 percent of healthcare payments for many OECD countries (Wagstaff et al, 1992 and Wagstaff et al, 1999). This is the system where a much greater portion of the income is shared by the sick and the poor than the healthy and richer and meanwhile there is no risk pooling; hence out of pocket payment do not have any collective protection (Chinitz et al, 1998). Many countries where a dominant proportion is from out of pocket payment and that also without any safety health insurance, many families tend to spend their whole income on health when they face any health burden eventually leading to debt (Kmietowicz, 2000).

Generally, in most countries they have a composite mix of financing mechanisms and major three prime methods of financing healthcare are identified (Ham, 1997a and Ranade, 1998a).

1. Public finance through general taxation, also known as the 'Beveridge Model'
2. Public finance through compulsory social insurance, also known and the 'Bismarck Model'

3. Private finance based on voluntary insurance or direct payments

The first two types of models include both direct charges and or private payments and the range to which these distinctions vary from country to country (Ranade, 1998). For example in the health system of Europe about 80 million people had covered them with supplementary health insurance to compensate for the services not covered in the public system or to detain them from out-of-pocket (Moran, 1994). Therefore, it shows that the general taxation and social insurance methods are more favoured over the market oriented voluntary insurance system.

According to Ham (1997) the voluntary insurance methods that's leads to high moral hazard for both users and providers leading to catastrophic and inappropriate use of the services. Hence, the risk of cream skinning and difficult to achieve universal coverage and fair excess to health services at the same time facing enormously high cost in administration.

The distribution of health care financing has been done for many European countries and to the United States (Wagstaff et al, 1999). However there was not such evidence or studies for Asia .The gap for this was filled when the estimation for health care financing was done for 13 Asian territories countries that accounts for 55% of the Asian population (O' Donnel et al 2008). According to this study, health care finance is slightly regressive in the three high income countries with universal social insurance. And it has shown that direct taxation is the most progressive source of health finance for the poorer economies (O' Donnel et al 2008)

Hence, there seems to be no easy solutions for the challenges faced to the health care systems. It has been undergoing many reform processes for the last two decades. Although debated many of these reforms may unfavorably affect the public health and eventually may lead to market mechanisms with contracting out of services (Vining and Globerman, 1999).

2.5 Universal Coverage

“Health financing for universal coverage”, one of the most important object of any health system. It is believed to be successful when all people of a country have admission to all range of adequate and quality health services, without any financial problem (WHO, 2009).

It seems challenging to reach universal coverage if out-of-pocket payments exceed 30% of total health expenditures (WHO, 2009) Out-of-pocket payments create considerable financial obstacles in accessing health care, and low-income household’s approaches on how best to achieve universal coverage, especially for the poor and vulnerable.

Most OECD countries attained universal coverage while limiting out-of pocket payments to 20%–30% of total health expenditures. As to the WHO reports global data shows that the levels of catastrophic and impoverishing expenditures are low when there is general government spending on health at levels of 5%–6% of GDP (WHO, 2009).

Furthermore, Benet S et al, (1998) explains that financial, administrative and managerial sustainability are vital for any of the health care insurance scheme to be smoothly established (Benet S, Creese A & Monasch R, 1998). Additionally, they argue that most of the health insurance schemes were source of finances for the entire health care rather than self-sustaining the schemes.

According to the WHO review 2009, public financing, mainly through taxation or social health insurance or a combination of the two, is the central form of prepayment financing in countries that have attained close universal coverage. Tax-based and social health insurance financing have relative advantages and disadvantages, but both provide the risk pooling and cross-subsidization which are essential for universal coverage, access and financial protection (WHO, 2009)

This report concludes by giving strategies to achieve universal coverage.

These dimensions call for targeted interventions suited to each country in the following eight strategic areas:

- (1) Increasing investment and public spending on health
- (2) Improving aid effectiveness for health
- (3) Improving efficiency by rationalizing health expenditures
- (4) Increasing the use of prepayment and risk-pooling
- (5) Improving provider payment methods
- (6) Strengthening safety-net mechanisms for the poor and vulnerable
- (7) Improving evidence and information for policymaking
- (8) Improving monitoring and evaluation of policy changes.

Area 5 focuses on provider payments as a key purchasing mechanism to influence provider and consumer behavior and improve health systems performance. This report shows that in Asia Pacific region budget allocations, staff salaries and fees for services are the main methods used (WHO, 2009). The review shows that many countries in Asia Pacific use fees for service method of provider payment. And these methods are inefficiently planned and supervised after their implementation. Fee for service method in general creates incorrect incentives and behavior for the providers and generate their income by collecting to their money-making services and products. One of the most efficient methods of provider payment is capitation method used in countries like Thailand and other OECD countries (WHO, 2009).

Financial capacity is also a function of the country's organizational and operational capacity to collect, pool, and spend funds efficiently and effectively. Ministries of Finance and Health must

work together to determine the government's capacity and commitment to finance health insurance. Economists, actuaries, and accountants can inform this process by analyzing different scenarios of the country's financial capacity and insurance design (WHO 2000).

2.6 Effect of Gate Keeper

An important role in the health care is that of a gatekeeper's role who helps the system to control the direct excess to patients to go directly to the specialists (Martin D et al, 1989). Many health systems use a several techniques to encourage primary care physicians to act as "gatekeepers" in trying to manage the medical care of the patients.

In a randomized trial conducted by Martin et al, 1989 to find the usefulness of a health care plan which uses physicians as gatekeepers to control health services shows that the use of a gatekeeper reduces the total charges per enrollee. This trial was conducted by comparing two schemes, one an independent practice association, requiring a gatekeeper, to an alternate scheme with equal benefits but without a gatekeeper.

In this randomized trial, the gatekeeper plan had lower ambulatory charges per enrollee, primarily due to lower use of specialists. The trial shows the gatekeeper plan had 6 percent lower total charges per enrollee than the plan without a gatekeeper (Martin, Diehr et al. 1989).

Furthermore, Delnoij, D et al (2000) says that the health care systems with specialist and hospital care after referral by a general practitioner (GP) have lower total health care costs. Their study was conducted by using multiple regression analyses on total and ambulatory health care expenditure of 18 OECD countries. It reveals one statistically significant effect ($P < 0.05$) in countries with gate keeping GPs: ambulatory care expenditure has increased very slowly when compared to non-gate

keeping systems. Therefore it reveals that this system appear to be far better to contain ambulatory care expenditure (Delnoij, Van Merode et al. 2000).

In contrast to more developed countries, the developing countries were mainly focusing on reducing the burden of communicable diseases. In the near past many developing countries have attained tremendous achievement in reducing the morbidity and mortality. However, delivery of some basic services and data to households that are dispersed away and deprived encounter the main difficulties to gain more healthcare (World Bank, 2010).

2.7 Review on Health account and sources of health funds in the Maldives

There are basically three main sources of finance for the health sector in the Maldives. They are listed below:

1. The public sources
2. The private sources
3. External Sources

The Table 2.1 represents the major sources of funds in the health sector. Household funds which is almost 50% is the highest source of finance while second highest source of finance 44% is from the Government of Maldives. External sources which includes grants for multilateral and bilateral aids and donations contribute to 3.3% while employee's funds also contributes 3.20%. The total funds for the year was 2011 was Rf 2,766,574,290 and USD 179,414,611.

Table 2.1 Sources of Funds, 2011

Funds	Amount Rf	Percentage	Amount in USD	Per Capital USD
Ministry of Finance and Treasury	1,209,222,934	43.70%	78,419,127	245
Other Public	8,200,557	0.30%	531,813	2
Household Funds	1,365,372,621	49.40%	88,545,566	277
NGO's and community Health	4,910,654	0.20%	318,460	1
Employees Funds	87,965,070	3.20%	5,704,609	18
Donors	90,902,454	3.30%	5,895,036	18
Total	2,766,574,290	100.10%	179,414,611	561

2.8 Review on Government Expenditure on Social Protection schemes

The table 2.2 represents total government expenditure on different social protection schemes during the year 2012. The highest expenditure is spent on the 'Aasandha', with a total of Rf 782,126,477. More than 80% of the expenditure of social protection scheme is contributed to the 'Aasandha' alone.

The next highest expenditure is on disability allowance, Rf 109,680,000 while single parent allowance contributes Rf 62,959,000. Expenditure on medical welfare Rf 14,510,916 while government spends Rf 648,500 for foster parent allowance.

Table 2.2 Government Expenditure on different Social Protection scheme, 2012

	AASANDHA	SINGLE PARENT ALLOWANCE	FOSTER PARENT ALLOWANCE	EMERGENCY MEDICAL WELFARE	DISABILITY ALLOWANCE
Month					
Total	782,126,477	62,959,000	648,500	14,510,916	109,680,000
January	61,453,464	4,682,000	41,500	18,060	7,100,000
February	72,125,326	5,404,000	60,000	36,220	11,574,000
March	81,612,739	1,634,000	49,000	147,501	8,968,000
April	70,798,940	5,267,000	50,000	376,016	1,050,000
May	70,874,690	9,092,000	15,000	809,618	16,188,000
June	69,886,634	5,327,000	38,000	871,884	8,736,000
July	66,491,344	3,592,000	57,500	980,626	972,000
August	50,356,408	1,668,000	-	1,106,567	9,258,000
September	60,259,852	10,467,000	120,000	1,238,682	17,262,000
October	55,017,547	3,721,000	70,000	1,316,128	9,426,000
November	57,641,126	6,857,000	73,500	950,043	9,504,000
December	65,608,407	5,248,000	74,000	6,659,569	9,642,000

CHAPTER 3

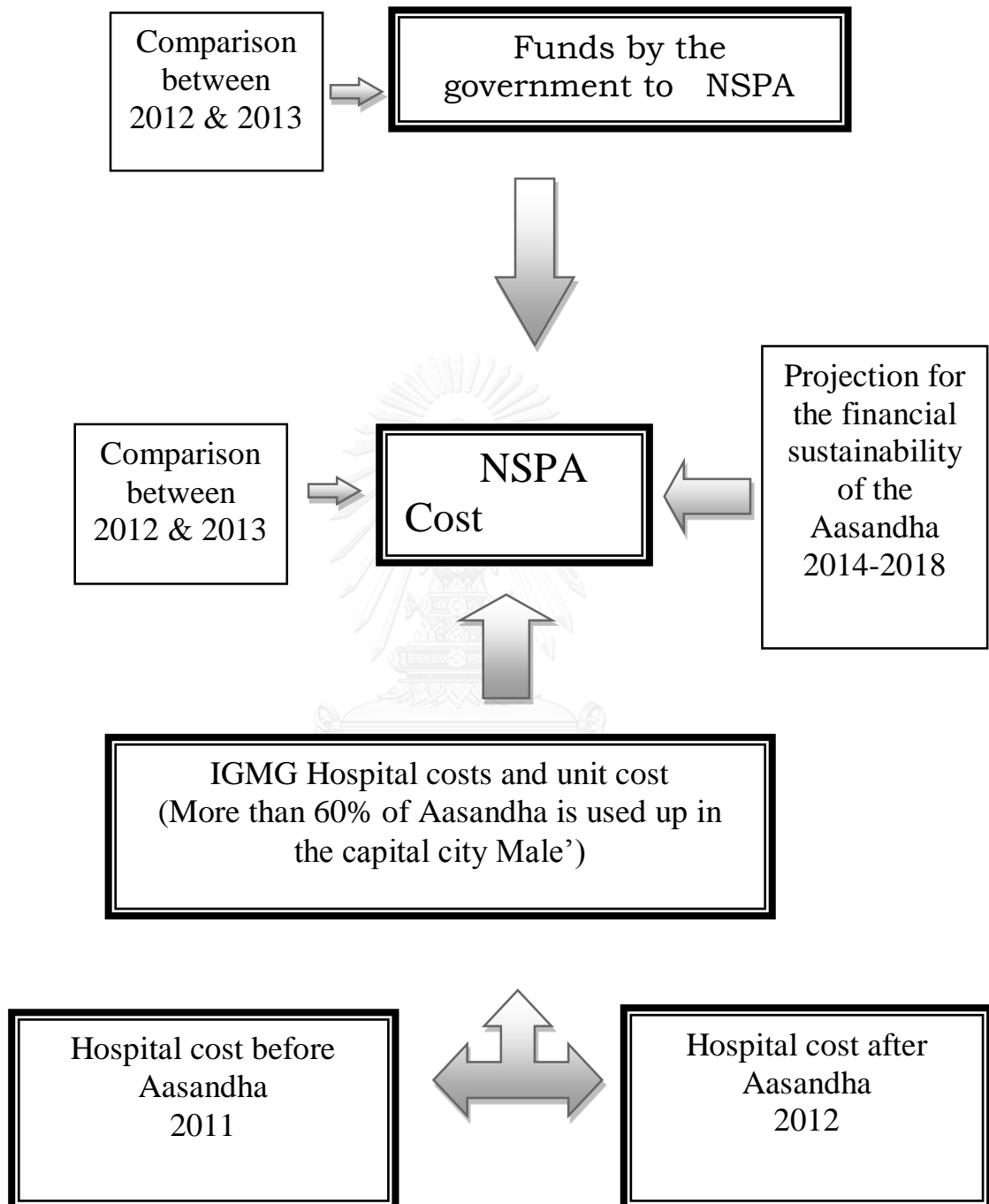
METHODOLOGIES

3.1 Research Design

The study will be conducted for Universal Health Insurance Scheme “AASANDHA” in the Maldives to assess the financial sustainability of the scheme.

- The study was done using the secondary data to analyze the cost of Indhira Gandhi Memorial Hospital, in the year 2011 and 2012, before and after the introduction of the Aasandha Scheme. The data were gathered from statistical records, financial reports from the hospital and data reported in the Government of Maldives Budget Statements. Financial reports of the hospital included the income statements and the financial statements of the hospital. These reports were provided by the administrators of the hospital.
- This research study is a descriptive study using the primary data to explore the scheme focusing on the financial sustainability of the ‘Aasandha Scheme’ .Furthermore, to study the financial sustainability of the scheme secondary data were gathered from statistical records, financial reports NSPA records, data reported in the Government of Maldives Budget Statements, Ministry of Health, and annual health sector reviews and also from projected data from IMF.

Figure 3.1 Conceptual frame work



3.2 Conceptual Framework

The conceptual framework (figure 3.1) of this study relates to the financial sustainability of the 'Aasandha' for the five years 2014-2018. As the financial sustainability involves forecasting for the future, macroeconomic forecasts provide a mandatory stand for which the health care financing can be thoroughly assessed. For this, projections are calculated by using the macro economic data, population growth and hospital cost to have a clear foreseen for the next five years 2014-2018.

Furthermore, this framework relates to the comparison between the cost of the hospital before and after the introduction of the "Aasandha" scheme (2011 and 2012) and shows the effect of the removal of the Rf 100,000 ceiling on the sustainability of the Aasandha scheme.

3.3 Data Collection

Prior to continuing with the data collection, an official approval was sought from National Health research Committee, Ministry of Health and Gender. The hospital administration was contacted regarding the availability and accessibility of the data of cost information in the hospital.

For this research, two types of data were gathered. These include primary and secondary data. The primary data was derived from the answers given by the key informants during the interview. Two administrators from the hospital were interviewed to fulfill the qualitative approach of this study research. For the review on the financial sustainability of the Aasandha the two administrators were interviewed to find out about the policy indications and the problems relating to the scheme.

Secondary data was collected from the main hospital in the country, the IGMH. It is assumed that the hospital uses the direct allocation method for the hospital costing. This is the simplest technique where the total direct cost of each centre is directly allocated to the absorbing cost centres. The total material costs, labor cost and the capital costs were identified and then passed

down to the inpatient and outpatient respectively. Full cost was determined and unit cost was obtained at the end of the analysis.

Furthermore, secondary data was collected from the administrators of the Aasandha scheme. For this, the administrators of NSPA was contacted. The total government funds provided for the scheme and data on administrative costs, referrals to abroad and total costs of the Aasandha for the year 2012- 2013 was collected from the monthly records of the scheme.

3.4 Research Instrument

The research instrument for the qualitative study was the interview guide and questions. These interviews were used as a tool to explore the financial sustainability of the scheme in terms of the funds and costs it incurs. Key informants were interviewed to further explore on the areas:

- Measures used to analyze the behavior of the providers.
- Ways used to monitor and evaluate the behavior of the providers.
- Measures taken to control the cost of the Aasandha scheme and ways to manage it to sustain it in the future.
- Suggestions on the effect of the removal of the Rf100,000 ceiling on the financial sustainability of the scheme.
- Suggestions for further improve the scheme in the future.

The administrators were interviewed for further inquiries about the scheme policy and the sustainability to explore the characteristics of the scheme.

The following instruments were used to collect the secondary data for the study on the hospital costs for 2011-2012.

- Financial records of the hospital 2011-2012
- Records on the admission OPD and casualty consultations
- Records on the admission IPD and other diagnostic services
- Total operating cost of the hospital for the year 2011-2012

The following instruments were used to collect the secondary data to study the financial sustainability of the scheme in terms of the total funds and total costs of the scheme:

- Monthly financial records of the Aasandha for the year 2012-2013
- Monthly records and costs sheets to referrals to abroad for the year 2012-2013
- Macro-economic data and population growth from IMF dated on August 2014.
- Microsoft excel program for analysis.

3.5 Data Source

- The following records were used as a means of data collection.
- The organizational chart of the hospital
- List of hospital staff from the administrators of the hospital
- Labour cost information: from salary sheets and individual sheets available from the hospital.
- Medical and non-medical supplies information: from the finance department.
- Capital cost information: from the finance department and from the annual financial sheets and past records available in the hospital.
- The number of outpatient, inpatient, and number of admissions: from the medical records section of the hospital.

- Users and provider behavior - Interviews and answers collected from the administrators of hospital, NSPA.
- Ministerial Accounts using the Ministry of Health & Family Annual report (The Maldives Health Statistics)
- “Aasandha” records of funds and costs: from the administrators of NSPA
- Referrals abroad: finance department of Aasandha, NSPA
- Interview from the key informants.

3.6 Study Method

- For the hospital costing it is assumed that the hospital uses the simple direct method of cost allocation. In this study we assume that the cost of 14 OPD is equal to 1 IPD which is a standard methodology and quick way of estimating unit cost of hospital (Tisayaticom T, Patcharanarumol W & Tangcharoensathien, 2001).The quick method expedites cost comparisons among various health centers and hospitals. The costs were collected and then allocated for three main groups. Material costs, labor costs and capital costs.
- For the Aasandha scheme, government funds received and total cost was identified as the two main groups. The cost was then categorized to services, referrals to abroad and administrative cost. Likewise, the funds were categorized as funds received and funds due from the government.

3.7 Compiling the Total Cost of Hospital

There are three main types of cost involved; labour cost material cost and capital cost. Total cost is the sum of the labour cost, material cost and the capital cost.

3.7.1 Labour Cost of Hospital

To collect labour cost the administration was approached to find the number of personnel working in the hospital during the years 2011-2013. Then, the records of their actual salaries and other allowances were collected for the same years.

The total labour cost includes:

- Basic salary
- Professional allowances
- Long term allowance given for staffs who has worked for the government more than 10 years)
- Special bonus (given for all the Muslims during the month of Ramadan)
- Over time allowance (1/3 of the basic salary)
- Living allowances and special allowances (given to all the expatriate personnel)
- Fringe benefits (paid for expatriate in the form of house rent and other bills)

In addition to this the labour cost was determined according to the salary sheets and other records provided by the administration.

3.7.2 Material Cost of the Hospital

To compile the material cost it was divided in to the following groups:

1. Medical Supplies

Medical supplies are all the medical consumables that are used when providing medical procedure to a patient. This cost information on medical supplies were collected from the finance department

of the hospital. This department is responsible in supplying all the medical consumables to all the other departments of the hospital.

2. Drugs used in the hospital

The drugs used within the inpatient wards and in the emergencies are sent to the hospital by the Ministry of health (Department of medical services). The finance department in the hospital is responsible in providing the required drugs for the emergencies and inpatient wards. However after 2012 most required drugs were covered for the patients from the Aasandha scheme. The cost information relating to drugs were collected from the supply records in the finance department. As there is no pharmacy attached to the hospital the drugs which the doctors prescribed was not included in this study. Those costs were directly born by the patients in the year 2011 and later in 2012 it was added to the Aasandha cost.

3. Office Materials and General Supplies used in the hospital

Office materials and other general supplies records were directly collected from the finance department. These records were in the financial records. The supply department does not have separate records of costs for each department. When the administration was asked they have explained that these cost include the materials bought for housekeeping, maintenance, other materials bought for maintenance of vehicles and electricity maintenance.

4. General utilities used in the hospital

General utilities included electricity expenses, Internet facilities and telecommunication and telephone facilities. This information was calculated from the finance department and from the

expenses records. Later the total was summed up from different sheets to find the total for the year 2011, 2012 and 2013.

5. Other costs in the hospital

Other cost includes staff traveling cost, expenses for staff improvement programs, other transport expanses and maintenance expenses. This information was shown in the financial records of the hospital.

3.7.3 Capital Cost

The capital cost includes the major equipment, vehicles, machineries and building etc. These were all long term assets of the hospital that lasted for more than one year. The information on capital cost was collected from the finance and records section of the hospital. The figures in the financial records were used to find the total capital cost, and the depreciation costs were collected from the same records.

3.8 Aasandha Cost and funds Capital Cost

Aasandha costs and funds includes the total amount received as funds from the government. These figures were collected from the administrators of the scheme (NSPA). Monthly records were collected to find the total funds for each month. The total funds were divided in to two categories, funds received and funds due from the government.

Here the total funds received means the budgeted amount that needs to be transferred to the Aasandha fund from the government. The funs due here means the amount the government still owes to the Aasandha which needs to be transferred sooner.

Similar way the total cost was collected from the monthly records of the Aasandha administrators. The total cost was divided in to services, referrals to abroad and administrative costs. The service costs includes all the inpatient, outpatient and drug costs provided to the beneficiaries during the year 2012 and 2013. Besides, the total costs for services does not mean that the bills were all cleared. The total cost includes how must spent and how much is owed to the services.

3.9 Data Analysis for Hospital Costing

With the limitations, after collecting the data on financial costs of the hospital the data was fed to Microsoft excel and designed for calculating the costs of the hospital. The data were entered and cost information was transferred in to the sheets as capital cost, material cost and labour cost. Then there by total cost was determined by summing up all the costs respectively.

Total cost: Capital cost+ labour cost+ material cost

Total Operating cost: labour cost+ material cost.

Then total cost of supporting and additional units allocate to patient service centers (outpatient and inpatient). Unit cost per outpatient visit and admission is derived from the full cost of patient service units divided by its relevant number of services produced. The quick method is used as it is simpler, the total annual operating expenditures (labor and material) for the whole hospital was divided by weighted output.

The factors of 1 and 18 are employed for this hospitals

3.9.1 Data Analysis for Cost and Funds of Aasandha

The monthly records of costing for the Aasandha was collected from the NSPA and fed to the Microsoft excel for calculating the total amounts spent as referral to abroad, administrative cost

and service costs. Similar way the monthly records of funds received was fed to the Microsoft excel to come up with the amount received as funds and amount due.

Projections for the next five years 2014-2018 was done in line with the financial sustainability of the scheme with different scenarios of costs and funds.

For the sensitivity analysis 1% increment and 1% decrease was taken in to consideration to find the effect of the revenue to the Aasandha as a percentage of total government revenue. This amount was taken as an assumption from the administrator's interview. According to the key informants there will not be any increment more than 1%. Furthermore the administrator explained that the policy level discussions were only based on 1 percent increase.

3.9.2 Data analysis for the qualitative research

Two administrators from the NSPA were interviewed for the qualitative research of the study. In this many assumptions and recommendations were based to the answers given from these key informants. As the administrator was the only key informant and the main person who takes the policy level decisions his answers to this research was very much important to make further recommendations.

All the costs in this study were calculated in Maldivian Rufiyaa (MRf), the exchange rate is 1 US dollar is equal to Rf 15.42.

CHAPTER 4

RESULTS

4.1 General Data on Hospital Costs

The Indira Gandhi Memorial Hospital (IGMH), a gift from the Government of India is one of the most significant hospitals in the country. A hospital with its wide ranges of departments and recent diagnostic facilities, maintained by qualified and experienced clinical personnel, has been an important breakthrough in the development of health services in the Maldives. Located in the capital city, Male' IGMH is a 275 beds hospital managed by 1,200 staffs.

The total Averages, Rates and Total admissions in the IGMH for the year ended 2011, 2012 and 2013 are represented in the table 4.1.

During the year 2011 a total of 1,000 staffs worked in the hospital and during 2012 the staff turnover changed to 1,100. In the year 2011 there were 284,462 outpatients and during the year 2012 it decreased to 268,237.

Furthermore, in the year 2013 the outpatient rates increased to 285,331. However, the inpatient admissions shows a decrease from 14,105 to 13,935. The average bed occupancy rate has declined from 82.71% to 76.84% during the year 2011 to 2012. The diagnostic services shows a drastic increase throughout the three years. The rate of dialysis has increased from 10,057 to 11,441 and to 12,814 during 2011, 2012 and 2013 respectively.

Additionally, the laboratory investigations have increased from 877,401 to 969,930 after the introduction of the 'Aasandha' Scheme. And in 2013 it again increased to 12,377,80. Radiology

services have increased to 103,601 from 95,171. Furthermore, it again rose up to 115747 in the year 2013.

The table 4.1 represents the average outpatient/inpatient and number of admissions during the year 2011, 2012 and 2013. The table also shows the number of OPD casualty consultations, inpatient admissions and the diagnostic services that has taken place in the years 2011 to 2013.

Table 4.1 Averages, Rates and Total admissions in the IGMH 2011 - 2012 - 2013

	Year 2011	Year 2012	Year 2013
<u>Number of OPD and Casualty Consultations</u>			
OPD consultation	126,493	108,145	98,629
Casualty consultation	157,969	160,092	186,702
Total OPD and Casualty	284,462	268,237	285,331
<u>Number of Inpatient</u>			
Admissions	14,105	13,935	13,099
Discharges	14,092	14,014	13,082
Average length of stay	5.81	5.68	5.59
Average daily census	213	204	193
Average Bed Occupancy rate	82.71%	76.84%	71.43%
<u>Number of Diagnostic services</u>			
Dialysis	10,057	11,441	12,814
Laboratory investigations	877,401	969,930	12,377,80
Radiology	95,171	103,601	115,747
CT Scan	3,853	4,911	2,811
Ultra sound scan	11,152	13,230	11,808
X-ray	80,026	85,249	100,906
Radiology Special Investigation	140	211	222
<u>Other treatments</u>			
Physiotherapy	32,137	18,956	36,541
Speech therapy	952	131	469
Surgeries in OT	6,023	6,427	5,090

4.2 Total Costs

The total costs details of IGMH for the year ended 2011, 2012 and 2013 are represented in the table 4.2. Details on labour cost, material cost and capital cost are shown respectively for the years before and after the implementation of the 'Aasandha' scheme.

The total labour cost of the hospital for the year 2011 is Rf 301,232,456.53. And for the year 2012 it decreased to Rf 253,476,037.11. However it again increased to Rf 354,443,321.22 at the end of 2013. Labour cost consists of salary, allowances and other benefits for the employees.

The total material cost for the hospital for the year 2011 is Rf 61,140,278.95. Unlike the labour cost, material cost has increased to Rf 79,129,823.51 at the end of 2012. In the year 2013 the results showed that material cost increased to Rf 98,154,564.51.

Prior to the introduction of the 'Aasandha' scheme the total capital cost of the hospital was Rf 15,112,506.80. And after 'Aasandha' implementation it decreased to Rf 10,825,356.81. However, at the end of 2013 capital cost again increased to Rf 13,568,223.21.

Total Cost of Indhira Gandhi Memorial Hospital 2011, 2012 and 2013

Table 4.2

Total cost profile	2011	2012	2013
	Rf	Rf	Rf
Capital costs	15,112,506.80	10,825,356.81	13,568,223.21
Material Costs	61,140,278.95	79,129,823.51	98,154,564.51
Labour Costs	301,232,456.53	253,476,037.11	354,443,321.22
Total	377,485,242.28	343,431,217.43	466,166,108.94

4.3 Total Cost Profile of IGMH

The total cost IGMH for the year ended 2011 is RF 377,485,242.28 as shown in Table 4.3. The total cost comprise of Rf 301,232,456.53(79.80%) as labour cost, Rf 61,140,278.95(16.20%) as material cost and Rf 15,112,506.80 (4.00%) as capital cost. Out of the cost profile the highest percentage of 79.80% is consumed as labour costs and the least consumed was for the capital cost (4.00%).

At the end of the year 2012 the total cost of the hospital was Rf 343,431,217.43 as shown in the table below (Table 4.3). The total includes Rf 253,476,037.11(73.81%) as labour cost, Rf 79,129,823.51(23.04%) as material cost and Rf 10,825,356.81 (3.15%) as capital costs. Similar to the year 2011 out of the total costs profile the highest percentage of 73.81% was consumed as labour cost and the least consumed was for the capital cost(3.15%).

The year 2013 cost profile shows that the total cost of the hospital was Rf 466,166,108.94. Rf 354,443,321.22 (76.03%) was for labour cost, Rf 98,154,564.51(21.06%) as material cost and Rf 13,568,223.21(2.91%) as capital cost. Similar to the years 2011 and 2012 the highest percentage of 76.03% was consumed as labour cost and the least was for the capital cost (2.91%).

Table 4.3 Total Cost profile of IGMH 2011, 2012 and 2013

2011	Rf	%
Capital costs	15,112,506.80	4.00
Material Costs	61,140,278.95	16.20
Labour Costs	301,232,456.53	79.80
Total recurrent and capital costs	377,485,242.28	100.00
2012	Rf	%
Capital Costs	10,825,356.81	3.15
material Costs	79,129,823.51	23.04
Labour Costs	253,476,037.11	73.81
Total recurrent and capital costs	343,431,217.43	100.00
2013	Rf	%
Capital Costs	13,568,223.21	2.91
material Costs	98,154,564.51	21.06
Labour Costs	354,443,321.22	76.03
Total recurrent and capital costs	466,166,108.94	100.00

4.4 Total Cost Profile of IGMH inpatient and outpatient

The total cost IGMH for inpatient and outpatient for the year ended 2011, 2012 and 2013 is shown in Table 4.4. It is assumed that 14 OPD is equal to 1 IPD. The quick method is used for the total annual operating expenditures for the whole hospital and is divided by weighted output.

2011- The total capital cost comprise of Rf 14,033,042.03 for IPD and Rf 1,079,464.77 for OPD.

While Total Material Cost comprise of Rf 56,773,116.17 for IPD and Rf 4,367,162.78 OPD. The Total Labour cost comprise of Rf 279,715,852.49 for IPD and Rf 21,516,604.04.

2012 - The total capital cost comprise of Rf 10,052,117.04 for IPD and Rf 773,239.77 for OPD. The

Total Material Cost comprise of Rf 73,477,693.26 for IPD and Rf 5,652,130.25 OPD. While Total Labour cost comprise of Rf 235,370,605.89 for IPD and Rf 18,105,431.22.

2013- The total capital cost comprise of Rf 12,599,064.4 for IPD and Rf 969,158.80 for OPD. While

Total Material Cost comprise of Rf 91,143,524.19 for IPD and Rf 7,011,040.32OPD. The Total Labour cost comprise of Rf 329,125,941.13 for IPD and Rf 25,317,380.09.

Table 4.4 Total Cost profile of IGMH inpatient and outpatient for 2011, 2012 and 2013

2011	Rf	IDP	OPD
Capital costs	15,112,506.80	14,033,042.03	1,079,464.77
Material Costs	61,140,278.95	56,773,116.17	4,367,162.78
Labour Costs	301,232,456.53	279,715,852.49	21,516,604.04
Total recurrent and capital costs	377,485,242.28	350,522,010.69	26,963,231.59
2012	Rf	IDP	OPD
Capital Costs	10,825,356.81	10,052,117.04	773,239.77
material Costs	79,129,823.51	73,477,693.26	5,652,130.25
Labour Costs	253,476,037.11	235,370,605.89	18,105,431.22
Total recurrent and capital costs	343,431,217.43	318,900,416.19	24,530,801.25
2013	Rf	IPD	OPD
Capital Costs	13,568,223.21	12,599,064.41	969,158.80
material Costs	98,154,564.51	91,143,524.19	7,011,040.32
Labour Costs	354,443,321.22	329,125,941.13	25,317,380.09
Total recurrent and capital costs	466,166,108.94	432,868,529.73	33,297,579.21

4.5 Unit Cost in the year 2011

The unit cost of IGMH in the year 2011 represented in the Table 4.5 .The unit cost of services was estimated to the number of patient's visits, admissions for different purposes. Unit cost for IPD for the year 2011 was Rf 24,850.90 for the IPD and unit cost for OPD was Rf 94.79.

And also the Table 4.4 comprise of each unit cost for the material cost, capital costs and labour cost of the IGMH.

Table 4.5 Total Unit Cost Profile of IGMH inpatient and outpatient for 2011

2011	Unit Cost IPD (Rf)	Unit Cost OPD(Rf)
Capital costs	994.90	3.79
Material Costs	4,025.03	15.35
Labour Costs	19,830.97	75.64
Total recurrent and capital costs	24,850.90	94.79

4.6 Unit Cost in the year 2012

The unit cost of IGMH in the year 2012 is represented in the Table 4.6. Unit cost for IPD for the year 2011 was Rf 22,884.85 for the IPD and unit cost for OPD was Rf 91.45.

The Table 4.6 comprise of each unit cost for the material cost, capital costs and labour cost of the IGMH.

Table 4.6 Total Unit Cost Profile of IGMH inpatient and outpatient for 2012

2012	Unit Cost IPD (Rf)	Unit Cost OPD(Rf)
Capital Costs	721.36	2.88
material Costs	5,272.89	21.07
Labour Costs	16,890.61	67.50
Total recurrent and capital costs	22,884.85	91.45

4.6 Unit Cost in the year 2013

The unit cost of IGMH in the year 2013 is represented in the Table 4.7. Unit cost for IPD for the year 2011 was Rf 33,045.92 for the IPD and unit cost for OPD was Rf 116.70.

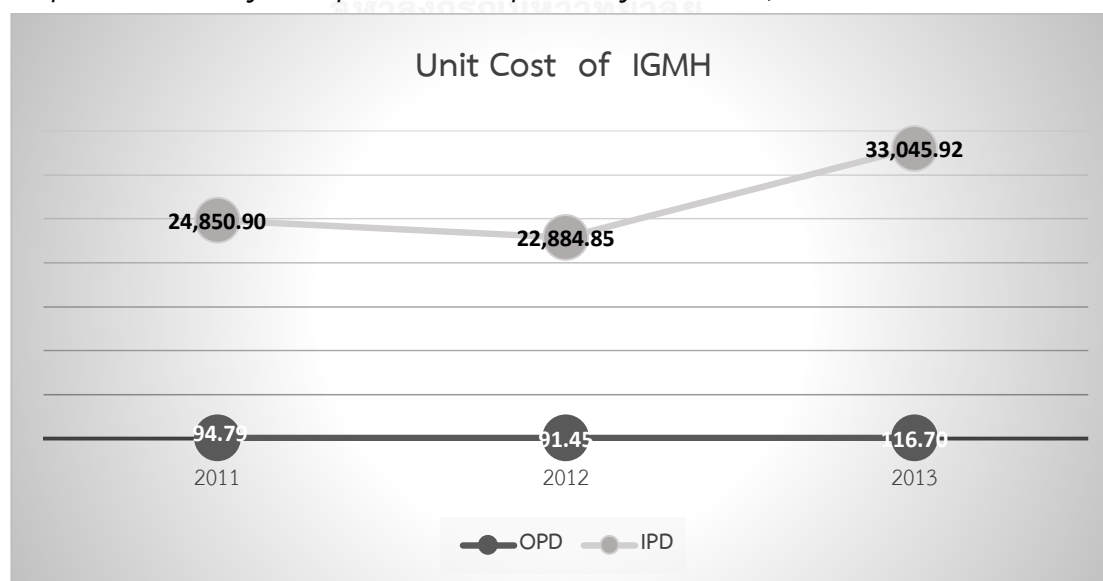
The Table 4.6 comprise of each unit cost for the material cost, capital costs and labour cost of the IGMH.

Table 4.7 Total Unit Cost Profile of IGMH inpatient and outpatient for 2013

2013	Unit Cost IPD(Rf)	Unit Cost OPD(Rf)
Capital Costs	961.83	3.40
material Costs	6,958.05	24.57
Labour Costs	25,126.04	88.73
Total recurrent and capital costs	33,045.92	116.70

The graphs 4.1 represents the unit cost of the IGMH for the year 2011, 2012 and 2013 for the OPD and IPD services.

Graph 4.1 Unit cost for Outpatient and Inpatient of IGMH 2011, 2012 and 2013



4.7 'Aasandha' Total Cost and funds

The total cost and funds of 'Aasandha' for the year 2012 and 2013 is represented in Table 4.5 and graph 4.2. The total funds received were calculated by monthly receipts from the Ministry of finance. The cost included the services provided by the scheme, referrals to abroad and administrative cost.

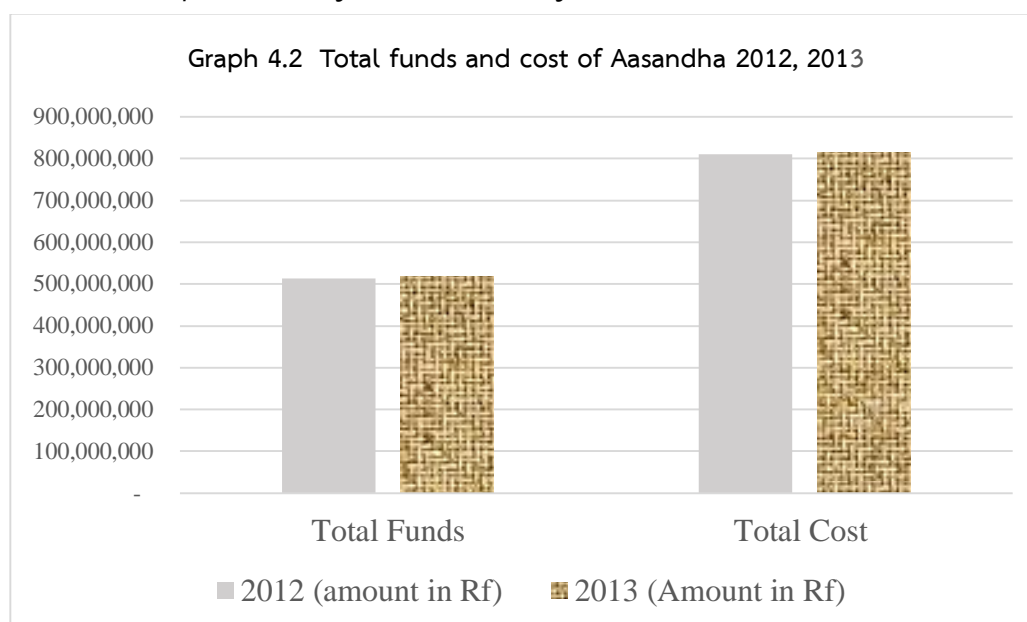
The total funds received for the year 2012 was Rf 512,889,638 while it increased slightly in the year 2013 to Rf 517,466,011. The total cost for the year 2012 was Rf 810,810,640 and in the year 2013 it was Rf 814,740,394. There was a total of 0.89% of increase in the funds while the results showed an increase of 0.48% increase in the costs of Aasandha.

From the qualitative research of this study it was found from the administrators that the most cost was included in the referrals to abroad. And this was one reason to increase in the cost containment.

Table 4.5 Cost and funds for Aasandha 2012 and 2013

	2012 (amount in Rf)	2013 (Amount in Rf)	Increase in funds/cost	% Increase
Total Funds	512,889,638	517,466,011	4,576,373	0.89%
Total Cost	810,810,640	814,740,394	3,929,754	0.48%

Graph 4.2 Total funds and Costs of Aasandha 2012 and 2013



4.8 'Aasandha' Cost for services and referrals to abroad

The total cost of 'Aasandha' services for the year 2012 and 2013 is represented in Table 4.6 and graph 4.3. The total cost of services was calculated by using the monthly costs of services of each month. The referrals to abroad include monthly costs of sending the patients and one helper to accompany the patient to abroad (only from the hospitals included in the scheme).

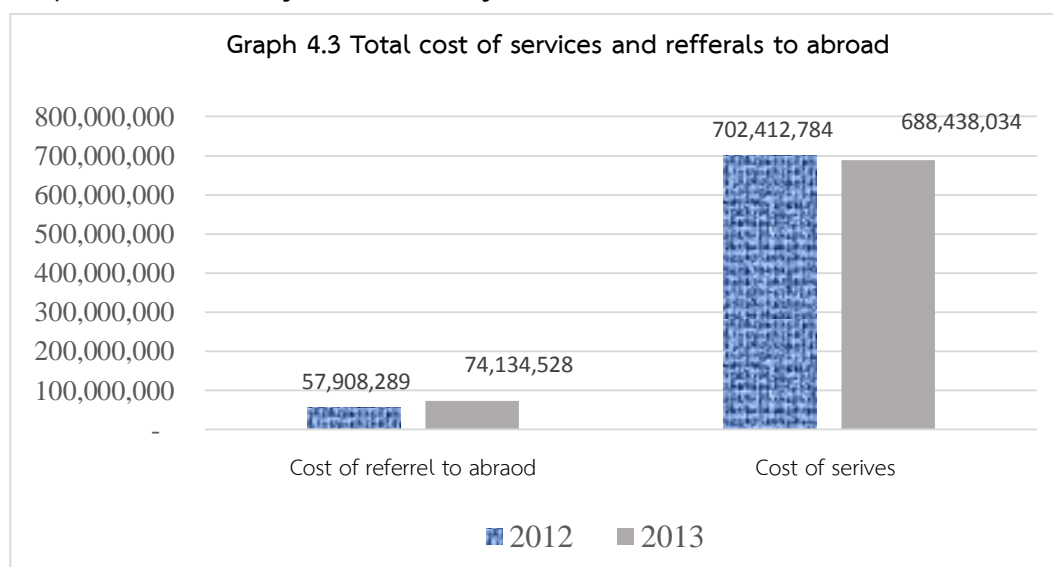
The total cost of services for the year 2012 was Rf 702,412,784 while it decreased 1.99% in the year 2013 (Rf 688,438,034). The total costs to referrals to abroad for the year 2012 was Rf 57,908,289 and there was an increase of 28% in the year 2013. The total cost of referral to abroad increased to Rf 74,134,528 for the year 2013.

According to the administrator there were no proper screening by Aasandha medical team before authorization to the referrals to abroad. Therefore a quite a number of patients had the easy excess to this benefit of the scheme.

Table 4.6 Cost of referral to abroad and cost of services of Aasandha 2012 and 2013

	2012 (amount in Rf)	2013 (Amount in Rf)	% Increase/decrease
Cost of referral to abroad	57,908,289	74,134,528	-28.02%
Cost of services	702,412,784	688,438,034	1.99%

Graph 4.3 Total costs of services and referrals to abroad Aasandha 2012 and 2013



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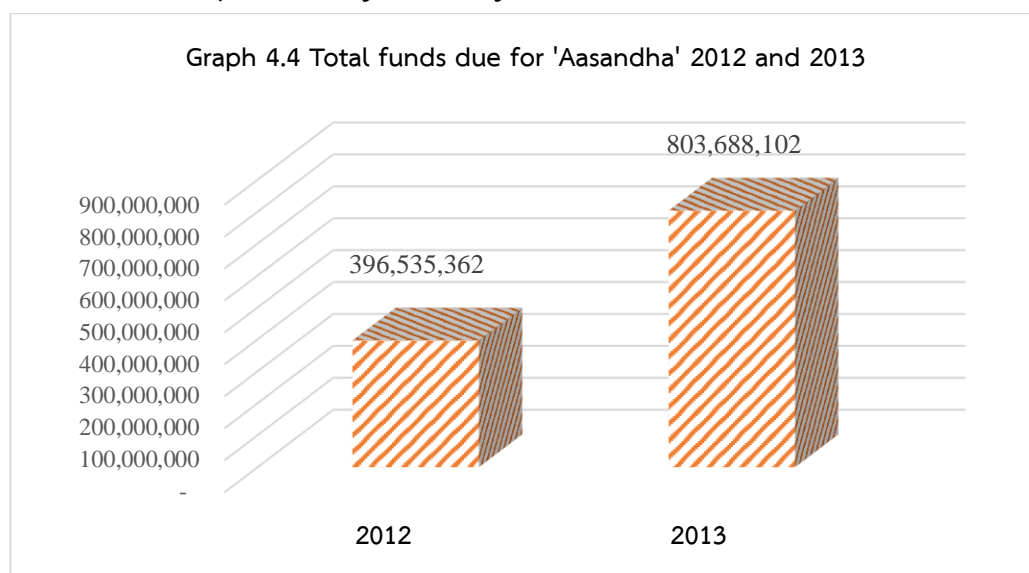
4.9 Total funds received and total funds due for 'Aasandha'

The table 4.7 represents the total funds received from the government and the total funds due for 'Aasandha' for the year 2012 and 2013. These funds were calculated from the monthly records of the funds for the years 2012 and 2013. The total funds received for the year 2012 was Rf 512,889,638 the total funds for the year 2013 was Rf 517,466,011. However the total due for the year 2012 was Rf 396,535,362 while it rose very high to Rf 803,688,102.

Table 4.7 Total funds received and total fund due on 'Aasandha' 2012 and 2013

	2012 (Rf)	2013(Rf)
Total Funds received	512,889,638	517,466,011
Total funds due	396,535,362	803,688,102

Graph 4.4 Total funds due for Aasandha 2012 and 2013



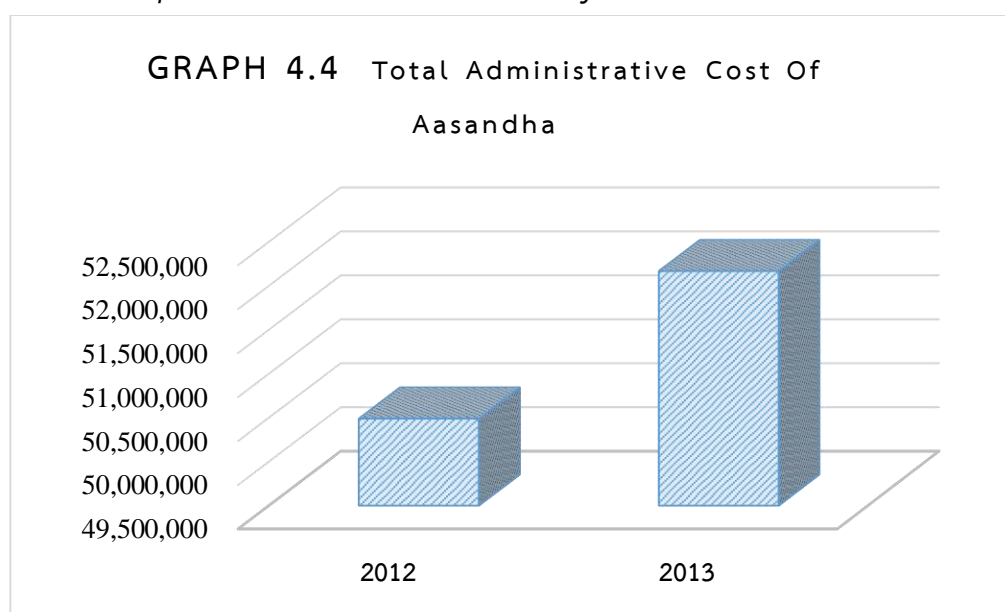
4.9.1 Total Administrative cost of 'Aasandha'

The table 4.8 represents the total administrative cost for the 'Aasandha' for the year 2012 and 2013. These costs were calculated from the monthly administrative records and from the data collected from Aasandha financial records for 2012 and 2013. These costs include other charges, TPA charges and administrative costs for the day to day running of the whole scheme. The total administrative cost for the year 2012 was Rf 50,489,567 and in the year 2013 it increased to a total of Rf 52,167,833

Table 4.8 Total administrative cost of 'Aasandha' 2012 and 2013

	2012	2013
Total Administrative cost	50,489,567	52,167,833

Graph 4.4 Total Administrative Costs of Aasandha 2012 and 2013



4.10 Projection for the Financial Sustainability of the Aasandha

The financial sustainability is the comparison between the government's revenue and how much they generate for the benefit in terms of the monetary value. The Table 4.9 shows the projection for the financial sustainability in terms of the funds and cost. The projection was based on the assumption that there is an increase of 0.89% in the funds/revenue provided by the government while there will be an increase of 0.48% increase in the cost of Aasandha.

Table 4.9 Projection for the Financial Sustainability of the Aasandha in terms of Funds and Cost

Year	Funds/Revenue for Aasandha (RF)	Cost of Aasandha (RF)	Financial Sustainability (R-C) RF
2012	512,889,638	810,810,640	(297,921,002)
2013	517,466,011	814,740,394	(297,274,383)
2014	522,071,458	818,651,148	(296,579,690)
2015	526,717,894	822,580,674	(295,862,779)
2016	531,405,684	826,529,061	(295,123,377)
2017	536,135,194	830,496,400	(294,361,206)
2018	540,906,797	834,482,783	(293,575,986)

4.11 Projection for the Financial Sustainability of the Aasandha with the increase in line with the government revenue as a percentage of GDP

The Table 4.10 represents the projection for the financial sustainability of Aasandha in terms of the percentage of government revenue. During the year 2012 the government Revenue as a Percentage of GDP was US \$659,564,900 while US \$33,261,325.42 was generated for the Aasandha, which comes to an estimated of 5.04% of total government revenue as a percent of Aasandha revenue. The table shows the projection for the government revenue and the how much the Aasandha revenue is generated if every year government uses 5.04% of its total revenue to the Aasandha.

Table 4.10 Projection for the Financial Sustainability of the Aasandha in terms of government revenue

		2012	2013	2014	2015	2016	2017	2018
Gross domestic product per capita, current prices	U.S. dollars	2,110,000,000	2,276,000,000	2,532,000,000	2,859,000,000	3,193,000,000	3,508,000,000	3,843,000,000
General government revenue	Percent of GDP	659,564,900	749,145,400	837,079,200	938,638,290	977,409,230	1,049,348,040	1,122,655,590
Total Government Fund for the Aasandha	US dollars	33,261,325.42	33,558,107.07	42,188,791.68	47,307,369.82	49,261,425.19	52,887,141.22	56,581,841.74

Note: Sources on GDP growth and Government Revenue as a % of GDP taken from IMF projections (attached in appendix)

Total Aasandha Revenue calculated on the 5.05% of Gov Revenue

4.12 Projection for the Financial Sustainability of the Aasandha in terms of population growth

The Table 4.11 represents the projection for the years 2014-2018 the increase in cost of Aasandha in terms of the population growth. When the total cost of Aasandha for the year 2012 is US \$ 52,581,754 the unit cost is US\$ 158.86. Therefore the projection of the cost of Aasandha in line with the growth of population is shown in the below table. For the year 2014 the total cost is estimated to be US\$ 54,330,120, and in 2015 it is US \$ 55,283,280, in 2016 US\$ 56,236,440, in 2017 US\$ 57,189,600 and in 2018 US\$ 58,142,760 is estimated as total cost of Aasandha.

Table 4.11 Projection of the Cost of the Aasandha in terms of population Growth

	2014	2015	2016	2017	2018
Total population	342,000	348,000	354,000	360,000	366,000
Total Cost of Aasandha (US \$)	54,330,120	55,283,280	56,236,440	57,189,600	58,142,760

4.13 Projection for the Financial Sustainability of the Aasandha

The financial sustainability is the comparison between the government's revenue and cost in terms of how much they generate for the benefit in monetary value. The Table 4.12 shows the projection for the financial sustainability in terms of the funds and cost. The projection for the year 2014-2018 shows how much the government funds to the Aasandha scheme and the total cost of the scheme.

Table 4.12 Projection for the Financial Sustainability of the Aasandha in terms of Funds and Cost

Year	Funds/Revenue for Aasandha (US\$)	Cost of Aasandha (US\$)	Financial Sustainability (R-C) US\$
2012	33,047,013	52,581,754	(19,534,741)
2013	33,558,107	52,836,601	(19,278,494)
2014	42,188,792	54,330,120	(12,141,328)
2015	47,307,370	55,283,280	(7,975,910)
2016	49,261,425	56,236,440	(6,975,015)
2017	52,887,141	57,189,600	(4,302,459)
2018	56,581,842	58,142,760	(1,560,918)

4.14 Sensitivity Analysis on the financial sustainability of the Aasandha Scheme

The Table 4.11 represents the rates to be used for the sensitivity analysis. The table illustrates the effect to the proportion of the Aasandha revenue as a percentage of total government revenue if there is an increase of 1% and a decrease of 1%. As before it is assumed that the government uses 5.04% of the government revenue as Aasandha fund.

Table 4.13 Rates and proportion of the Aasandha Revenue for the Sensitivity Analysis

Aasandha Revenue	Proportion of the As Rev as a % of Gov Rev	2014 (\$)	2015 (\$)	2016 (\$)	2017 (\$)	2018 (\$)
Aasandha Revenue as a % of total Gov Revenue	Increase to 6.04%	50,559,584	56,693,753	59,035,517	63,380,622	67,808,398
Aasandha Revenue as a % of total Gov Revenue	decrease to 4.04%	33,818,000	37,920,987	39,487,333	42,393,661	45,355,286

4.15 Sensitivity Analysis on the financial sustainability of the Aasandha Scheme.

The Table 4.14 represents the sensitivity analysis for the projection of the financial sustainability of Aasandha if the government reduces the proportion of the Government revenue to Aasandha to 4.04%. The result shows that the by using 4.04% of the proportion of the Government revenue as Aasandha revenue shows that there is no sustainability in the scheme by reducing 1%.

Table 4.14 Sensitivity Analysis and the projection on the financial sustainability of

Aasandha

Year	Funds/Revenue for Aasandha (US\$) (4.04%)	Cost of Aasandha (US\$)	Financial Sustainability (R-C) US\$
2012	33,047,013	52,581,754	(19,534,741)
2013	33,558,107	52,836,601	(19,278,494)
2014	33,818,000	54,330,120	(20,512,120)
2015	37,920,987	55,283,280	(17,362,293)
2016	39,487,333	56,236,440	(16,749,107)
2017	42,393,661	57,189,600	(14,795,939)
2018	45,355,286	58,142,760	(12,787,474)

4.16 Sensitivity Analysis on the financial sustainability of the Aasandha Scheme.

The Table 4.15 represents the sensitivity analysis for the projection of the financial sustainability of Aasandha if the government increases the proportion of the Government revenue to Aasandha to 6.04%. The result shows that by using 6.04% of the proportion of the Government revenue as Aasandha revenue shows a sustainability starting from the year 2015 with increased in the proportion by 1 percent.

Table 4.15 Sensitivity Analysis and the projection on the financial sustainability of Aasandha

Year	Funds/Revenue for Aasandha (US\$) (6.04%)	Cost of Aasandha (US\$)	Financial Sustainability (R-C) US\$
2012	33,047,013	52,581,754	(19,534,741)
2013	33,558,107	52,836,601	(19,278,494)
2014	50,559,584	54,330,120	(3,770,536)
2015	56,693,753	55,283,280	1,410,473
2016	59,035,517	56,236,440	2,799,077
2017	63,380,622	57,189,600	6,191,022
2018	67,808,398	58,142,760	9,665,638

CHAPTER 5

DISCUSSION

5.1 Discussion on the Hospital Costing

The first part of the study attempted to analyze the cost and unit cost IGMH. Additionally, it was done in an attempt to have an insight to the unit cost and total cost of the main hospital located in the capital city, Male'. This study will attempt in assisting for further study of the health insurance in the country and will show the changes in the unit cost after and before the insurance scheme.

IGMH provides general and specialty care to the whole country. With the geographic barrier to the health care, people from all parts of the country come to IGMH to get the health care service. 'Aasandha' records showed that 63% of the expenditure is taken place in the capital city Male' the remaining 37 % is spread to other islands. The unit cost and the total cost will attempt to provide an insight trends in the hospital cost after the introduction of the health insurance scheme 'Aasandha' in the Maldives.

The study was able to generate general cost profile and unit cost of health services of the hospital for the IPT and OPT for the year ended 2011 and 2012, 2013. The main findings were categorized according to the cost before and after the introduction of the 'Aasandha' scheme.

The second part of the study was to compare the funds available for the 'Aasandha' and the cost of the scheme. Geography being a barrier to the health care, 'Aasandha' health insurance scheme was introduced in the year 2012 to provide health services to the whole population of the country.

The study revealed that the most of the 'Aasandha' cost is concentrated in the capital city Male' where most of the service providers are located. The main objective of this scheme was to provide

free health care to the people of the country. The study was able to generate total costs and funds of the scheme for the year 2012 and 2013. The main findings were categorized according to the costs, which included the cost of administrative, cost of services and cost of referrals to abroad. The total funds were categorized to funds received and funds due from the government.

5.1.1 Expenditure of the Hospital

The total expenditure of the hospital for the year 2011 was Rf 377,485,242.28. And after the introduction of the 'Aasandha' scheme in 2012 it was Rf 343,431,217.43. The data shows that both the years the operating cost of the hospital was higher. According to the result of the study the hospital had not exceeded the budget allocated for the year 2012.

5.1.2 Higher Labour Cost of Hospital

According to the study findings and from the administrators' interview it was found that approximately more than 80% of the total budget was spent on the labour cost during the year 2011 and 2012. From the total cost of 2011 about 80% was spent on labour cost while in 2012 it was 74%. Even with the decrease in the OPD and IPD visits the labour cost was higher in 2012.

This suggests the inefficiency and high wastage of resources; this could also imply miscalculations in the budgets and in the financial records. The changes in the system and record keeping during 2012 might be the reasons for the hospital staff to allocate resources correctly to the required services.

Hospital records and from the administrator 1 interview, there were quite a number of expatriate professionals working in the hospital. These expatriate trained professionals enjoy higher salaries and other fringe benefits compared to the local staff. During the year 2012 there were a total of

173 doctors working at the IGMH and among this approximately 50% was expatriate personnel. Additionally, all the physiotherapists were expatriates from abroad. There were total of 571 nurses working at the hospital during the year 2012 and among them 290 nurses were from abroad. However, expatriate staffs were not recruited by the hospital, they were hired directly under the Ministry of Health as we are in dire need for these professions.

According the literatures, health care heavily depends on the personnel contribution given to the labour intensive. And in this study findings also show that with the human resources being limited in the country we heavily depend on the expatriate medical staff to provide all kinds of health services. And all these expatriate personnel have to be brought from abroad just like the other medical equipment and drugs are imported.

5.1.3 Material cost and capital cost of the Hospital

Material cost during the year 2011 was approximately 26.20% while it increased in the year 2012 to 23.4%. The capital cost approximately covered 4 % of the total cost of the hospital during the year 2011 and during the year 2012 it was more than 3% of the total cost. This increase is due to the high cost spent on the materials and capital items imported from abroad.

For the high tech and fast results, we need expensive laboratory items and equipment to be brought into the service. Material cost will even be higher than this if the pharmacy service is included. However, the hospital does not have its own pharmacies and all the drugs cost was borne personally by the patients during 2011. However, during 2012 the drug cost was added to the 'Aasandha' cost.

Regardless to these the material cost has increased during the year 2012 and according the administrator these factors provide some explanation to the reasons behind this high material cost.

1. All materials and capital items are brought from abroad. With the lack of natural resources and local production we highly depend on the imported items.
2. Laboratory items are expensive and high tech equipment that needed to be brought from abroad too. And all these medical consumables and other items are procured by the Ministry of Health, so cost transportation and logistics costs are added to the final cost.
3. Hospitals need qualified personnel to maintain the high tech equipment and machineries. The problems faced due to not maintaining these equipment will lead to inability to achieve the maximum benefit of these materials and equipment.

5.1.4 Unit Cost of the Hospital

The unit cost for OPD for the year 2011 was Rf 94.79 while Rf 91.45 was for the year 2012 while it increased to Rf 116.70 in the year 2013. In the year 2011 the amount was borne by the patients from their pockets while in 2012 onwards the cost was added to the 'Aashaadha' cost.

The decrease in the unit cost was due to the decrease in the number of visits during the year 2012. The low admission rate and visits could be due to many reasons. One main reason is, awareness among the public on the 'Aasandha' scheme and its benefit packages. Secondly, high transportation costs and high living standard in the capital city is also another reason.

Low hospital performance and high unit cost shows that the utilization rate is low in IGMH. This may be due to draw backs in the system or in the quality of the health care provided in the hospital. There are quite a number of private clinics operating in the capital city and people would rather prefer to spend from out of pocket to get better quality services.

5.2 Cost and funds of 'Aasandha'

According to the study findings and from the review of the administrator's interview it was found that the total funds received by the Government for the Aasandha for the year 2012 was Rf 512,889,638 while for the year 2013 it increased to Rf 517,466,011. However, there were funds due from the government amounting to Rf 396,535,362 for 2012 and Rf 803,688,102 for the year 2013. This was due to the time taken in transferring the funds from the ministry of finance to the scheme administrators.

5.2.1 Total Cost and referral to abroad 'Aasandha'

The total cost of services for the year 2012 was Rf 702,412,784 while it decreased 1.99% in the year 2013 (Rf 688,438,034). The total costs to referrals to abroad for the year 2012 was Rf 57,908,289 and there was an increase of 28% in the year 2013. The total cost of referral to abroad increased to Rf 74,134,528 for the year 2013.

Even though, there was a decrease in the cost of Aasandha for the first year, it has shown an increase in the second year. By comparing the hospital costs and the utilization it can be seen that the first year fewer number of people have used up the scheme benefits. However, there was an increase of 28% seen in the referral to abroad. This cost was mainly increased due to the weak screening procedures in the Aasandha overseas referral system. The IGMH hospital being the only tertiary hospital in the country providing the scheme benefits was not enough to accumulate all the beneficiaries of the scheme. Many patients were given referral abroad authorization without proper screening by Aasandha health personnel.

Furthermore, according to the NSPA administrator's interview, there were no procedures to analyze the behavior of the providers, lacking this; inefficiency in the performance and behavior of the hospitals in the referral system abroad were reasons to increase in this cost.

Another important problem facing the Aasandha is lack of GP system, which is one of the reasons to increase in the cost containment. Patients directly accessing to the health facilities and to the specialized personnel increased the cost of the Aasandha.

Moreover, due to improper screenings, the patients were able to take referrals to abroad several times per year. Even with the ceilings these patients were given many more chances to be referred abroad under other welfare schemes. According to the scheme administrators, these travel coverage needs to be limited to 4 times per year and more screening is needed to contain the cost.

IGMH being the main hospital in the country lacks many services that are needed to provide to the scheme to the beneficiaries. The cancer patients, kidney transplant patients etc were needed to be referred abroad for further advanced procedures. Therefore, the capacity and services of the hospital need to be upgraded to meet the demand of these services. Additionally, lack of enough providers in the scheme is another reason to increase the cost in the referral abroad. As per the administrators, more providers should be included to increase the competition. To attract more service providers, the scheme should reduce the payment cycle which will be more attractive to the service providers.

5.2.2 Total Administrative cost of 'Aasandha'

The total administrative cost of 'Aasandha' for the year 2012 and 2013 was calculated from the monthly administrative records and from the data collected from Aasandha financial records. These

costs include other charges, TPA charges and administrative costs for the day to day running of the whole scheme. The total administrative cost for the year 2012 was Rf 50,489,567 and in the year 2013 it increased to a total of Rf 52,167,833.

According to the administrator the TPA charges should be reduced when making contract and need to adopt new ways to make direct contract with the service providers. The increase of 1.6% in the administrative costs shows that there is lack of mismanagement in regard to cost management. Preauthorization procedures and processes are lacked in the scheme administration.

Due to lack of screening in the system, many patients were able to change the treatment in between the procedures. According to the administrator, quite a number of patients switch their treatment in-between. For an example, when a person is referred to a cardiac treatment he/she cannot use that authorization to take treatment for an ophthalmic treatment unless the cardiologist refers with clinical justification. If the treatment is available in the Maldives, a patient shall not be eligible to get any medical treatment from abroad, unless there is life threatening situation. These switching of medical treatment in-between were one of the reasons to the increase of admin cost and total cost of Aasandha.

5.3 Projection to the financial sustainability of the Aasandha

The projection for the financial sustainability is assessed for each of the alternative macroeconomic data from the macroeconomic projections (in to the year 2018) from the International Monetary Fund (IMF). –attached in the appendix.

Different scenarios are assumed to study alternatives to the current Aasandha costs and the funds available to the scheme.

- When there is an increase 0.89% in the funds and 0.48% in the costs there is no sustainability in the years 2014 to 2018. If the cost measures were not taken properly, the removal of Rf 100,000 ceiling will affect the financial sustainability of the scheme.
- The projection on the total government funds for the Aasandha in line with the percentage of government total revenue shows that during the next 5 years (2014-2018) the expected government revenue increases and this might increase the government revenue for the Aasandha as well. However, the increase in the cost due to the removal of the Rf 100,000 ceiling will be affecting the scheme and its sustainability. Moreover, Aasandha faces many challenging drawbacks. The lack of cost control measures, and the lack of capacity in the hospital many patients are referred to abroad without monitoring procedures. This is one reason to boost the costs of referrals to abroad and the reason for affecting the sustainability.
- The sensitivity analysis in this study shows the effect of increasing the Aasandha Revenue as a percentage of total Government Revenue to 6.04% and the effect of reducing it to 4.04%. If the government reduces the proportion to 4.04% the results show no sustainability. However, if the government is willing to increase the proportion of the Aasandha revenue to a higher percentage, there might be sustainability. However, according to the administrators, there were no policy discussions to increase the Aasandha revenue proportion. By introducing coinsurance and copayment methods are ways to reduce the burden on the government side.
- With the increase in the population of the country the cost increases. If the cost measures are not taken properly, more people will be aware of the benefits of the scheme and this will affect the future financial sustainability. The expected population for the year 2018 is 366,000 while the cost increases to US\$ 58,142,760. This shows that with the increase in population the costs will be increasing and this will affect the financial sustainability of the scheme.

5.4 Strengths and benefit of the study

The main strength of this study is that this is the first study to provide an insight to the assessment of the financial sustainability of the health insurance scheme 'Aasandha' in the country. This study provides some important insight to the management of the hospital and the drawbacks in the record system.

Furthermore, this study showed the gaps in the resource allocation and this will encourage the administrators to keep full detail cost records of the system. The main ideas on resource allocation and utilization will benefit the administrators to look in to the costs in detail.

As the study of this hospital costs was carried out with the aim of assessing the financial sustainability of the health insurance scheme 'Aasandha', this will support to develop the insurance scheme of the country. Furthermore, the study can be used to modify and change the insurance system in the country. As the 'Aasandha' system covers up to Rf 100,000 for all the individual of the country, the burden to the government will increase if this ceiling is removed in the future.

Different scenarios are based on the projection for the financial sustainability of the scheme for the next five years 2014-2018. With the increase in the unit cost and total cost, the scheme will increase the burden to the government without the ceiling.

Maldives must consider the best option by looking at the social, economic and political status to further assess and study the insurance scheme in the country. This study will be useful to further assess and study the sustainability of the scheme.

5.5 Limitations

The analysis of this study was done using the financial costs in hospital. Different record keeping methods were used for the year 2011 and 2012. Therefore, the records were not kept in proper way. The analysis was done using the lump sum amounts shown in the financial statements. However, there were no such financial statements prepared for the year 2011. The data were collected by using record from different sources in the hospital. And in 2011 the hospital was under the health corporation and later after the political change in the country in 2012 the health corporation was abolished.

There were no estimated life years for the capital items. The depreciation amounts were calculated using the estimated amounts given by the hospital administrators.

The cost was not apportioned to different departments. The hospital does not keep any records that keep the costs for different departments.

There were no separate bills for different departments. The total lump sum amounts were recorded in the hospital.

With these limitations the unit cost result will be highly sensitive to any changes in the scenario.

With the time limitation and work load to be done to separate the costs to each department the analysis had used the financial costs and lump sum amounts to come up with the total costs.

In addition to this, to assess the financial sustainability fiscal space analysis is an important tool.

However, there was no such analysis available for this research.

CHAPTER 6

CONCLUSION

This study was done to provide the insight to the financial sustainability of the Health insurance scheme Aasandha. This study will assist in developing the health insurance scheme in the future and find ways to come up with the burden when the ceiling is removed.

The cost information (financial costs) of the hospital was collected from the Indhira Gandhi Memorial Hospital and compiled the labour cost, material cost, and capital cost. The total expenditure of the hospital during the year 2011 was Rf 377,485,242.28 and in the year 2012 was Rf 343,431,217.43.

The total cost of the Aasandha scheme is Rf 810,810,640 for the year 2012 while it increased to Rf 814,740,394 in year 2013. This increase might be due to the high cost in the referral to abroad. The total funds available for the scheme was Rf 512,889,637.55 for the year 2012 and increased to Rf 517,466,010.92.

The study result in the projection, shows that there is no sustainability of the scheme without the Rf 100,000 ceiling. Furthermore, the costs increases without proper cost control measures. Laws need to be amended to impose co-payment and co-insurance in to the system. Projections to the years 2014-2018 shows that the removal of the 100,000 ceiling will affect the total cost of the scheme and its financial sustainability.

6.1 Recommendations

6.1.1 Recommendations for the Hospital

- One of the objectives of this study is to analyze the unit cost of the hospital IGMH in the Maldives after and before the implementation of the health insurance scheme 'Aasandha'. The result of the unit cost and the total cost of the hospital can be used to scale up an idea for the financial sustainability of the scheme in the future and the problems associated with the removal of the ceiling.
- Reinforce and recruit more local professions by encouraging them to work in the public hospital rather than in the private hospital. The salary and more benefits can be provided for reinforce and attract more locals in the system.
- Encourage the hospital to keep proper costing records and use better allocation methods such as allocating appropriate costs to different departments and keeping consistency in the records system.
- To reduce wastage in the hospitals, especially labour cost. It is very important to analyze and find the factors effecting to high labour cost. And the Ministry of Health and the Government of Maldives must revise and review the remuneration and other benefits to the medical personnel in the hospitals to focus and develop long term qualified personnel to the country.
- All the staff of the hospital should be informed and educated about the cost information of the materials and the equipment. This will help the staff to realize the importance and the value of the materials that are imported from abroad.

Costing studies need to be done appropriately to strengthen the costing capacity of the hospital for further decision making process and to help further improve the health insurance in the country.

- Research and studies based on cost are important elements to study and assess the financial sustainability of the health insurance scheme.

6.1.2 Recommendations for the financial sustainability of the Aasandha Scheme.

- Laws need to be amended to impose copayment or co insurance to control the cost containment and the moral hazards.
- Implement ways to analyze the behavior of the providers and continuous monitoring should be done.
- There should be proper accreditation authorities under the under Ministry of Health for the proper guidance and granting the quality assured accreditations.
- Systematic mechanisms should be implemented to monitor and evaluate the providers so that better quality assured services could be given to the general public. Evaluation procedures for the providers must be identified and executed and the evaluation indicators must be specified.
- Better screening methods should be implemented in the scheme to control the costs in the referrals to abroad. Qualified medical team must have a transparent screening methods to control the costs of referral to abroad and to prevent switching of medical treatment. This will help to reduce the costs of Aasandha.
- Capacity of the hospitals should be improved to reduce the cost of referral to abroad.
Opening the scheme to more private service providers to increase the competition. And reduce the payment cycle to make the scheme more attractive.
- Future projections are needed to see the sustainability of the scheme.

- Fiscal space analysis need to be done to see the true picture of the sustainability of the scheme. Therefore, future studies are required on this area.



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APPENDIX 1

GENERAL IDEAS ON THE INTERVIEW GUIDE

Ministry of Health /NSPA

AASANDHA'S INTERVIEW GUIDE

(HEALTH CARE PROVIDER)

The objective of the study is to assess the financial sustainability of National Health Insurance Scheme "Asandha" in the Maldives. This study is for academic purposes therefore any information given will be treated strictly as confidential.

Questions for the Hospital administrators

1. Any system in the hospital to check the quality? If yes, what are they?
.....
2. Any system in the hospital to check the excess and to control the users abusing the services? If yes, what are they? If not, what are the future plans?
.....
3. Is there any ways to review the utilization rate? If yes, what are they??? If not what are the plans??
.....
4. What is your idea of gate keeper principles in the insurance scheme?
.....
5. What is the payment mechanism in the hospital?
.....
6. How do you describe the mrf 100,000 provided for each citizen?
.....
7. How do you describe the use of ID card to excess the scheme?
.....

8. Does the Scheme owe your facility?

.....

9. Does the amount owe by the Scheme has an impact on the services provided?

.....

10. What will be the impact of removing the ceiling? Any impact to the cost and utilization rate?

.....

11. In your opinion what are the challenges the Aasandha scheme is facing?

.....

12. In your opinion what do you suggest can be done to improve Aasandha?

.....



APPENDIX 2

GENERAL IDEAS ON THE INTERVIEW

Ministry of Health /NSPA

AASANDHA'S INTERVIEW GUIDE

The objective of the study is to assess the financial sustainability of Health Insurance Scheme “Aasandha” in the Maldives. This study is for academic purposes therefore any information given will be treated strictly as confidential.

Questions for the NSPA administrators

1. Are there any ways to analyze the behavior of the provider? If any what are they?? If not, do you have any plans for the future?
.....
2. Are there any accreditation granted for the providers? If not what are the future plans for these accreditations?
.....
3. Are there any ways to monitor and evaluate the performance of the providers? If any what are they?? If not what are the future plans for this?
.....
4. What are the ways to evaluation performance of the providers, if any what are the indicators?
.....
5. As government what are the ways to control cost and how to prevent abuse by the patient?
.....
6. Who is responsible for controlling the cost?
.....
7. What are the ways implemented to cost containment?
.....

8. What are the other sources of finance for the scheme? Why not contributing scheme? Copayment? Why no registration?

.....

9. What will be the impact of removing the ceiling? Any impact to the cost and utilization rate?

.....

10. What is your idea of gate keeper principles in the insurance scheme?

.....

11. In your opinion what do you suggest can be done to improve Aasandha?

.....



APPENDIX 3

Macro-Economic Projections- Maldives 2014-2018 - IMF

Sub Descri	Units	Sc	2012	2013	2014	2015	2016	2017	2018
GDP current	Rf	Bill	32.424	35.05	38.992	44.032	49.166	54.023	59.18
GDP current	U.S. (\$)	Bill	2.11	2.276	2.532	2.859	3.193	3.508	3.84
GDP per capita, current	Rf	Units	97,990.99	104,178.83	113,984.04	126,590.28	139,018.15	150,228.96	161,840
GDP per capita, current	U.S. (\$)	Units	6,377.55	6,764.86	7,401.56	8,220.15	9,027.15	9,755.13	10,509.1
Inflation,	% chng		10.889	3.997	3.299	4.369	4.369	4.369	4.37
Pop	Persons	Mil	0.331	0.336	0.342	0.348	0.354	0.36	0.37
Gov Rev	Rf	Bill	10.136	11.537	12.891	14.456	15.05	16.16	17.29
Gen Gov rev	P% of GDP		31.259	32.915	33.06	32.831	30.611	29.913	29.21

Sources: International Monetary Fund (IMF) Maldives: August 2014

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