

# **Measles Outbreak Response in Zimbabwe**

**A proposal to respond to and control the ongoing measles outbreak in Zimbabwe**

**By**



**Harare, Zimbabwe**

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## 1. INTRODUCTION

Zimbabwe is a landlocked country of 390 580 square kilometres which lies just north of the Tropic of Capricorn between the Limpopo and Zambezi Rivers. It is bordered by Mozambique in the east, South Africa in the south, Botswana in the west and Zambia in the north and northwest. It is part of the great plateau, which constitutes the major geology of Southern Africa. The climate of Zimbabwe is a blend of cool, dry, sunny winters and warm, wet summers. The country is divided into natural region 1 to 5, with region 1 and 2 receiving the highest rainfall and region 4 and 5 receiving minimum rainfall. Administratively, the country is divided into 11 provinces, 59 rural districts and 7 cities.

The total population is 12,595,418<sup>1</sup>. The average annual growth rate is 1.1%. According to the 2002 census, 41% of the population is below the age of 15 and only 4% is 65 years of age or more. The under five population is 1,814,943 representing 14.4% of the total population. The Zimbabwean population is largely rural with only 32% of the population living in urban areas according to the 2002 census.

Zimbabwe had been making good progress in the reduction of infant mortality rate until the advent of HIV and AIDS. According to the Multiple Indicator Monitoring Survey (MIMS) 2009, the infant mortality rate is 67/1000 live births and the under five mortality is 94/1000 live births.

## 2. MEASLES CONTROL ACTIVITIES IN ZIMBABWE.

Immunization programmes in East and Southern African countries have witnessed significant progress over the past decade with routine immunization (DPT3) coverage increasing from less than 50% at national level about a decade ago, to over 80% in most of the countries in the last two years. The introduction and expansion of the use of innovative strategies such as Reaching Every District (RED) Child Health Days (CHDs), Child Health Weeks (CHWs), Extended Outreach Strategies (EOS), catch up and follow up measles campaigns has contributed immensely to this achievement. However, children continued to die from measles. In 1999, 450,000 children died of measles in Africa and these measles deaths accounted for 50% of all vaccine preventable deaths in Africa and 5 - 10% of all child deaths. Measles was the number five cause of child deaths yet nearly all measles deaths are preventable. In 2000, WHO AFRO region set a goal of 90% reduction of measles deaths by 2009 compared to 2000 (baseline: 396,000 deaths). By end of 2006, there was a 91% reduction in the number of measles deaths (36,000), thereby reaching the AFRO goal before 2009. This was achieved due to strategies that supported strengthening of routine immunization, conducting of supplementary immunization activities and measles case based surveillance.

In line with regional strategy, in 1998, Zimbabwe conducted a measles catch up campaign and coverage of 93% was realized. The first follow up campaign was conducted in 2002 with coverage of 80%, much lower than the targeted 95%. Local immunization campaigns were conducted in selected 16 districts which had low EPI coverage and measles coverage of 90% was achieved. The second follow up campaign was conducted in 2006 and 95% coverage was achieved. These efforts resulted in the increase in routine measles immunization coverage in Zimbabwe reaching a peak of 91% in 2006. Suspected measles cases were declining, measles deaths had virtually disappeared and the number of IgM positive cases had also declined. In 2009, a third follow up campaign was conducted and the country achieved reported coverage of 93%. Yet population estimates for the country raised certain concerns, as some districts achieved more than 150% of coverage, which could indicate an underestimation of the target population. Since 2002, vitamin A supplementation has been integrated in routine immunization and all supplementary immunization activities.

However in the past years, Zimbabwe experienced declining routine immunization coverage (see maps below). This is attributed in part to socio-economic challenges which resulted in high attrition of health workers, closed health facilities, shortages in gas supply impacting on cold chain functionality, lack of fuel & vehicles challenging outreach services among other factors. While some progress has been made in addressing some

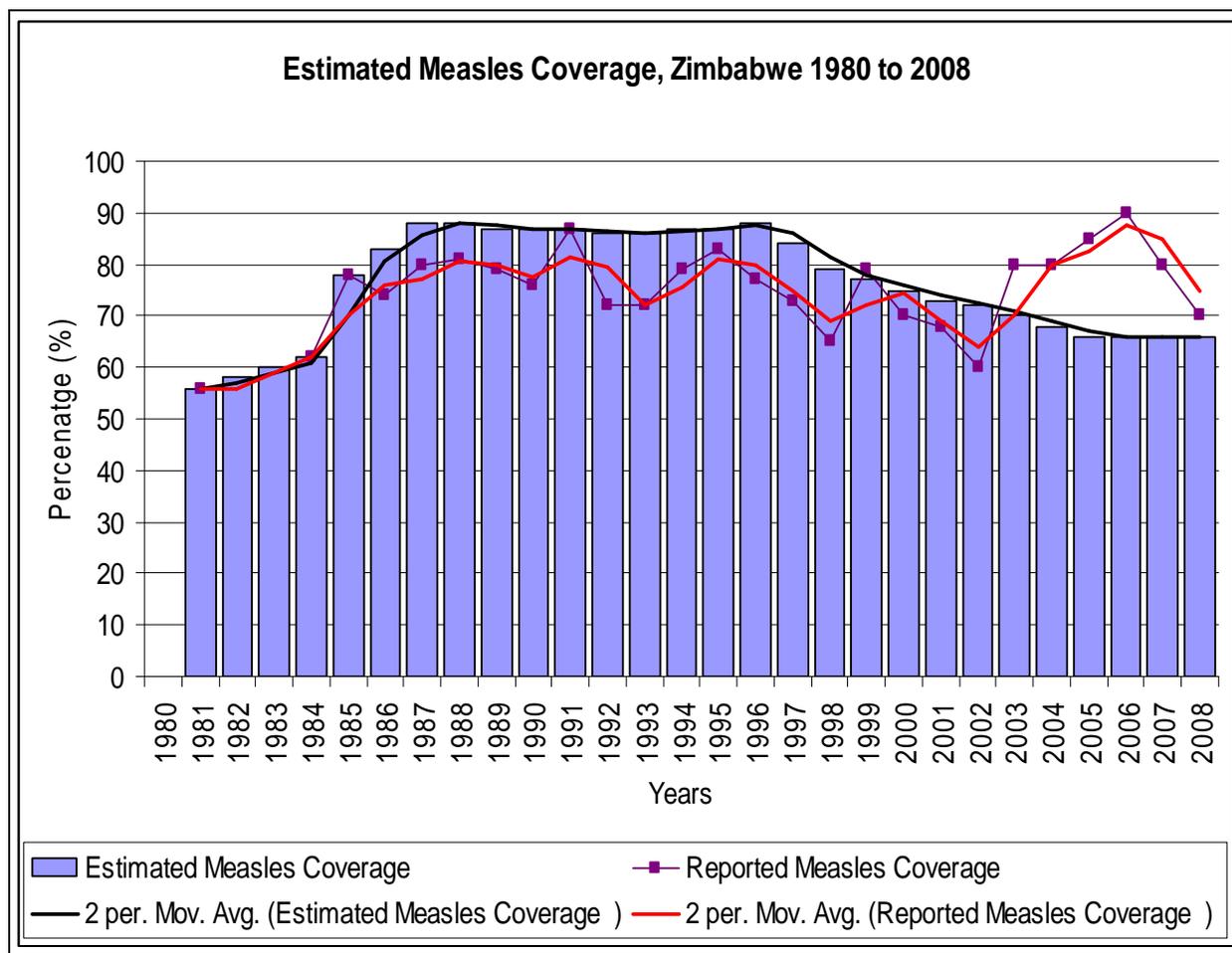
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<sup>1</sup> Central Statistics Organisation 2010 population projections

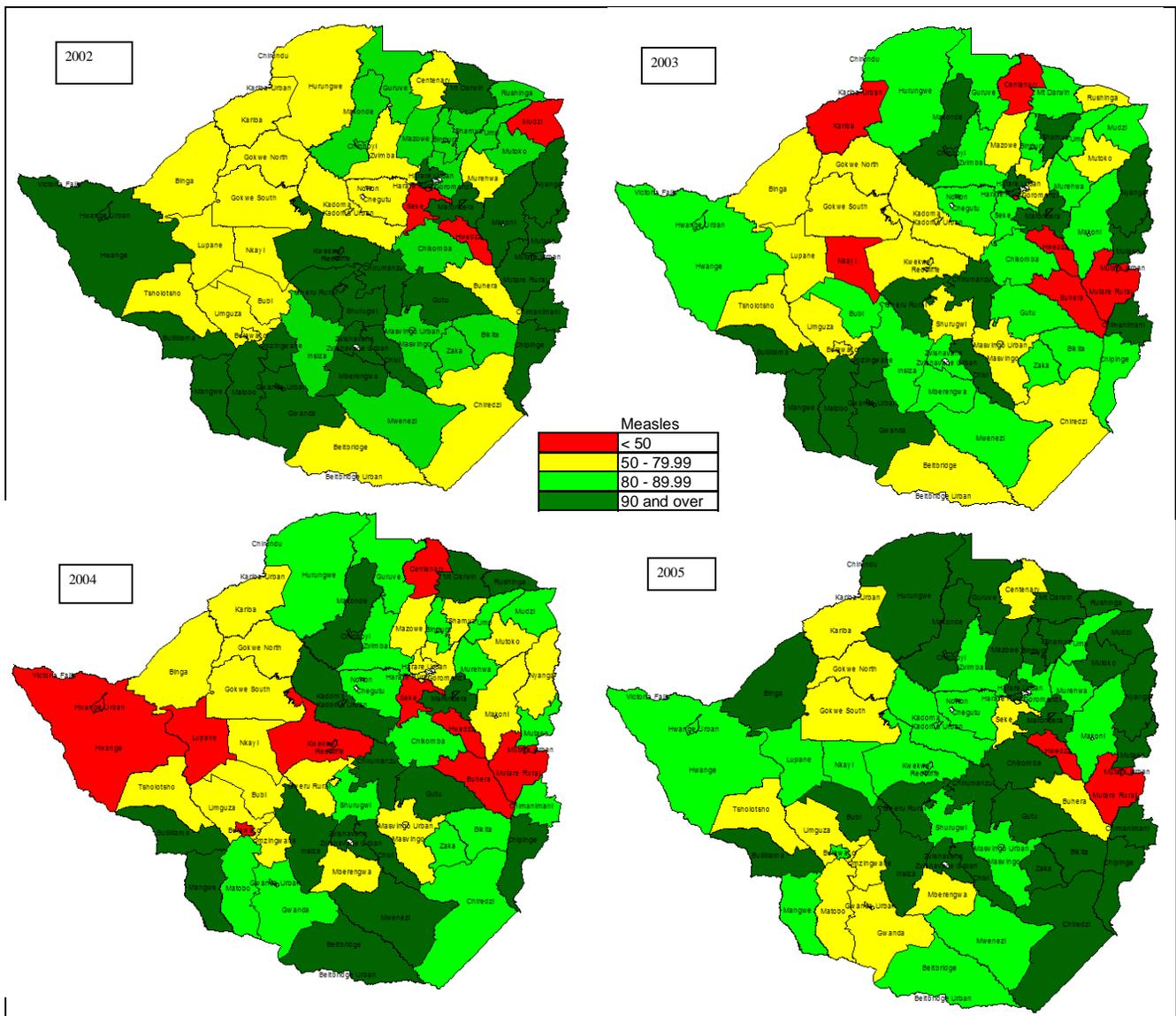
of these challenges, for example introduction of RED approach in 20 districts, health worker retention, and their impact continues to be felt in the programme.

The declining routine immunization coverage from 1996 to 2004 was stabilized by the introduction of Supplemental Immunisation Activities (SIAs) that included Child Health Days, Reach Every District (RED) approach among others (see graph below).

These declining coverage combined with outbreaks of Measles reported in the Southern African region<sup>2</sup>, neighbours to Zimbabwe provided fertile ground for an outbreak of Measles in Zimbabwe.



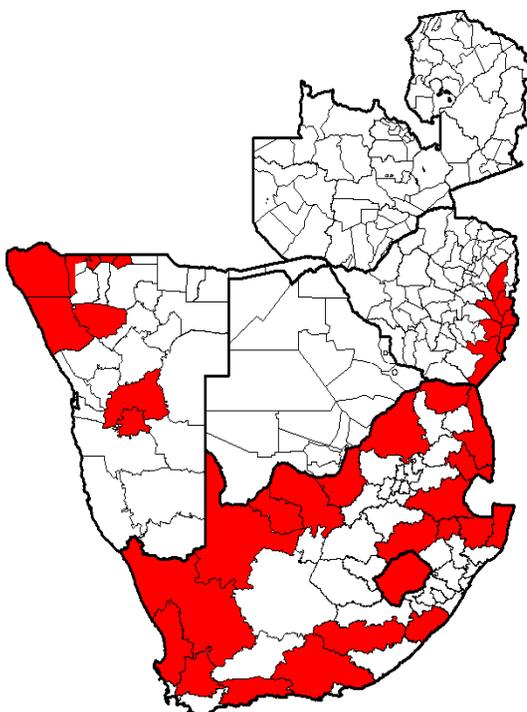
<sup>2</sup> South Africa, started March 2009; Namibia, late 2009, Lesotho, November 2009



### 3. CURRENT SITUATION

In 2009, the reported routine measles coverage was 70%. Many of the 62 districts have coverage below 50%. The decline in the measles coverage means that the number of unvaccinated children has been increasing building up a pool of susceptible. The Multiple Indicator Monitoring Survey (MIMS) of 2009 reported measles coverage of 76.8% among children aged 12 - 23 months.

The South African Region had been experiencing measles outbreaks since 2009 with some countries reporting outbreaks as early as March 2009. Measles outbreaks had been confirmed in and reported from the following countries in the sub region: South Africa (March 2009), Lesotho (November 2009), Namibia (August 2009), Swaziland (October 2009), Zimbabwe (September 2009).



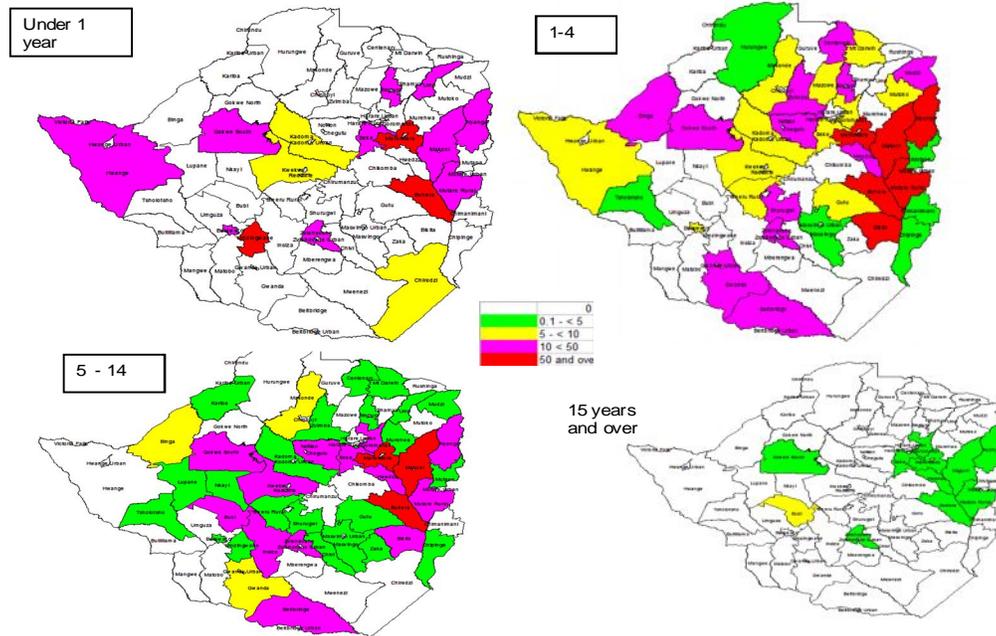
***Countries with confirmed measles outbreaks in Southern Africa since 2009 to date***

In Zimbabwe the first measles cases were reported in September 2009 with initial reports from Bulawayo, Bubi, Harare, and Zvishavane districts. As the health information system continues to face challenges in terms of completeness and timeliness of the transmission of health information, the MoHCW, through the Health Cluster and its partners, conducted a rapid assessment of all the countries 62 districts to have an overall picture of the outbreak situation in the country. To date, 41 districts out of 62 have had at least 1 laboratory confirmed case of measles and 57 out of 62 districts have reported suspected measles cases. The total number of reported measles cases from the 41 districts is 2,176 and the overall attack rate is 18 per 100,000 population with a range of 0 up to 158 per 100,000 in Buhera district There have been 183 measles deaths with 180 being community deaths. The actual number of suspected cases is likely to be higher as there are challenges in transmitting the line lists of measles cases to national level.

All the age groups are affected with children under 5 years, representing 45%, being the most affected with an overall attack rate of 24/100,000. However children between 5 and 14 years represent 47% of the affected population while 6.5% are above 15 years. According to data received from districts, the majority of the measles cases (about 75%) are from the Apostolic Sect that refuses immunization and western or traditional medicine based on their religious beliefs. This community is missed during the routine immunization and supplementary immunization activities.

Another contributing factor to the measles outbreak could be related to cold chain issues, in fact the latest Vital Medicines and Health Survey (VMAHS Round 4) conducted in December 2009, which surveyed 1286 health facilities that offer immunization reported that almost 20% health facilities do not have functional cold chain equipment (refrigerators). This hampers the provision of immunization services as the lack of functional refrigerators is compounded by the frequent and sometimes prolonged electricity power cuts and non distribution of gas due to lack of transport. Lack of funds over the past five years has impeded the provision of outreach to the hard to reach areas and communities.

### Measles age specific attack rate per 100,000



Districts have been responding to the outbreaks according to the WHO measles outbreak response guidelines, but some of districts responded late resulting in delayed control of the outbreak. Since the beginning of the outbreak, more than 148,000 children had been vaccinated in 23 districts. It is a challenge to break through the Apostolic sect and vaccinate the children. Intense mobilization is needed and the door to door strategy has to be used in some districts as the Apostolics will not come to the health facility nor will they access outreach services.

Fresh outbreaks in new districts continue to erupt (9 new affected districts in Week 7 of 2010). Active case finding is ongoing in both the affected and non affected areas. There are challenges of getting up to date information at national level such as line lists which would indicate the number of suspected cases. In some districts, treatment centres have been opened to admit complicated cases and non complicated cases of Apostolic children who are ill so that they are able to complete their course of treatment, as the parents would not give them the medication at home due to their religious beliefs.

## 4. RATIONALE

Zimbabwe's vibrant health service has been affected by the unprecedented economic and social challenges in the past years. Deteriorating physical infrastructure, the inability of the public sector to deliver basic social services, and the severe impact of the HIV/AIDS pandemic has led to a decline in the overall health and wellbeing of the population. The erosion of livelihoods, food insecurity, rising malnutrition and the possibility of disease outbreaks such as cholera continue to put the already vulnerable population under distress. Having low measles immunization coverage over the past years and resistance of some religious sects in accepting vaccinations has led to the building a large pool of susceptible. In some districts the coverage has been lower than 50%. The Apostolic sect, among whom majority of cases occurred, is largely unvaccinated. Some districts could have vaccine management and cold chain related issues contributing to cases among vaccinated children.

Measles is a highly contagious virus spread by contact with an infected person through coughing and sneezing. It is estimated that 30 per cent of reported cases develop one or more complications, most among age groups under five and over twenty years. Malnourished children are more prone to developing severe complications due to measles.

The country has been having an outbreak for the past five months and it continues to spread with no signs of abating. Districts have been responding to the outbreak but there is need to ensure that the outbreak is contained. A National Measles Task Force was put in place to coordinate the response to the outbreak. The analysis of the assessment commissioned by the MoHCW Task Force to get more insight into the outbreak and identify the strategy to take to address the outbreak indicated that while the attack rate was higher in the under five population, there was a significant number of the 6 - 14 years also affected. So therefore, there is need to vaccinate the children from 6 months to 14 years in order to reduce the high mortality affecting the under 5 and stop the transmission. It is with this background that the MOHCW and partners are planning to respond to the outbreak by vaccinating at least 95% of children aged 6 months to 14 years nationwide in the May Child Health Days. In this way the transmission is likely to be interrupted. This UNICEF/WHO joint proposal seeks to raise funds (\$8,402,292) for this campaign.

## 5. OBJECTIVES

### 5.1 Overall Goal

To contribute towards reduction of under-five mortality and morbidity through reduction of measles mortality by 95% and measles morbidity by 90%.

### 5.2. Specific Objectives

- To immunize at least 95% of children aged 6 months to 14 years nationwide.
- To provide Vitamin A supplementation to at least 90% of children aged 6 months to 5 years during measles immunization campaign.

### 5.3 Expected Results

- At least a 95% Measles Coverage among under fourteen children in 62 districts
- At least a 95% Vitamin A Supplementation coverage among children under five.

### 5.4 Indicators/outputs

- % of targeted children who received measles vaccination
- % of targeted children who received Vitamin A supplementation

### 5.5 Target population

4,912,375 children aged 6 months to 14 years in 62 districts represent the total target population for measles immunization while 1,630,678 children under 5 are the target population for the vitamin A supplementation

## 6. STRATEGIES/ACTIVITIES

### 6.1 Strategies

The country had scheduled to conduct Child Health Days (CHDs) in May 2010 and the measles vaccination campaign will be conducted within the context of CHDs in all districts using a combination of fixed post and outreach strategies. Active mobilization will be conducted to reach all targeted children through village health workers and environmental health technicians. The religious objectors will be mobilized through their religious and traditional leaders. Vaccination sites opened solely for their use will be offered. Temporary fixed sites will be opened in the resettlement areas and other areas where there are no fixed health facilities resulting in the community walking long distances. Mobile teams will be deployed to reach the hard to reach communities.

### 6.2 Major Activities

**Development of Micro-plans:** Micro planning and mapping exercises will be conducted at health centre level for their catchment areas and these plans will feed into the district plan. During this exercise, all material, human and financial requirements will be reviewed for its rationality and affordability. During micro planning, the districts will determine themselves the strategies which are best to reach the Apostolic Sects as they know their communities better. Some districts in previous campaigns have used house to house visits, special

opening times at health facilities (e.g. night immunization sessions) or specific outreach points for the Apostolics. There will be no standard strategy prescribed, taking into consideration that some districts have larger Apostolic populations than others.

**Procurement of Supplies:** All the materials necessary to the immunization campaign such as measles vaccine, AD syringes, reconstituting syringes, safety boxes, vaccine carriers, dial thermometers and other supplies will be timely procured by UNICEF.

**Printing of data collection tools:** All data collection tools such as tally sheets, registration and reporting formats will be prepared and distributed to all districts prior to the campaign. This will ensure standardization of information being collected.

**Training:** Decentralized trainings will be conducted at all levels to ensure a good implementation quality campaign. The training materials will be standardized as per the national and WHO guidelines and practical demonstrations will be part of the training.

**Social Mobilization:** Advocacy and social mobilization activities will be undertaken at all levels. IEC materials will be developed, printed and distributed nationwide. Health education and health messages will be transmitted through local radio and television. Interpersonal communication will be privileged among the religious objectors' communities. In order to reach out to the health services objectors, emphasis is being put on social mobilization, in particular to garner support of the religious and political leaders of the objectors. A workshop has been planned two weeks ahead of the campaign, where the leaders of all the Apostolic Churches will be addressed by high level government officials and other delegates. Discussions are underway with the Zimbabwe Red Cross Society to engage the Societies 40,000 volunteers to mobilize the community for the campaign. The three mobile telecommunication providers (Econet, Netone and Telecel) will be approached to send out specific messages on the measles campaign to reach out to their constituencies as part of their social responsibility.

**Logistic and supply management:** Pre and campaign logistics needs will be determined and a distribution plan will be developed to ensure smooth and timely distribution of commodities to the respective districts and wards.

**Implementation:** The campaign is targeting at least 95% of children aged 6 months to 14 years. These children will be reached through the various strategies determined during the micro planning. These will include immunization at static facilities, outreach points, temporary sites opened particularly for the campaign as well as door to door where necessary. Schools will play a significant role in this campaign as the children aged 6 -14 years will be accessed at school.

**Surveillance:** Surveillance activities will be strengthened so that all cases of measles will continue to be picked up. Measles case definitions for both the health facilities and communities will be printed and distributed. Information on measles case based surveillance will be discussed during the planning and training sessions.

**Monitoring, supervision and evaluation:** supervisory activities will be undertaken prior and during the campaign to ensure preparedness, quality implementation and monitoring and a post campaign evaluation and coverage survey will be conducted by an independent body to evaluate the overall quality of the immunization campaign.

**Technical assistance:** WHO and UNICEF will provide technical assistance at national and provincial levels in planning, coordinating, implementing and monitoring of the measles outbreak response. Involvement of Health Cluster members will be strongly encouraged.

## 6. BUDGETARY REQUIREMENTS

The total amount of support to be requested is detailed below.

This grant will be utilised to conduct measles and Vitamin A supplementation campaign in all districts of the country. The support will be used for procurement of all the necessary supplies for the campaign such as measles vaccine, injection materials, and safety boxes, printing of data collection and reporting tools. This

support will also be used for activities such as training of health workers/vaccinators, social mobilisation, transportation of supplies and logistics and allowances for health workers.

<b>Item</b>	<b>Description</b>	<b>Cost US\$</b>
1	Measles vaccine	1,462,292
2	Injection safety materials and supplies	686,769
3	Freight and clearance charges	300,000
4	Health Workers Allowances	1,484,788
5	Transport and fuel	500,210
6	Planning and training	1,112,610
7	Social Mobilization	1,000,000
8	Cold chain equipment	405,940
9	Post Campaign Evaluation and coverage survey	650,000
10	Surveillance	250,000
11	<b>Sub total</b>	<b>7,852,609</b>
	Programme Support Costs 7%	549,683
<b>12</b>	<b>Grand total</b>	<b>8,402,292</b>