ASSESSMENT OF THE

IMMUNIZATION

SERVICES IN

TANZANIA

MINISTRY OF HEALTH      TANZANIA      February 2000
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Assessment of immunization services - Tanzania

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INTRODUCTION

BACKGROUND INFORMATION

External Environment

The United republic of Tanzania is situated just south of the Equator between the Great Lakes of Lake Victoria, Tanganyika and Nyasa on the western frontier and the Indian Ocean on the East. With an area of approximately 945,000 square kilometres, it is the twelfth largest country in Africa. The total land area covers about 88.6 million hectares, with arable land constituting some 40 million hectares and cultivated land about 6 million hectares. Despite its large land area, land shortages continue to exist in some urban centres due largely to increasing urbanization and economic growth. The country, formerly a British colony known as Tanganyika, received its independence in December 1961, and became a union with the islands of Zanzibar in 1964 hence the name United Republic of Tanzania. Since independence, the country has been politically very stable except for an influx of refugees from Rwanda, Burundi, and the Democratic Republic of Congo and Somalia. Zanzibar is comprised of Unguja and Pemba Islands, each with an area of about 1658 and 984 square kilometres respectively. Unlike the mainland, which has 20 regions and 117 districts, Zanzibar has five regions and ten districts.

Demographic and reproductive health indicators

Table 1 presents the trend in demographic and reproductive health indicators in Tanzania from 1948 to 2000. In the year 2,000, according to the Planning Commission, the population of Tanzania mainland is estimated at 34.1 million- a nearly fivefold increase since 1948 when the first population census was taken. The annual population growth rate was estimated at 2.8 percent in 1988 population census but the UN is projecting a decline to 2.3 percent in 1995-2000. Overall, the number of people added to the population has increased from 560,000 per year in 1988 to 970,000 people in the year 2000 (UNFPA 1999). As a result of this rapid population growth in the past four decades, approximately 60 percent of the population are currently below 25 years and 49.3 percent below 15 years. Zanzibar has a projected population of about 928,405 in 2000 and the annual population growth rate is a 3 percent. In Zanzibar, the percentage of people below 15 years is exactly 50 percent.

The majority of Tanzanians live in rural areas. Although this has been the norm for several years the trend has shown a dramatic increase in urban population from 6.4
percent in 1967 to almost a quarter (24 percent) in 1998. As of recent, the city of Oar Es Salaam, has received an influx of youth population from the southern regions of Tanzania, commonly known as the "Machinga" and some semi-nomadic Massai pastoralists from Arusha Region, Tanga and Coast region and the Gogo tribe from Dodoma region. These populations may serve as sources for transmission of various diseases, including the six- vaccine preventable diseases if they were not immunized when young.

For every 10 percent increase in contraceptive prevalence rate, total fertility rate is supposed to decline by one percent. Since 1992, Tanzania has formulated a national population policy but its implementation has been slow. As a result, because of low contraceptive prevalence rates (10% in 1991 and 16% in 1996), the estimate of total fertility rate has consistently remained high during the past three decades however will some decline. TFR has been 6.9 children per average woman 15-44 years in 1978 declining to 5.8 in 1996 (TOHS 1996) but the UN is projecting a further decline to 5.48 children per woman in 1995-2000 (UNFPA 1999). Crude birth rate has also declined from 49 per 100,000 population to 40.8 per 100,000 population because people have started feeling the burden of raising and educating children.

Overall, during the last four decades infant mortality rate has also declined steadily by nearly 50%, starting from 190 per 1000 live births in 1957 to about 88 per 1000 live births in 1996. The steepest decline was in the last 10 years compared to any other inter-census period partly because of improved immunization coverage and other primary health care services.
Table 1. Trends in demographic and reproductive health indicators in Tanzania 1948-2000

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Population in millions</td>
<td>7.7</td>
<td>9.0</td>
<td>12.3</td>
<td>17.5</td>
<td>23.1</td>
<td>32.2</td>
<td>34.1</td>
</tr>
<tr>
<td>Annual population growth rate</td>
<td>2.6</td>
<td>3.2</td>
<td>2.8</td>
<td>2.8*</td>
<td>2.8*</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Number of people added per year</td>
<td>473,000</td>
<td>560,000</td>
<td>877,000</td>
<td>877,000</td>
<td>970,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life expectancy (M/F)</td>
<td>51</td>
<td>50.0/52.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMR per 1000 live births</td>
<td>190</td>
<td>160</td>
<td>137</td>
<td>115</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crude birth rate per 100,000 population</td>
<td>47</td>
<td>49</td>
<td>46</td>
<td>40.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Fertility rate</td>
<td>6.6</td>
<td>6.9</td>
<td>6.5</td>
<td>5.8**</td>
<td>5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent urban</td>
<td>6.4</td>
<td>13.8</td>
<td>18.3</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density of population per square Kilometre</td>
<td>14</td>
<td>20</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contraceptive prevalence rate (% of WRA)</td>
<td>10</td>
<td>16.1('96)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female genital mutilation (% of women)</td>
<td>17.9</td>
<td></td>
<td></td>
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</table>


The United Nations is projecting an annual growth rate of 2.3 percent for the period 1995-2000

**Economic and Social Indicators**

**Trend in GNP per capita**

With an estimated Gross National Product (GNP) per capita of about $210 in 1997 (World Development Report 1998/99, World Bank), Tanzania remains one of the poorest countries in the world. It is estimated that approximately 50 percent of Tanzanians live below the locally defined poverty line and 36 percent live in abject poverty (Mtafitikolo et al 1999). Tanzania's economy is predominantly agrarian. Agriculture accounts for about 50 percent of Gross Domestic Product (GDP), provides 85 percent of merchandise exports and is directly or indirectly the source of employment and livelihood to 90 percent the total workforce and majority of Tanzanians. Industry and Tourism contributed only 8 percent and 7.6 percent of GDP in 1998 respectively (Anonymous 1999).

**Trend in GDP growth**

After a severe economic downturn in the early 1980s and in the first half of 1990s, Tanzania has recorded a significant improvement in overall economic performance over
the latter half of the 1990s. Macroeconomic Performance Indicators from 1988-1998, have shown that the real growth of GDP declined from 6.2% in 1990 to 0.4% in 1993, thereafter it grew to 4% in 1998 (Anonymous 1999). The economy is expected to grow moderately between 4-6 per cent in the years to come (Mtafitikolo, 1999). The recovery of growth has been driven by a series of reform measures that were introduced since mid 1980s. The encouraging up-turn in GDP growth and forecast remain inadequate to have any significant impact on abject poverty. The realized GDP growth is also low compared to the strong performing economies in the region. This implies that the achievement of a higher and sustained economic growth is imperative for Tanzania in the next millennium. Besides consolidating and sustaining macroeconomic reforms, the achievement of higher growth will require, improved performance in agriculture, mining and tourism as pace makers for growth, and further privatization and restructuring of the industrial sector.

Trends in Human Development Index (HDI)

Out of 174 countries, Tanzania has slide down the scale based on Human Development index (HDI). Throughout the period 1991-99, the indices for Tanzania were very low. Overall, Tanzania has slide down the scale ranking 156th in 1999 down from 150th in 1998 compared with 127th in 1991 (Mtafitikolo 1999, Anonymous 1999). Compared with an average index for sub-Saharan Africa (0.463) or other developing countries (0.637), the HDI figure for Tanzania (0.421) falls consistently below all them (Anonymous 1999).

Trends in inflation

Inflation has declined from 35.9% in 1990 to 7.7% in June 1999 because of tight monetary and fiscal stance pursued by the Government after 1991.


The budget deficit increased from 16.2 percent in 1990 to 25.8 percent in 1993 thereafter it fell to 6.5 percent in 1998. Foreign reserves measured in terms of weeks of imports have doubled from 6.6 in 1995 to 13.4 while growth in money supply has fallen from 46.3% in 1994 to 7.7 percent in 1999.

Debt service/ exports

The debt burden remains one of the most formidable obstacles for development in Tanzania. Some authorities have described Tanzania's debt as onerous, worsening and unsustainable. Between 1986 and 1998 total debt stock grew by 62% with the aggregate debt service to export ratio estimated at 27.8% at the end of 1998. This implied that more than 20% of Tanzania's export earnings were required purely to service its foreign debt. The external debt has risen from US$ 6.8 billion in 1995 to US$ 8.4 billion in May 1999 despite some debt relief from the Paris Club.

Debt service and the wage bill dominate public expenditure. At the moment debt
servicing accounts for more than one third of the recurrent budget, combined with costs for
salaries, they account for 80% of the recurrent budget. On the mainland, approximately 80% of the development budget is financed by external donors while Zanzibar it is close to 95 percent. One of the greatest challenges for the near future is how to reduce donor dependency in various programs such as EPI and other development activities in the country.

Aiming at making Tanzania a middle-income country by the year 2025, the Government launched its vision 2025 and the Poverty Eradication Strategy in 1998. Similarly, with the aim to promote economic growth and quality of life of Tanzanians, the Government has also embarked on a series of reforms in the civil serve sector, local government and Regional administration, education and health sectors. All these reforms have had a major impact on the EPI program as will be described later.
Health Sector Reform

Health Sector reform process dominated the Tanzania's health development agenda in 1990's following the development of MOH's national health policy in 1990. The MOH has been working closely with the donors at various stages. In 1994 there was a joint MOH Donor appraisal of Health sector strategies and Plan 1995-1998. The WHO, UNICEF and UNFPA participated fully in the HSR Review, in 1998 and have since then taken part in all milestone processes towards the production of the three year 1999/20002001/2002 Programme of Work. The HSR is being implemented through eight strategic thrusts namely: effective district health services; improved secondary and tertiary hospital services; clearly defined management, administration, policy formulation and health services re-organization roles for MOH; human resources development; strengthened central support systems (personnel, drugs and supplies, medical equipment, physical infrastructure, transport management and communications); sustainable health sector financing; optimization of the public and private mix of service providers; and effective donor co-ordination. The greatest challenge to operationalising the reform relates to advocacy and communication (as many actors, including donors and key government personnel do not fully comprehend the content and requirements of the reform process) as well as putting into place an appropriate accountability process.

Management arrangements have been made for mainstreaming of HSR/Plan of Action for one year with priority activities of the MOH's departmental plans and budgets for implementation. Departmental Strategy Co-ordinators have been formed to work closely with the PHC secretariat. Arrangements have also been made for Joint MOH/Partner joint funding of activities in POA using pooled funds from Danida, DFID, Irish AID, NORAD, SDC, and World Bank. Netherlands has also indicated intention to join hands in the joint funding (Ipuge 1999).

In line with the health sector reform of the Ministry of Health and with restructuring of Danida sector support through primary Health Care Support ((PHCS) programme, management responsibilities of the EPI programme underwent major overhauling with a transfer of responsibilities from the central level to other sectors of the Ministry of Health. For instance procurement of vaccines and stores management was given to Medical Stores Department while management of EPI transport in the regions and districts was assigned to central transport Unit (CTU).

Infants (0-11 months).

Table 2. Distribution of Health Facilities in Tanzania 1961 - 1996

<table>
<thead>
<tr>
<th>Type of Facility</th>
<th>1961</th>
<th>1999</th>
</tr>
</thead>
</table>

29/04/00
Immunization activities were started in Tanzania in 1975. Two and a half decades have now elapsed and the program is in its fourth phase. Throughout, the immunization programme has been a major component of the integrated, nation-wide Maternal and Child Health (MCH) Program of the Ministry of Health that was launched in 1974 under the Directorate of Preventive Services. During this entire period the programme operated as an autonomous vertical programme in the midst of more than 15 other programmes. However, following an appraisal report of 1990 the importance of integrating the mainland programme into the PHC activities was recommended.

**Trends in Health Service Provision**

Since the country got its independence in 1961 to 1999 the number of hospitals increased from 98 to 224, health centres from 22 to 380 and dispensaries from 875 to 4276 (Tanzania, Planning Commission). Focus of attention was on improvement in the number of trained health workers including maternal and child health aides (MCHA) and rural medical aids to run various peripheral health facilities. In 1994/95, the number of trained health personnel was more than 67,000 cadres, a tenfold increase since 1961. This expansion has enabled 72% of the population to have access to a health facility within 5km walking distance and 93% to have access within 10 km of a health facility. Approximately 6-10,000 population and 50-80,000 population are served by one dispensary and health centre respectively.

Zanzibar’s organizational structure indicates that there is one referral hospital, 3 district hospitals, one cottage hospital, 68 private dispensaries and 125 MCH clinics. All MCH clinics offer immunization services. For the year 2000, the target is to immunize 37,1366 Table 3 presents an inventory of the health facilities in mainland Tanzania in 1998. An inventory of health facilities done during an annual meeting of Reproductive and child health held in Arusha in October 1999 the mainland was reported to have a total of 4,787 health facilities, of which the number of hospitals was 224, health centres 380 and dispensaries 4,1&3. Of all the health facilities, 62 percent were provided by the Government, 15 percent Voluntary/NGOs and 22 percent were private. Of the 224 hospitals, 43 percent were provided by the Government, 37 percent. Voluntary
organizations and 19 percent by private individuals. Seventy five percent of health centres and 62 percent of the dispensaries were provided by the Government. On the contrary, private dispensaries account for nearly a quarter of all the dispensaries while nearly 10 percent of the health are private owned. This suggests that because of the health sector reform there has been a concomitant increase in privatization and promotion of private/public mix within the health sector. The last inventory of health facilities was done in 1978/79. During the past two decades, the trend shows that the total number of dispensaries has increased by 58.2 percent from 2644 dispensaries in 1980 to 4183 dispensaries in 1998.

Facilities providing immunization services

There is a discrepancy in the information on the number of health facilities that provide immunization services in mainland Tanzania. During the year 1998, there were 3,544 health facilities that were providing immunization services in the country, according to an BPI Annual meeting held in Dodoma in March 1999. However other data sources obtained from Zonal reports presented during an annual meeting on reproductive and child health held in Arusha October 1999 indicated that there were 4, 763 facilities of which 3556 were providing immunization services.

Table 3. Distribution Health Facilities in mainland Tanzania by type of provider, 1998.

<table>
<thead>
<tr>
<th>Type of Health Facility</th>
<th>Government No. %</th>
<th>NGOs NO %</th>
<th>Private No %</th>
<th>Total No %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>113** (50.4)</td>
<td>73** (37.2)</td>
<td>38 (19.4)</td>
<td>224* (100.0)</td>
</tr>
<tr>
<td>Health Centres</td>
<td>283 (74.5)</td>
<td>61 (16.1)</td>
<td>36 (9.5)</td>
<td>380 (100.0)</td>
</tr>
<tr>
<td>Dispensaries</td>
<td>2,596 (62.1)</td>
<td>603 (14.4)</td>
<td>984 (23.5)</td>
<td>4,183 (100.0)</td>
</tr>
</tbody>
</table>
Assessment of immunization services – Tanzania  

| Total Facilities | 2,964 (62.3) | 737 (15.5) | 1,058 (22.2) | 4,787 (100.0) |

Source: 1998 Zonal Reports, 19'h Annual Meeting of Reproductive and Child Health held in Arusha, October 1999

*Total number of Hospitals derived from Ministry of Health, Directory of Curative services..

**Breakdown of the types of provider for hospitals to be verified

Table 4 shows that in 1998, a total of 5226 outreaches per month were planned and in one year the expected number was 62,712. Over one third (36.5 percent) of the expected outreaches were conducted in that year.

The total number of facilities including those that provide immunization appears to be different. This discrepancy in the total number of health facilities, according to EPI Cold Chain Officer, is because these two sets of information were collected at different times of the year based on non-standardized format of collecting information also using two different groups of participants in their respective annual meetings. The first source of information is from an annual meeting for EPI cold chain officers organized in March 1999. This source provided information on delivery of immunization services (Table 5) while the second source was from Zonal reports during an annual meeting on reproductive and child health held in Arusha, October 1999 which has also provided information on the types of facilities. Ideally, data of the same year should not be different if the numbers were updated properly with some degree of accuracy and standardization. Hence there should not have been such big a difference for instance in the total number of health facilities.

As a short term measure there is need to standardize collection of information so that it can be reliable in future monitoring and evaluation of health services. In the long run, to obtain a more accurate information, there is need to repeat conducting an inventory of the physical structures in the country similar to the one that was done in 1978/79 and this would in turn resolve this discrepancy.

Static MCH Clinics, mobile and outreach services for EPI activities in Tanzania

Table 4 shows the distribution of static MCH, mobile and outreach clinics in Tanzania. Three quarters of the total health facilities in Tanzania provide vaccination services through static MCH clinics (3556) while 86 percent (4117) and 18 percent (871) provide outreach and mobile services respectively.
Source of EPI Service | Number | %
----------------------|--------|-----
Static MCH clinics    | 3556   | 74.7%
Mobile services       | 871    | 18.3%
Outreach services     | 4117   | 86.4%
Total No of health Facilities | 4763   |

**Source:** (1) 1998 Zonal Reports during 19th Reproductive and Child Health Meeting held in Arusha (October) 1999.
### Table 5. Delivery of Immunization Services in Tanzania, 1998

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of health Facilities</td>
<td>4,787*</td>
</tr>
<tr>
<td>Number of facilities providing Immunization</td>
<td>3,556*</td>
</tr>
<tr>
<td>Number of outreaches planned</td>
<td>5,226</td>
</tr>
<tr>
<td>Number of outreaches planned per month planned per year</td>
<td>62,712</td>
</tr>
<tr>
<td>Number of outreaches conducted in 1998</td>
<td>25,126</td>
</tr>
<tr>
<td>Percent of outreaches conducted in 1998</td>
<td>36.5%</td>
</tr>
</tbody>
</table>

**Source:** EPI Annual Meeting held in Dodoma in March, 1999,
*Zonal reports during Annual meeting of Reproductive Health held in Arusha in October 1999. These figures will be verified in Annual EPI Meeting of March 2000.
District Financing

One of the major changes introduced by the health sector reform being implemented in the 37 districts is the concentration of financial resources for health, including:

- Conditional grants (from the central government)
- Basket funds (donor partner cash contributions)
- District revenues (allocated by the District Council from revenues coming from the local Development Levy)
- Cost-sharing revenues earned by health facilities for the provision of "personal" health services
- Community Health Fund revenues (a voluntary health insurance system to allow contributions for the payment of cost-sharing charges)
- In-kind resources provided by the central government (e.g. vaccines, vaccination supplies),

The conditional grant and basket funds are to be combined into a single grant, mixing central government and partner funds.

District health plans will describe how financial resources will be used. Among the budget items for which districts will be responsible are: (1) salaries and benefits of service delivery and management personnel; (2) transportation and allowances for supervision and for delivery of vaccines and supplies to facilities; and (3) kerosene,

Regional Health Offices will oversee the technical execution of district plans and the Ministry of Regional Administration and Local Government will monitor their administrative execution and expenditure of funds (e.g., accounting and audit).

External support for immunization services

The public sector funds only a small part of immunization activities in Tanzania. Although the international development partners may change over time, e.g., USAID has stopped support in recent years and DFID has begun, the level of external support is substantial and relatively stables.

The commitments of external partners in support of immunization services are:

- KFW for polio vaccine through 2000
- DFID to 2001
- JICA to 2003
- DANIDA to 2004
- Rotary International for social mobilization assistance for polio NIDs
- Irish Aid for solar refrigerators

UNICEF’s Vaccine Independence Initiative requires that the Government of Tanzania
contribute 10 percent of the cost of imported vaccines, which it has done: an allocation of TSh 405 million ($US 506,000) for vaccines is in the 99/00 MOH budget.

OBJECTIVES OF THE ASSESSMENT

In the third quarter of 1999, the Ministry of Health began to plan an assessment of immunization services using assessment guidelines that were then in the process of development. The Ministry, in consultation with the Inter-agency Co-ordinating Committee on immunizations (ICC), developed terms of reference for the assessment that included the following objectives:

1. To review the status of current immunization operations in Tanzania and identify needs for improvement in the immunization program itself or in the health system of which it is a part.

2. To review the desirability, given disease burden and vaccine efficacy, of introducing hepatitis B vaccine into the routine EPI in Tanzania and assess the feasibility of its introduction.

3. To review strategies needed to strengthen the integration of Vitamin A into the routine EPI.

4. To review the overall directions and plans for future as laid down in the draft five years National EPI Strategic Plan of Action (2000-2004).

5. To pilot test a new assessment tool for reviewing the current capacity of immunization operations, health systems, and the impact of the health sector reform on these operations

METHODOLOGY

The Ministry of Health, through the Inter-agency Co-ordinating Committee (ICC), initiated the assessment, decided what its purpose should be, and prepared a terms-of reference to guide the assessment.

Before the start of the assessment, the Ministry of Health and WHO/Tanzania staff members compiled information about immunization operations, the health system, and the external environment in Tanzania. Reports of previous reviews, plans of action, and other documents were collected. Immunization specialists wrote materials summarizing the situation in Tanzania mainland and Zanzibar and also selected the nine regions to be included in the study:

- Kilimanjaro
- Shinyanga
- Mbeya
- Kagera
- Dodoma
- Lindi
To harmonize field work activities, the members of the team first met on 14 February 2000 in Dar Es Salaam for two days to examine the assessment guidelines, reviewed and discussed the information compiled in Step 2, to assess the Country’s performance on specific indicators, and finally the team identified the areas of inquiry on which to focus. Participants were then divided into regional teams and planned the administrative details of their trips to the regions.

Sub-teams traveled to the nine regions of the Country to carry out the assessment in the regions from 16th to 23rd February 2000. Upon arrival in the regions, each team met with the Regional Medical Officer, other members of the RHMT, and administrative staff to brief them on the assessment, to collect regional data, and to select districts to be visited for additional data. Regional teams then divided into smaller teams of two to three members to visit these districts.

The district teams travelled to the district, met with the District Medical Officer, other members of the OHMT, and administrative staff to brief them on the assessment, to collect district data, and to select health facilities for assessment. Intensive investigations at the service delivery level took three to six hours, including data collection, analysis, and de-briefing given to facility staff and other stakeholders at the end of each visit. On average, each district team visited four health facilities. Sixteen teams were formed who visited 32 districts in 8 regions and 64 health facilities in the 32 districts. A national level team was also formed to assess national level MOH, partners and other related sectors. The category of health facilities visited were hospitals health centres and dispensaries.

After data were collected from health facilities, teams returned to the district health offices to collect additional district level data and to de-brief the OHMT and other stakeholders. A similar process occurred at the regional level. Feedback was given at the end of each assessment at the health facility, district, regional level, and national levels.

Upon returning to Dar Es Salaam, regional teams met to consolidate their data, to agree upon the major findings and conclusions of their visits, and to share these with the team. Then, the team divided into functional groups to analyze the data from each region pertaining to their area. They consolidated data from the regional reports, made conclusions that applied to all or most of the districts and regions visited, and refined and added recommendations based on those already developed by the regional teams and their technical expertise.

Recommendations were prepared by functional areas and by level of responsibility (i.e., health facility, district, regional, and national). A smaller group of team members then organized the recommendations into a draft report for the Ministry of health. This draft was reviewed once again by the team before the recommendations were presented to the members of the ICC.
Initial implementation steps were included in the report to the Ministry and the ICC. MOH officials responsible for immunization services, managers at the regional and district levels, and development partners will determine their specific responsibilities for implementation and monitoring. Tool for the assessment was developed by WHO Headquarters and other partners.
FINDINGS

The overall goal of this assessment was to review the status of current immunization operations in Tanzania and identify needs for improvement in the immunization program itself or in the health system of which it is a part.

The findings were categorized by functional areas as shown below:

Objective 1: Review of the Status of Immunization Operations

Coverage status

- Nation-wide surveys show that coverage with DTP3 has been in the low 80's for 10 years. However, data from visits to districts suggests that the number of doses administered has declined in many districts, some to a greater extent than others.
- Dropout rates are increasing and/or high in some areas.
- There is widespread uncertainty about population denominators for children under 1, and substantial variation in denominators, which are used between and within districts. This is especially evident in urban areas.
- TT2 coverage data are misleading because of inaccuracy in doses administered (numerator), and variation in population denominators used at health facility level.
- Coverage and dropout rates are not routinely calculated in many facilities and districts.

A number of factors contribute to low coverage/high dropout rates. Among the major factors are:

- Ineffective and insufficient supervision due to lack of knowledge of immunization issues, integration of supervisory tasks, etc;
- Relatively few or decreasing number of immunization sessions due to concern over wastage, limited number of sterilizers, etc;
- Limited/reduced outreach activities caused by lack of transportation, poor response due to limited prevention/care opportunities included, discontinuation of allowances for outreach, etc;
- Large numbers of missed opportunities for immunization due to failure to integrate outpatient care with immunization, failure to check cards, etc;
- Inadequate community support and response due to poor community involvement, etc;
- Vaccine and kerosene stock-outs (see logistics and supply)
- Concern of the public over specific issues (contraceptives, fear of reusable syringes, etc).
- Inadequate follow-up of defaulters.
- Coverage and dropout rates are not used for management at any level (HF, district, and region) in some areas.
- In a few under-served areas, lack of facilities and staff results in impractically large
Disease surveillance

- The national AFP surveillance rate exceeded the target of 1/1,00,000 yet AFP surveillance has not reached recommended targets for surveillance indicators in the majority of regions assessed.

- **Measles cases and deaths are declining but are under-reported. Outbreaks occurred in all regions in 1998 and predominantly affected persons > 5 years**

- **Neonatal tetanus is declining however in the majority of regions, surveillance is not active** of investigating neonatal deaths for NNT cases

- Surveillance data is collected using the HMIS forms which were available in all I Health Facilities assessed yet these data is not neither analyzed nor used for planning.

- Though some private Hospitals participate in providing immunization services, surveillance activities are not routinely conducted in private health facilities:
- Surveillance data reporting is frequently linked with supervisory activities. District and regional supervisors as one of their duties collected the HMIS forms. As a result reporting is frequently incomplete and late with errors in compiling data from level to level within the health system.

Logistics and vaccine supply

Service delivery

Many of the findings of the assessment team were reported in the Report on the Cold Chain Evaluation conducted in 1999 for the Ministry of Health EPI. Unfortunately, few changes were made since that study.

The stagnation and decline of immunization service coverage and quality can be traced in large measure to logistics and vaccine supply problems, as seen below.

Vaccine supply and quality.

The cold chain evaluation of 1999 found that 31 percent of health centers visited had vaccine shortages. This problem can be linked to transport, logistics, and infrastructure problems in remote areas that result in periodic stock-outs even when planning has been good. Stock-outs of kerosene also have been persistent problems over the last
The team saw many health facilities with vaccines that had expired or were near to expiry. In enquiring about this at higher levels, the team found that districts and regions had distributed vaccines that were nearing their expiry date. The Medical stores Department (MSD) handles distribution

**Wastage.**

Wastage is not calculated or used at the service delivery, district, or regional levels. When calculated by the assessment team, it was found generally to be high.

One team found that some health workers do not understand the current national opened vial policy. In particular, some take the erroneous view that vials of reconstituted measles vaccine can be held over for 24 or even 48 hours. This practice is fraught with peril for the child.

**Cold chain equipment**

The team found that much of the cold chain equipment was obsolete and expensive to operate. Cold chain spare parts are not available, particularly at the service delivery level. Many health workers lack basic skills in maintenance and repair of cold chain equipment.

**Injection safety.**

Public health facilities use sterilizeable syringes and needles, with the few exceptions including private clinics. Lack of TST spots and timers for sterilization lead to doubts about sterilization. Disposal of sharps is also a problem, despite local innovations in the form of plastic buckets and concrete containers.

**Transport**

Bicycles are either unavailable or out of repair at the service delivery level, to which the decline in outreach is attributed by health workers. The lack of transport also makes it difficult for health workers to replenish supplies and combined with the lack of communication, to deliver routine or emergency reports. The medical supply system does not appear to provide reliable and adequate supplies for the safe and effective provision of immunization services.

Existing stock ledger books do not have a column for recording expiry dates and lot/batch numbers of vaccines.

Though the Drug Control Board has been in operation mainly in undertaken regulatory activities for drugs, there is no National Regulatory Authority or National Control Authority (NCA) for certifying imported vaccines.
Kerosene and other supplies

Kerosene shortages are frequent at district and health facility level. The lack of kerosene prevents continuous operation of kerosene refrigerators and the sterilization of injection equipment, interrupting immunization services.

Management of immunization supplies is poor resulting in stock-outs and interruption of services in many instances.

Cold chain equipment

Much of the existing cold chain equipment must be replaced as it is obsolete and inconsistent with CFC requirements.

Freeze watch indicators are not in use in facilities where vaccines are stored, putting freeze-sensitive vaccines at risk of damage.

Wastage

Health workers do not know how to use available information on doses used and vaccinations given to calculate wastage rates and to forecast vaccine and other supply needs.

Safe injections

Spare parts for sterilizers, e.g., gaskets, sterilizeable injection supplies (Kit B), TST spots (Temperature - Steam - Time indicators), and timers are needed in many health facilities.

Training and equipment for the disposal of sharps and injection waste are needed in every health facility.

Communications

Reliable means of communications do not exist between service delivery facilities and districts and in some regions, district and regional offices.

Transport

Bicycles are needed to facilitate outreach where there are passable roads or trails.

Central vaccine distribution system

The previously cited Cold Chain Evaluation of 1999 did not include the central level. Therefore, expert members of the assessment team reviewed this aspect of the cold
Vaccines are distributed in 14 regions as follows: the regional cold chain officer (RCCO) sends a requisition to EPI; EPI sends an authorization to MSD; and MSD distributes to the regional vaccine stores. In six regions, vaccines are distributed directly from the central or zonal vaccine store to the district. Vaccines are transported on the same schedule and in the same shipment as drug kits, but a van is available for urgent deliveries. MSD has been instructed to reinstate regional vaccine stores in the six regions where distribution is currently done from the central or zonal store straight to the district level.

Communication problems continue between MSD and EPI, particularly with respect to non-vaccine supplies.

Central vaccine store and central warehouse

The assessment team found that all vaccines in the central store were well kept. None of the vaccines tested failed the shake test. Inventory records were well kept, with twice yearly physical stock checks, which in 1999 showed insignificant discrepancies between stock in book and stock in hand. The vaccine store has no current problem of under stocking or overstocking for any vaccines other than polio, and no vaccines have expired at the central level, as compared to the peripheral levels, in recent years.

Domestic vaccine consignments are sent by road or by air, depending on the distance. The team had no opportunity to observe drivers in action. The team saw no errors in packing during a packing session for an air consignment to Kilimanjaro. Freeze-watch indicators are included for domestic shipments of DPT and TT, and 3M time/temperature cold chain monitors are used for all antigens. Diluent is dispatched in the same cartons as those in which it arrived. The recipient is required to complete and return to MSD a form showing whether the goods were received in good condition to check on quality of packing and dispatch.

In contrast to vaccine storage, the warehouse for non-vaccine items was poorly organized, with inadequate stock records and items arranged so that stocktaking was almost impossible. In particular, the team was unable to count vaccine carriers or cold boxes, which were not positioned so as to permit stock verification. The warehouse for non-vaccine items shares room with large stocks of expired antibiotics that cannot be moved for the time being. The entire warehouse, which is without full-time personnel, showed serious signs of neglect and poor management. In contrast to central vaccine storage, handling, and distribution, which are very good, non-vaccine supplies are handled poorly.

Communications

As would be expected, community involvement in health services varies by community and health facility staff. In some, involvement is limited. In others, communities provide funds to supplement kerosene supplies, transport health workers to remote communities.
for outreach, carry messages from the facility to the district office, and transport patients. The public is generally more involved in NIDs than in routine services, but this level of interest is not sustained when the resources and excitement are withdrawn.

The assessment team was unable to assess public knowledge about immunizations directly, although health workers report that it is high, particularly after NID campaigns. Nevertheless, public knowledge about immunizations, the schedule, and the time and location of sessions in their area should be considered as a possible reason for the stagnation of coverage.

Although client or parent and health worker communication and health teaching activities were not examined at great length during the assessment, enough information was collected through observation and discussions with health facility staff to make its effectiveness doubtful. Poor communication may be one reason why the dropout rate is high. Community involvement in all health services must be continually nurtured. Communications between health workers and parents and health education may be part of the problem of declining coverage and dropouts.

Health system

First, health sector reform, which is in the process of implementation throughout the country, must be considered as a major feature in an assessment of any aspect of the health system, including immunization operations. While the full impact of the reform has yet to be seen, some consequences are already evident. For example, the vaccine distribution system has been integrated with drugs, as described in the section on logistics above. The Health Management Information System (HMIS), although still running in parallel with preventable and infectious disease reporting systems, includes vaccine-preventable diseases.

While there is still a national-level immunization programme unit in the Ministry of Health, the responsibility for managing immunization operations is gradually devolving to the district. Members of DHMTs do not yet have the training to manage these activities or to provide the training and support that health workers need to perform them. For example, some DHMT members do not have the knowledge or experience needed to recognize or solve problems such as poor maintenance and repair of equipment, lack of basic supplies, and unsafe practices.

Other health system problems that were observed by the team include:

Staff allocation.

The low level of salaries seriously affects staff motivation. Because they are disproportionately low compared to expense allowances for supervisory visits, district staff members scramble to make these visits whether they have anything to contribute or not.
The lack of staff is partly due to the re-trenchment of several years ago and inequity of distribution in terms of quantity and quality (e.g., in Kagera: 16% of vacancies in hospitals against 37% in rural health units).

**Training.**

Staff at all levels, particularly health facility and district levels, often lack management skills and specific knowledge in:
- Cold chain management and disease surveillance
- Calculation of performance indicators
- Cold chain management
- Disease surveillance (clinical diagnosis of AFP, case definition of measles and other EPI diseases)

In many areas health workers seemed unfamiliar with calculation methods, safe injection practices, and WM interpretation. Introduction of new vaccines will require training of health staff, as well as IEC activities for the public.

**Support and supervision**

- Reports are not issued nor feedback given during or after supervisory visits
- Only 25% of planned supervision visits are carried out.

**Financing and administration.**

- Advocacy for financial support is mainly focused on NIDs, not on routine services.
- Financial management is poor especially at the more peripheral levels of the system.
- More funds should be allocated funds at the national level for supplies and spare parts.

- Lack of allowances and fuel may be the reasons for 20% of outreach failures.

- Funds from the central level are irregularly allocated.
- Generally, there is no cash-management system at the health facility level (especially for emergencies).
- No accounting procedures exist for basket funds

**Information system**

- The DHMTs and RHMTs lack stationery, supplies, technology, and skills for data monitoring and analysis.
- Sixteen forms are required from health facility staff for HMIS and parallel information systems
- Information is not used at the level at which it is collected and at which corrective measures must be taken.
- Performance indicators for the HMIS are inadequate.
Staff hiring and allocation

The low level of salaries, especially in comparison to travel allowances, seriously affects staff motivation.

Lack of staff with the proper qualifications and up-to-date training affects all aspects of service delivery.

Supervision

The supervision and monitoring of performance, including but not limited to immunization services, is inadequate and appear to have contributed to serious problems in service delivery.

District planning

District planning will be an academic exercise as long as inconsistencies between budget and allocations persist.

Contractual agreements between districts, MOH, and DANIDA apparently need to be monitored and reinforced.

Comprehensive District Plans appear to consist of a compilation of sectoral plans, with little priority setting among competing demands for resources. Where priorities are set, the rationale is not evident and EPI is not given the priority it needs because of erroneous notion that EPI is well funded from non-block grant sources.

The concept of planning has not yet reached all health facilities, where it is needed for the selection of strategies for increasing service coverage, for maintaining sufficient stocks of vaccines and supplies, etc.

Planning is carried out without looking at data on coverage, disease incidence, supplies, wastage, etc.

Information system

Regional, district, and health facility staff lack skills for data monitoring and analysis. Without such analysis, the data are never checked or used.

Health facility staff members in particular are unsure about what forms to use for what purpose.
OBJECTIVE 2: Review of the desirability and feasibility of introducing Hepatitis B vaccine in Tanzania

Disease burden

Most of the studies on hepatitis B in the last 20 years in Tanzania have calculated the proportion of Tanzanians who have evidence of infection from laboratory studies on blood samples (serology). The proportions of people who are carriers (HBsAg-Positive) have varied between 3.5 and 15%. Tanzania has a moderate to high infection status, according to WHO criteria (above 7% of population are carriers).

In contrast to the carrier rate, most studies showed 70-80% of the general population has been infected at some time.

Reliable data on liver cancer and cirrhosis deaths in Tanzania from a national, or population-based, study are generally unavailable due to the lack of diagnostic capacity, to the fatal nature of the disease, and lack of therapy. Patients with end-stage liver disease and liver cancer are frequently not admitted to the hospital or are discharged to die at home.

The assessment team was able to collect some data on disease burden at KCMC in Kilimanjaro. There, team members reviewed discharge diagnoses and mortality reports, which showed that in 1998, there were 34 discharges with liver cancer and 5 deaths in hospital, for a total of 39 deaths (since all liver cancer patients die of their disease relatively quickly). In 1999, this increased to 49 discharges and 14 deaths, a total of 63 deaths. At the same hospital, there were 44 and 63 diagnoses of chronic liver disease, in 1998 and 1999 respectively. Most, if not all, of these patients will die from their disease. These data leave little doubt that deaths from liver disease are frequent in Tanzania.

As an alternative to mortality data, specialists on the team used a model developed by CDC and WHO/Geneva to estimate the number of deaths caused by hepatitis B in Tanzania in a birth cohort (or in a year). Using data points ranging from low through high, the model indicated that 12,000 to 27,000 deaths would occur in the current birth cohort in Tanzania due to hepatitis B. Immunization with hepatitis B vaccine would prevent most of these deaths.

The cost effectiveness of hepatitis B vaccination is substantial with a cost of less than $50 per year for every life saved.
The feasibility of introducing hepatitis B vaccine

The assessment included a review of immunization services to assess the capacity of the system to integrate a new vaccine.

Assuming that combination DTP-hepatitis B vaccine would be used (with essentially the same space and injection material requirements as currently needed for DTP alone), the team found that the current cold chain space would suffice. Assuming that the significant problems with other aspects of immunization operations, e.g., disruption of immunization operations due to equipment failure or vaccine stock-outs and injection safety, are resolved, hepatitis B vaccine can be integrated into the system.

The question of vaccine wastage deserves special attention because of the vaccine's high cost. Currently, wastage data are not routinely calculated, and when they are, tend to underestimate wastage. In some districts, official wastage rates were quoted as less than 10% for DTP, but when the assessment team made estimates, wastage was in the range of 20-30%. The estimated hepatitis B vaccine budget for Year 1 of implementation is $3 million. Given that cost, even wastage of 5 to 10 percent constitutes an enormous economic burden.

Introduction of the multi-dose vial policy, as recommended, may help to solve the wastage problem generally.

The introduction of auto-disable (AD) syringes at the same time, as hepatitis B vaccine may also be a good strategy for increasing injection safety. Use of auto-disable syringes in Tanzania is advocated by the Ministry of Health and is among the recommendations of this assessment team. At the moment Tanzania is using sterilizeable needles and syringes.

Lack of awareness of the disease and its prevention at all levels of the health system and among the public must also be addressed. In many districts, neither health workers nor mothers were found to be aware of the diseases caused by hepatitis B. Physicians do not necessarily agree that hepatitis is a priority problem. On the other hand, health workers said that the introduction of the vaccine (in combination form) could be accommodated and parents accepted the notion of protecting their children with another vaccine (especially if it did not require an additional injection!).

Though Hepatitis B is a major public health problem in Tanzania, with about 80% of the population having been infected at some time, there is little recognition of the problem, however, by either the public or the health community.

Introduction of hepatitis B vaccine into the Tanzanian immunization program as a combined vaccine (with DTP) can be done without disruption. It can not be done with confidence of uninterrupted vaccine supply and safe injection practices, however, without the changes to the system that are recommended throughout this document.
Objective 3: Identification of new Vitamin A supplementation strategies

Vitamin A is slowly being integrated into routine immunization sessions as vitamin A during polio NIDs is scaled down. However, national coverage data are lacking on postpartum vitamin A supplementation to mothers, infants and on the number of doses given.

Currently vitamin A is included in EDP drug kits for only dispensaries and Health Centres. Private and NGO health facilities are not supplied drug kits. Some health facilities have stock-outs while others have excessive stocks. No national Plans exist for the integration of Vitamin A into routine EPI.

RECOMMENDATIONS

OBJECTIVE 1: Review of the Immunization operations

Health Systems

- The Government of Tanzania (Mainland) should be commended for contributing 10% of the funding required for vaccine purchases. The Government is urged to continue looking for means to increase national budget allocations for the procurement of the basic vaccines.

- The Ministry of Health (MOH) should use the findings regarding the costing and financing of immunization activities at all levels to guide the planning and budgeting process.

- The MOH should take the lead in strengthening partner co-ordination of support provided to the immunization program in the context of health system needs. This may include reinforcing technical consultation mechanisms and identifying more effective ways of channeling donor funding. The role and responsibilities of the EPI Inter-agency Coordination Committee (ICC) should be re-examined as part of this effort to improve co-ordination among partners.

- The MOH should enhance its efforts to help Regional Health Management Teams (RHMTs) strengthen the capacity of District Health Management Teams (DHMTs), particularly in the preparation of district health plans. Planning and budgeting should
be carried out in co-operation with District Councils and communities in order to ensure their continued support of immunizations as well as other priority health interventions. Budgets should reflect integration of funding from central, district and local levels as well as involvement of external partners.

- The MOH should establish procedures to promote closer collaboration and consultation between health planners and national programs, including EPI.

- The MOH should integrate the EPI 5-Year Strategic Plan of Action (after revisions resulting from this review) into the Health Sector Program of Work (POW) and the sector appraisal process. Priorities for the immunization program should be reflected in the revised five-year Strategic Plan of Action.

- The MOH should review the organization of the national immunization program to ensure that staff responsibilities related to immunization are consistent with the changes being made in the health sector.

- The MOH should consider requiring and making available at least two qualified staff, e.g. Clinical Officer and Public Health Nurse-8, for every dispensary.

- The MOH should address the fundamental mismatch between the level of salaries and the amount of allowances in light of civil service reform.

**Supervision**

- In coordination with the PHC Secretariat and the Human Resources Department, MOH/EPI should review the immunization section of the integrated PHC supervisory guidelines to ensure that the problems identified during this assessment are addressed. They should provide assistance to RHMTs and DHMTs on the use of these guidelines.

- The MOH should ensure that supervisors receive the training and support they need to provide managerial and technical support on all aspects of the health services to workers at the peripheral level. For immunization services in the immediate future, supervision should focus on the major problems identified in this assessment, as described in the final report.

**Training**

- To ensure training effectiveness and facilitate planning, MOH should assemble a list of training needs that are not now being met. Training needs may include new responsibilities acquired as part of health sector reform and the new demands of hepatitis 8 vaccination and Vitamin A.

- Based on training needs assessments, the MOH should prepare a master training plan addressing all health system needs. The master training plan should provide
training in phases, based on priorities. Some skills, such as supervision, monitoring, and communication, are generic and can be applied to all health services. Technical skills will be more program or service-specific.

**Immunization Services**

- The MOH/EPI and HMIS should review current guidelines for calculating TT2+ coverage and promote the use of the WHO/UNICEF-recommended formula for estimating protection at birth. The MOH/EPI should ensure that cards are available for all women of childbearing age.

- The MOH/EPI should provide districts with assistance in selecting and planning specific strategies to increase immunization coverage. These strategies might include: screening eligible children and mothers attending outpatient clinics, encouraging card retention, offering more frequent immunization sessions, using defaulter tracing mechanisms, and increasing outreach activities.

- The MOH/EPI should review the use of population denominators at the district and regional levels to ensure that they are truly representative of target populations and to ensure consistency in data analysis and compilation.

- The Government of Tanzania should provide more accurate population estimates for regions, districts and lower levels by conducting a new census or another demographic survey. GOT should develop a system for improved registration of births and deaths for the collection of accurate population data by age group. These data will provide more accurate denominators for calculation of key health indicators including neonatal and infant mortality rates and vaccine coverage.

**Disease Surveillance**

- The MOH should accelerate the implementation of the integrated disease surveillance system at all levels, including NGOs and private facilities. The integrated system should include AFP, measles, neonatal tetanus, cholera, and other priority diseases.

- The MOH should promote the analysis of surveillance data at all levels (with reporting and feedback among levels) and its use at the level of collection for planning routine services and disease control efforts.

- The MOH/EPI and HMIS, Epidemiology Section should integrate efforts in monitoring completeness and timeliness of surveillance reporting.

**Logistics and vaccine supply and quality**
• The MOH must ensure that all injections are safe and that injection waste is safely destroyed. The provision of sufficient sterilizable needles, injection equipment, sterilizers, and TST spot sterilization indicators must be assured. Safety boxes should be supplied to all health facilities. Medical waste incinerators should be tested and installed.

• The MOH/EPI should study further the feasibility of introducing auto-disable (AD) syringes into routine immunization services as suggested in the recent UNICEF/WHO joint statement. Introduction of AD syringes should occur only when the MOH is assured that capacity for safe disposal is sufficient and appropriate management procedures are in place.

• The MOH/EPI should adopt the WHO/UNICEF "Multi-dose Vial Policy." The adoption and implementation of this policy would improve the cost efficiency of immunization services and would enable health facilities to provide more frequent immunization sessions. The implementation of the policy should not be carried out before training staff at all levels enhanced supervision, and the distribution of health promotion and instructional materials.

• The MOH (Medical Stores Department and EPI) should further investigate the shortcomings in the reliable distribution of vaccines and other immunization supplies found in this assessment. This in-depth review should include the Medical Stores Department at national and zonal levels and regional and district vaccine stores. The Memorandum of Understanding between the EPI and MSD should be revised to provide for specific channels of communication, information sharing, and schedules regarding stock and quality checks and reporting. The MSD should assist in the development of procedures and methods for setting minimum and maximum stock levels at regional and district levels.

• The MOH/EPI should ensure that the problems described in the 1999 Cold Chain review, most of which still exist in the regions visited in this assessment, are addressed as soon as possible.

• The MOH, in collaboration with local governments, should ensure that bicycles and the resources needed for repair are available to health workers for outreach and mobile services and community participation activities (e.g., Village Health Days).

• The MOH, in collaboration with local governments, should provide assistance to DHMTs in installing a procedure for priority setting relative to vehicle use to ensure that legitimate health needs are met and that emergency situations can be handled.

**Performance monitoring**

Every six months, every level of the health care system should analyze data on: BCG and DPT3 vaccinations compared to the previous year
Percentage of outreach sessions carried out

31
29/04/00
• Percentage of refrigerators functioning

• The MOH and HMIS should prepare, twice yearly, reports showing performance of these indicators by district and by region. Where performance is poor, health facilities, districts, regions, or the national level, as appropriate, should use these data on performance in planning corrective measures.

• The MOH/EPI should share quarterly with the partners, through the ICC, information on performance of immunization services included in the HMIS reports.

Communications

• The MCH/EPI should revive the use of immunization advocacy meetings or similar forums to raise awareness and promote immunization and Vitamin A supplementation at all levels.

• The MOH, in collaboration with local governments, should develop strategies for regional, district, and local staff to promote the involvement of local leaders in planning and supporting immunization services.

• Each comprehensive district plan should include specific activities for the promotion of immunizations.

Objective 2: Review of the desirability and feasibility of introducing Hepatitis B vaccine in Tanzania

• The MOH should introduce hepatitis 8 vaccine into the routine immunization program, administered according to the same schedule as and in combination with OPT as a single injection.

• Extensive training of health workers and education of the public on the disease and the vaccine should accompany the introduction of hepatitis 8 vaccine. This training should include aspects of immunization service delivery that are in serious need of improvement, as identified in the final report.

Objective 3: Identification of new Vitamin A supplementation strategies

• The Tanzania Food and Nutrition Center, MOH, and relevant partners should jointly review the 1997 policy guidelines and develop or update annual and medium-term plans of action for elimination of vitamin A deficiency (VAO).

• Plans of action should include all supplementation strategies and address the harmonization of vaccine and supply needs forecasting, specify institutions
responsible for supporting implementation, and define monitoring systems.

- The MOH and its partners should review recording and reporting procedures for vitamin A capsule supplementation (family-held cards, HMIS) to improve the monitoring of program performance.

**Objective 4: Review of the EPI strategic plans**

- Many of the recommendations in this report are included in the National EPI Strategic Plan, 2000-2004. The MOH and its partners should review the proposed recommendations, activities, and costs, establish priorities, identify available resources, and identify funding gaps.

- The MOH should take into consideration current modalities and strategies for partner support relative to health sector reform and align revised EPI plans with plans for the health system in general.