E2938

Ministry of Health

HEALTH CARE WASTE MANAGEMENT PLAN FOR THE NUTRITION AND HIV/AIDS PROJECT

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ABBREVIATIONS AND ACRONYMS

AD	Auto-Disable (type of syringe)
AIDS	Acquired ImmunoDeficiency Syndrome
BCG	Bacille Calmet-Guerin
CBO	Community Based Organization
CI	Confidence Interval (used in data tables)
CHAM	Christian Health Association of Malawi
DEA	Department of Environmental Affairs
DFID	UK Department for International Development
DTP	Diphtheria - Tetanus – Pertussis
EPI	Expanded Programme on Immunization
GAVI	Global Alliance for Vaccines and Immunization
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit
HepB	Hepatitis B
HepC	Hepatitis C
HCF	Health Care Facility
HCW	Health Care Waste
HCWM	Health Care Waste Management
HCWMP	Health Care Waste Management Plan
Hib	Haemophilus Influenza Type B
HIV	Human Immunodeficiency Virus
IS	Injection Safety
JHPIEGO	Affiliate of John Hopkins University (non-profit co-operation)
JICA	Japanese International Co-operation Agency
KfW	Kreditanstalt für Wiederaufbau
KAP	Knowledge Attitude and Practice
LG	Local Government
MACRO	Malawi AIDS Counselling and Resource Organisation
MK	Malawi Kwacha
MOH	Ministry of Health
MNREA	Ministry of Natural Resources and Environmental Affairs
NGO	Non-Governmental Organisation
NHP	Nutrition and HIV / AIDS Project
POA	Plan of Action
STC	Short Term Consultant
STI	Sexually Transmitted Infections
TST	Time, Steam, Temperature (Indicator device for sterilization cycles)
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WB	World Bank
WHO	World Health Organization

EXECUTIVE SUMMARY

Government of Malawi, through the Ministry of Health in collaboration with the Department of Nutrition, HIV and AIDS and the National AIDS Commission, has initiated a Nutrition and HIV/AIDS Project (NHP) which will comprise a range of investments including some clinical activities that will generate medical waste. Clinical activities will be carried out at mobile circumcision centres linked to a number of district hospitals and several birthing, and ante-natal service centres, some of which are located at the district hospitals. The implementation and delivery of this project is anticipated to generate modest volumes of healthcare wastes. The wastes that shall be generated through this project shall include:

a) Wastes categorised as hazardous/infectious wastes;
b) Pharmaceutical and chemical wastes; and
c) General wastes.

To ensure public health and safety of waste handlers and the environment, all wastes generated under this project, just like any other form of waste will be required to be properly managed and disposed of while recognising the need for proper and adequate systems to be put in place. This Health Care Waste Management Plan (HCWMP) specifies steps to be taken under the NHP to ensure that healthcare waste generated by the project is dealt with appropriately, in accordance with the draft National Health Care Waste Management Policy, and with WHO good practice guidelines and World Bank Group Environment, Health and Safety guidelines.

The HCWMP for the Nutrition and HIV/AIDS Project is consistent with and builds upon the approach of the National Health Care Waste Management Plan developed under the previous Malawi AIDS Project, including where necessary actions to complete strengthening of national HCWM systems that were begun under the National Plan. The NHP differs from the Malawi AIDS Project, however, in that it will fund a limited set of identified activities, the health care waste implications of which have been identified and roughly quantified. The current HCWMP is therefore focused on ensuring that project impacts are suitably mitigated, while strengthening national systems in parallel, but is not intended to provide a comprehensive plan for all HCWM issues in Malawi. The HCWMP has adopted the following structure:

a) Background to the project and purpose of HCWMP;
b) Description of the project;
c) Types, sources and volumes of anticipated wastes under this project;
d) Status of health care waste management in Malawi;
e) Legal and institutional framework for health care waste management in Malawi; and
f) Specific Plan of Action:
    i) Finalisation of the National Health Care Waste Management Policy;
    ii) Development of National Guidelines in HCWM;
    iii) Development of training materials;
    iv) Provision of training;
    v) Development of HCWMPs for each project health care facility;
    vi) Provision of additional equipment;
    vii) Upgrading existing facilities;
    viii) Private sector involvement in HCWM; and
    ix) Monitoring the performance of the HCWMP.

CHAPTER ONE: BACKGROUND INFORMATION AND PURPOSE OF THE PROJECT

1.1 Background

Government of Malawi (GoM) with support from the International Development Association (IDA) would like to implement the Nutrition and HIV and AIDS Project. The initiative is expected to deal with nutrition, HIV and AIDS problems that Malawi is currently facing. The country has one of the highest HIV/AIDS prevalence rates in the world, with 10.6 percent of adults infected with HIV. Furthermore, Malawi has one of the highest rates of child stunting and very high rates of infant and child mortality. With these developments, nutrition, HIV and AIDS have been identified as key priority areas which have considerable impact on human development and socio-economic growth in the country. Further, it has been observed that the impact of HIV/AIDS on Gross Domestic Product growth is yielding a negative impact of 1-2 percent per year. Although the management of HIV/AIDS has improved average life expectancy from 46 years in 1987 to 54.6 years in 2010 (UN Human Development Report, 2010), substantial efforts are still required to make positive progress in containing the spread of HIV and AIDS. Similarly, through its impact on cognitive development, school performance and adult productivity, malnutrition is associated with lower wages, lower lifetime earnings and increased poverty. The total economic loss due to malnutrition (principally stunting and anemia) over a period of ten years in present value terms is estimated at $446 million.

Health care service delivery in Malawi is provided by the Government and the private sector. The Ministry of Health contributes about sixty percent while the Christian Health Association of Malawi contributes thirty seven percent. The Ministry of Local Government contributes about one per cent while the private sector, the Army and the Police contributes two per cent of the overall health care service provision. Statistics indicate that there are 114 CHAM health facilities while 209 is the total for company clinics and private health facilities. There are twenty seven Government owned district hospitals besides the four central hospitals and nearly 271 clinics all owned by Government.

Under the Nutrition and HIV/AIDS Project, services will be provided by district hospitals throughout the country, mobile male circumcision centres (linked to a number of district hospitals), and several dozen birthing centres and ante-natal centres, some of which will be located at the district hospitals.

1.2 Aim and objectives of the proposed Nutrition and HIV/AIDS Project

The proposed project is expected to expand access to and increase use of essential services for nutrition and HIV and AIDS. For nutrition, the focus will be on interventions and services that will contribute to the reduction of stunting and anaemia. For HIV and AIDS, the activities will build on the experience from the current project and will provide support to contribute to the reduced incidence of HIV infections particularly among the drivers of the epidemic through geographic and risk group targeting, while mitigating the impact of HIV and AIDS on the Malawian people.

The objectives of the project will be met through a set of evidence-based, innovative, and pragmatic interventions that will be built on lessons learned from past interventions. The selected proposed development objectives indicators will include but not limited to:

a) Proportion of children under two who will be receiving a monthly minimum package of community nutrition services in the intervention districts;
b) Percentage of children 6–23 months of age who will be receiving minimum diet diversity in the intervention districts;
c) Percentage of pregnant women who will be attending ANC in first trimester in the intervention districts;
d) Number of neonatal and post neonatal males who will be circumcised;
e) Number of HIV positive pregnant women who will be receiving ARV to reduce the risk of mother to child transmission;
f) Percentage of infants born to HIV positive women enrolled in PMTCT who will be receiving a virological test for HIV within two months of birth; and
g) Percentage of men and women reporting the use of condoms during sexual intercourse at last high risk sex - sex with a non co-habiting or non-regular partner.

1.3 Project description

The proposed Nutrition and HIV/AIDS project will have two components which will include support for nutrition improvement and support for the implementation of the National HIV/AIDS Strategic Plan for 2011-2016. Support for the implementation of the HIV/AIDS component is national in scope and will be implemented in all the 28 districts of Malawi within existing health facilities.

Support for nutrition improvement will be implemented in 13 districts of Malawi, which shall include Nkhatabay, Neno, Rumphi, Mzimba, Likoma, Nkhotakota, Ntchisi, Zomba, Chiradzulu, Blantyre, Mulanje, Thyolo and Mwanza.

1.4 Project Proponent

The project proponent is Government of Malawi through the Ministry of Health. The proponent details are as follows:

Proponent Name **:** Ministry of Health, P. O. Box 30377, Lilongwe

1.5 Rationale for the preparation of the HCWMP

Within the World Bank Safeguard policies, the project is categorized as B implying that the expected environmental impacts are largely site-specific, that few if any of the impacts are irreversible, and that mitigation measures can be designed relatively readily. The Bank's ten safeguard policies are designed to help ensure that programs proposed for financing are environmentally and socially sustainable, and thus improve decision-making. The Bank's Operational Policies (OP) are meant to ensure that operations of the Bank do not lead to adverse impacts or cause any harm. The Safeguard Policies are lumped into Environment, Rural Development, Social Development and International Law. The proposed HIV/AIDS and Nutrition Project will trigger World Bank's safeguard policy OP 4.01 Environmental Assessment. The objective of OP 4.01 is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through

appropriate analysis of actions and mitigation of their likely environmental impacts. This policy is triggered if a project is likely to have potential adverse environmental risks and impacts in its area of influence.

1.6 Purpose of the HCWMP

The overall objective of the HCWMP is to detail steps that will ensure that HCW generated by the project is dealt with in an appropriate and safe manner, consistent with international good practice and World Bank environment, health and safety guidelines. Specifically, the HCWMP was prepared in order to:

a) Estimate the types, volumes and locations of HCW expected to be generated by the project;

b) Review existing national HCWM regulations, systems and practices;

c) Identify both national and site-level activities needed to strengthen HCWM practices to adequately deal with the HCW generated by the project;

d) Identify a minimum set of HCWM standards, consistent with WHO and World Bank guidelines, to be followed in all project-supported health care facilities, until such time as these are superseded by finalization of national guidelines;

e) Identify roles and responsibilities including reporting procedures and monitoring and evaluation; and

f) Identify funding requirements and resources to ensure effective implementation of the HCWMP.

1.7 Methodology

The methodology for preparing this HCWMP followed the steps outlined below:

a) Review of existing project documents which the client provided;
b) Review of implementation approach and processes for the activities of the project;
c) Identification and analysis of potential environmental and social impacts associated with the implementation of project activities which are likely going to be triggered and generated by the project activities; and
d) Identification of appropriate mitigation measures for the predicted impacts and preparation of a management plan for addressing the environmental and social impacts during implementation of the project activities.

Details of the methodology included:

1.7.1 Information gathering

The information for this study was collected through review of related literature from published and unpublished documents, field survey and investigations, and stakeholder consultations. Details of stakeholder consultation workshop are provided in Annex 1.

(a) Desk Study

Some of the information was obtained from the draft Environmental Safeguards Documents for the Malawi Nutrition and HIV/AIDs Project, which included the Environmental and Social Management Framework (ESMF) and the Healthcare Waste Management Plan (HCWMP) and some selected national documents, which included policies and pieces of legislation with a bearing on the project activities.

(b) Stakeholder Interviews

The expert held a series of stakeholder consultations throughout the study period. The mode of consultation involved in depth interviews with key informants on one to one basis. Questionnaires were developed which were used to guide consultations in order to obtain appropriate information from the stakeholders.

CHAPTER TWO: DESCRIPTION OF THE PROPOSED PROJECT

The proposed nutrition and HIV and AIDS project in Malawi will have two components which will include support for nutrition improvement and support for the implementation of the National HIV/AIDS Strategic Plan for 2011-2016.

2.1 Support for Nutritional Improvement

The Component will have two sub-components, which shall include:

a) Enhancing and scaling up maternal and child nutrition service delivery at community level; and
b) Strengthening sectoral policy and program development management and coordination.

2.1.1 Enhancing and scaling up of maternal and child nutrition service delivery at community level

The sub-component will require offering "minimum package" of nutrition interventions to the targeted communities that will be aligned with the Nutrition Education and Communication Strategy (NECS, 2011-2016) including, Information-Education-Communication (IEC) and Behaviour Change Communication (BCC) interventions on:

i) Infant and young child feeding practices;
ii) Home-based care and care seeking for common infectious diseases;
iii) Weight gain, food diversification, timely start of antenatal care, and anaemia during pregnancy;
iv) Child spacing of pregnancy for post-partum mothers;
v) Prevention of malaria and helminthic infections; and
vi) Promotion of hygiene, water and sanitation.

The sub-component will contribute to:

i) Strengthened nutrition service delivery platform at community level;
ii) Improved infant and young child feeding practices by caregivers;
iii) Improved home based care of and care seeking for common infectious diseases;
iv) Improved hygiene (personal, food and environmental), utilization of safe water and sanitation;
v) Improved prevention of malaria, helminthic infections and all other parasitic infections;
vi) Improved iron intake through consumption of iron rich foods and iron supplementation to women and children;
vii) Improved dietary intake by women before, during and after pregnancy;
viii) Improved household care of pregnant women and utilization of antenatal care services;
ix) Increased spacing of pregnancy for mothers postpartum; and
x) Adequate weight gain in children under two and pregnant women.

In addition to the IEC and BCC-type of interventions such as group education, individual counseling and home visits, this component envisages growth monitoring and promotion; cooking demonstrations; promotion of fruits, vegetables and small livestock; community grants; mobilization for health campaigns; latrinization; and use of safe water. The community

interventions will be implemented through District-level sub-projects by NGOs. The implementing NGOs will have the opportunity to integrate this minimum number of activities into their ongoing project activities; such as food production projects (i.e., diversification, irrigation), livelihood interventions (i.e., income generating activities, saving and credit schemes, social protection), health projects (i.e., maternal child health, family planning).

To achieve active involvement of the core target group in community-based nutrition activities, the project will apply several organizing principles, which will include different combinations of care- and support-group education sessions, home visits and situation-based-counseling by individual members of the community (e.g., volunteers), or a mix of the two forms. Each contracted NGO will in collaboration with the targeted communities develop the mobilization strategies in the contracted areas in order to secure as contextual and appropriated an approach as possible. The arrangements will thus leave it open to the NGOs to assess the most effective route of mobilization which can involve the mobilization of aunts, grandmothers, husbands in addition to the core target group of mothers and young children. The implementation of the "minimum package" of nutrition interventions should thus be accomplished in district- or community-specific ways.

Besides, the project will refurbish and re-equip existing healthcare facilities in the 28 districts of Malawi. Very minor impacts if any will be generated from this activity.

2.1.2 Strengthening sectoral policy and program development, management and coordination

The essence of this sub-component is that effective community-based development is dependent on an enabling institutional environment, both at central and district level, for support, supervision, monitoring and coordination. Hence, the coordinating and supervisory role of the DNHA, through line ministries, NGOs and DCOs is essential together with the strengthening of district-based capacity for nutrition program planning, management, monitoring and coordination.

The sub-component will contribute to:

i) Enhanced leverage over sectoral programs related to maternal and child nutrition;
ii) Enhanced policy environment for reduction of stunting and anaemia in women and children; and
iii) Strengthened stewardship, oversight and coordination of nutrition programs at central and district level.

This sub-component will support:

i) Joint planning with and financial support to the sectors for nutrition-relevant activities at central and district levels;
ii) Orientation and training workshops with stakeholders;
iii) Monitoring, reporting, surveillance and operational research;
iv) Advocacy and strategic communication;
v) Technical assistance for key responsibilities to fill gaps relevant to the stewardship, oversight and coordination function at central and district level; and
vi) An improved working environment for DNHA.

2.2 SUPPORT FOR THE IMPLEMENTATION OF THE NATIONAL HIV/AIDS STRATEGIC PLAN (2011-2016)

This component has three sub-components, which shall include:

i) Voluntary medical male circumcision;
ii) Prevention of mother to child transmissions (PMTCT); and
iii) Overall support for the implementation of the National Strategic Plan for HIV and AIDS (2011-2016), including planned expenditure in operational research and monitoring and evaluation.

2.2.1 Voluntary Medical male circumcision (VMMC)

There is enough evidence to suggest that male circumcision is an effective tool to manage HIV/AIDS problems in countries with high incidence of HIV infection. With male circumcision, infection rates can be reduced by as much as 50 to 60 percent in countries with high incidence of HIV infection. However, VMMC is an intervention which will not achieve population wide benefits in the short term and a critical mass of between 60 and 80 percent of the general population needs to be circumcised before benefits start to accrue to women. VMMC is flagged as being a prioritized intervention in the prevention thematic area of the NSP and the NSP strategy is to scale up VMMC and neo-natal circumcisions country-wide initially targeting districts with the highest prevalence and incidence of HIV infection.

Malawi is currently scaling up VMMC interventions with assistance from PEPFAR and its development partners and the country has identified strategic locations for initial investments. Lack of funds and other resources preclude a nationwide roll-out of the intervention at this time. PEPFAR's partners also have additional constraints include lack of a mechanism to pool funds to procure VMMC kits and other commodity inputs. The project will support the national VMMC program in three areas, which shall include:

i) Support for NGO/PEPFAR partners who will operate mobile clinics in a number of high prevalence districts (target 420,000 clients in the five year project);
ii) Support for 28 district hospitals throughout the country which will offer the VMMC services (target 80,000 clients in the five year project); and
iii) Neo-natal circumcision in 40 birthing centers country wide (target 140,000 circumcisions over five years).

Apart from circumcising about 640,000 males additional benefits will accrue because all or most adult males undertaking VMMC will also be:

i) Screened and counseled for HIV and referred to ART where needed;
ii) Screened, counseled and treated for sexually transmitted infections; and
iii) Provided with condoms and IEC/BCC literature.

The project will provide disposable MC kits, rapid test kits for HIV screening, drugs to treat sexually transmitted infections, condoms, and IEC/BCC materials. Mobile clinical services and training and supervision for service providers at both mobile and fixed sites will be provided by PEPFAR. Other inputs will be provided by NGO partners for mobile clinics and by the Ministry of Health (MoH) for permanent sites and neonatal circumcisions.

2.2.2 Prevention of mother to child transmissions (PMTCT)

Malawi has made considerable progress in delivering PMTCT service nation-wide but there are still considerable gaps. In particular:

i) There is a lack of a family centered approach in the program;
ii) Early infant diagnosis services are available in only a few sites;
iii) Infant feeding counseling is poor;
iv) There is a lack of mother and child follow up;
v) Many women start ANC late;
vi) The maternal, neonatal and child delivery system is weak;
vii) There is limited access to CD4 tests for HIV positive women; and
viii) There are inadequate tools to identify HIV exposed children.

There are currently approximately 17,000 new paediatric infections annually and this comprises some 25 percent of the country's new annual infections. The Nutrition and HIV/AIDS Project will assist the GoM to reduce the high rate of vertical transmission and to achieve its goal of less than 0.5 percent vertical transmissions. To assist GoM with the PMTCT program the project will provide assistance to 30 major PMTCT sites in four service areas such as:

i) PMTCT clinics;
ii) Early infant diagnosis;
iii) PMTCT mentoring; and
iv) Family planning for HIV+ women participating in PMTCT programs.

Assistance will be provided in:

i) Training;
ii) The provision of HIV test kits and some drugs and reagents;
iii) The equipment and refurbishment of PMTCT centers; and
iv) Nutritional support to HIV positive mothers and their new born infants. Antiretroviral drugs for HIV positive infants are not part of the program as these are provided by the Global Fund.

2.2.3 Support for the implementation of the National Strategic Plan for HIV and AIDS (2011-2016)

In the previous IDA funded HIV and AIDS support project (Multi-sector AIDS Project) all funds ($65 million) were unallocated and made available to support the national response to HIV and AIDS through a pooled funding mechanism (the HIV Pool) which is administered by the National AIDS Commission (NAC). Unlike the Multi-sectoral AIDS Project (MAP) which closes on 30th September 2012, the Malawi Nutrition and HIV/AIDS Project earmarks $25.6 million of the total World Bank contribution to the HIV Pool for specific interventions (VMCC and PMTCT sub-components) the balance ($24.4 million) remaining will be an unallocated contribution to the HIV pool which will be administered by NAC and applied to the implementation of the national program. The World Bank contribution to the HIV Pool will not be used for the procurement of anti-retroviral drugs, which are provided outside the HIV pool by the Global Fund for AIDS, TB and Malaria. Financial contributions to the HIV Pool are also made by the Global Fund (which historically has provided 70% of pool funds) and DFID.

Specific Activities and expenditures required to implement the NSP will be detailed in annual work plans, which will be prepared by NAC and subject to IDA no objection on behalf of HIV Pool partners.

The HIV pool will be used to fund identified priority activities planned under each of the national responses' nine strategic themes. It is anticipated that the sub-component resources may be used to fund interventions which:

i) Strengthen supply chain management systems including reforms to central medical stores;
ii) Assist with the supply and distribution of male and female condoms;
iii) Strengthen the capacity of Malawi's 28 district councils to deliver effective HIV programs; and
iv) Strengthen overall program implementation efficiency and improve governance.

2.3 Environmental and social consideration for the project activities

The project is expected to generate some negative impacts. The negative environmental and social impacts of the project activities are expected to be modest and easily manageable. Despite the channeling of funds for Component B through the Malawi AIDS Pool, the activities that are financed by or will directly contribute to the PDO of the Nutrition and HIV / AIDS project are well-defined. Potential negative environmental and related social impacts are associated with the areas that follow:

a) Clinical activities under the project which will generate both general and healthcare waste; and
b) Minor interior office refurbishment activities, and minor upgrades to existing, on-site health care waste disposal facilities at district hospitals and health centers.

The project has been categorized as B implying that the expected environmental impacts are largely site-specific, that few if any of the impacts are irreversible, and that mitigation measures can be designed relatively readily. The environmental assessment for a Category B project,

i) Examines the project's potential negative and positive environmental impacts,
ii) Recommends measures to prevent, minimize, mitigate, or compensate for adverse impacts, and
iii) Recommends measures to improve environmental performance

2.3.1 Generation of healthcare waste

The project will generate healthcare waste through a number of clinical activities, namely male circumcisions, HIV testing, STI screening & treatment, ART drugs to prevent mother-to-child transmission of HIV, and through some blood testing under nutrition surveys. In most cases the incremental hazardous healthcare waste (e.g. sharps, infectious & anatomical waste) will be small, in the order of a few kg per month. The district hospitals to which mobile circumcision clinics will be attached stand to generate the highest incremental amount of hazardous healthcare waste, perhaps in the order of 100kg per month on average.

Healthcare waste management is essentially a workplace and public health and safety issue although a small fraction of medical waste may contain toxic heavy metals and radio-isotopes that can have a broader impact on the natural environment. It is therefore best addressed through

appropriate standards and procedures to be implemented as part of routine work practices in all healthcare facilities in which the project will work rather than via separate treatment of the materials and waste associated only with project activities. This HCWMP has been prepared to review and strengthen existing healthcare waste management systems in healthcare facilities within which the project will operate, in order to ensure that the incremental HCW generated by the project is appropriately managed and disposed of.

2.3.2 Office refurbishments and upgrades to on-site HCW disposal facilities

Minor refurbishment of existing office and health care facilities housing may also be financed under the project. This will involve interior refurbishment / re-equipping of existing offices, and upgrades or installment of small, low temperature incinerators and disposal pits on the grounds of existing health care facilities, with no new breaking of ground, and is therefore expected to have insignificant impacts. Applicable national standards[1] will be followed for these activities.

[1] I.e. building codes of practice from the Ministry of Transport & Public Infrastructure, and any appropriate city council development planning permits.

CHAPTER THREE TYPES, SOURCES AND VOLUMES OF HCW AND STATUS OF HCWM IN MALAWI

The Nutrition, HIV/AIDS project shall be implemented in the thirteen districts which are presently focus districts for the World Bank aid support. These districts are as follows; Nkhata Bay, Neno, Rumphi, Mzimba, Likoma, Nkhotakota, Ntchisi, Zomba, Chiradzulu, Blantyre, Mulanje, Thyolo and Mwanza.

3.1 Types, sources and volumes of HCW

This project will be characterized by a set of activities that will generate a fair amount of health care waste. These activities are clinical in nature that will stem from performing safe male circumcision aimed at reducing chances of contracting HIV. The project will not generate any radioactive, heavy metal or cytotoxic waste. The waste generated will be comprised of sharps, infectious waste (used swabs, dressings, etc), anatomical waste (removed foreskins), and pharmaceutical waste (unused drugs).

Tables 3.1 and 3.2 summarize the project activities that will generate HCW, and estimates the total amounts generated, and the total and average amounts generated by different classes of HCF. The nutrition component of the project may also generate some healthcare waste through blood samples taken as part of nutrition surveys, but the total will be very modest. The relative increment in the amount of waste generated by the Project is very modest. The highest amount of HCW generated that will be disposed of on-site (i.e. excluding pharmaceutical waste, which is usually shipped back to central supplier if in large quantities) is in the District Hospitals to which the mobile MC clinics will be attached. On average the additional infectious waste generated at these sites will be in the order of 100 kg/month. But in no other location is more than around 1 kg/day of waste generated which would likely be disposed of on-site, and typically the mean amounts are in the order of a couple of kg / month.

Table 3.1: Health Care Waste expected to be generated under the Nutrition and HIV / AIDS Project

Treatment	HCW involved	# units	Unit mass of waste (g) by category	Total mass of waste (kg)	# administering HC facilities	% treatments administered by HC facilities
Male circumcision (MC) kits	MC will produce sharps (disposable scalpel blades and needles, infectious waste (bloodied swabs and dressing),	640,000	Sharps: 5 Infectious: 50 Anatomic: 5 Pharmaceutical: 100	Sharps: 3,200 Infectious: 32,000 Anatomic: 3,200 Pharmaceutical: 64,000	28 district hospitals 3 mobile MC clinics 40 Birthing centers	District hospitals: 33% Mobile MC clinics: 45% Birthing Centers: 22%

	anatomic waste (foreskins) and potentially some pharmaceutical waste for left over					
HTC kits	Sharps and infectious waste	1,360,000	Sharps: 5 Infectious Waste: 50	Sharps: 6,800 Infectious Waste: 68,000	28 District hospitals 3 mobile MC clinics 30 ANC clinics	District Hospitals: 16% 3 mobile MC clinics: 21% 30 ANC clinics: 63%
STI treatment	Pharmaceutical waste Sharps	59,250	Pharmaceutical waste: 100 Sharps: 5	Pharmaceutical Waste: 5,925 Sharps: 297	28 Districts hospitals	District hospitals: 100%
PMTCT drugs	Pharmaceutical Waste	860,000	Pharmaceutical waste: 100	Pharmaceutical waste: 86,000	30 ANC clinics	30 ANC Clinics: 100%

Table 3.2 Summary of volumes of waste to be produced by HCF

Class of HCF	Waste metric	Category of HCW			
		Sharps	**Infectious**	**Anatomical**	**Pharmaceutical**
22 District Hospitals w/o linked MC clinics	Total amount produced by project (tons)	4.0	37.6	1.2	62.8
	Mean monthly production (kg/month)	3.0	28.5	0.9	47.6
6 District Hospitals w/ linked MC clinics	Total amount produced by project (tons)	4.0	38.9	1.8	20.0
	Mean monthly production (kg/month)	11.0	108.1	4.9	55.6

12 Birthing Centres not at District Hospitals	Total amount produced by project (tons)	0.2	2.1	0.2	4.2
	Mean monthly production (kg/month)	0.3	2.9	0.3	5.8
15 Ante-natal Centres not at District Hospitals	Total amount produced by project (tons)	2.1	21.4	0	43.0
	Mean monthly production (kg/month)	2.4	23.8	0	47.8

Note: ***Calculated on the basis that each district hospital will also have a birthing center, and on average 50% of DHs also have an ANC. 6 district hospitals will have one of the 3 mobile MC clinics attached to them at least some of the time***

3.2 Status of the healthcare waste management in Malawi

There are gaps in knowledge and implementation of sound HCWM practices. While medical staff (i e doctors, midwives, nurses) have decent knowledge and fairly good behavior in HCWM, many other staff (such as ward attendants, grounds workers, cleaners) have poor awareness of risks and proper procedures. Under the Health SWAP, a 2003-2008 HCWMP was developed and partially implemented. HCWM training materials were developed and distributed, and an extensive Infection Prevention training program also took place in the same timeframe, covering some overlapping topics. HCW collection equipment was also purchased and distributed to hospitals. However, the upgrading of on-site HCW disposal facilities and public awareness plan envisaged under the original HCWMP largely did not materialize, because of budget constraints. Although the HCWMP was prepared in part as a safeguards requirement for donor financing to the Health SWAP, donor funds were pooled and therefore not specifically earmarked for the activities contained within the HCWMP.

Recent visits to Malawian healthcare facilities (HCFs) suggest that, following government and NGO investment, many HCFs are implementing sound basic systems of HCWM, but there are also many gaps, and routine supply of consumables (e.g. PPE) is a problem once donor or NGO inputs end. Systematic assessments of HCWM practices in Malawi were carried out in 2002 and 2007, covering 80 and 69 HCFs respectively. These assessments show that there have been improvements since the original HCWMP was developed, but that more attention and efforts are needed to ensure uniform application of good practice:

a) 71% of HCFs segregate HCW. However, the degree of separation amongst HCW categories – sharps, infectious, anatomic, pharmaceutical, chemical, radioactive – varies, with sharps most often and radioactive waste least often separated. Only around 1 in 6

HCFs has a color coding system in place for HCW receptacles, so confusion may occur between waste categories.

b) 63% of HCFs use puncture-proof containers for sharps – a marked improvement over 2002, when safety boxes were generally not in use, and largely due to the infection prevention program that has been run in the country.
c) Reports or needle injuries have fallen – 18% of staff in 2007 reported a needle-stick injury to themselves or a colleague in comparison with 57% reporting as injury to themselves within the last year in 2002.
d) Most HCFs have no response procedures for needle stick injuries, which presents a considerable health risk in a country with a high prevalence of blood-borne infections. 92% of HCFs do not vaccinate personnel against hepatitis B and tetanus, although HCFs visited recently do offer post-exposure prophylaxis for HIV following a needle-stick injury, and are beginning to receive supplies of hepatitis vaccine.
e) Most HCF staff use protective equipment when handling HCW, but the type of equipment used is not standardized, and most commonly includes only boots.
f) The majority of HCFs don't have specific storage areas for HCW and almost half don't have specific rules for waste storage.
g) 92% of HCFs dispose of HCW on-site, and in many cases disposal areas are easily accessed by the public. Less than a quarter of HCFs have incinerators, and many of the incinerators that do exist are damaged or have insufficient capacity. Of those HCFs with off-site disposal, most aren't satisfied with the waste disposal services available and don't have control measures in place for transport of waste. Municipal authorities typically mix HCW with other waste, presenting a serious risk to landfill workers and scavengers, as well as to the local population through water pollution (as landfills are normally not sealed).

CHAPTER FOUR INSTITUTIONAL FRAMEWORK OF HEALTH CARE WASTE MANAGEMENT

4.1 Legislative and Regulatory Regimes in Healthcare Waste Management

Malawi has, over the past years, developed a number of policies and legislation to guide environmentally sustainable development in various sectors of the economy. The aim of adopting these policies and legislative framework is to promote and consolidate sustainable socio-economic development in the country through mainstreaming of environmental considerations in project planning and implementation.

This chapter outlines the policies, legislative and administrative framework relevant to guide implementation of activities of the proposed Nutrition and HIV/AIDS project.

4.1.1 The Republic of Malawi Constitution, 1995

The Constitution of the Republic of Malawi of 1995, Section 13 (d) sets out a broad framework for sustainable environmental management at various levels in Malawi. Among other issues it calls for prudent management of the environment and accords future generations their full rights to the environment. The Constitution also provides for a framework for the integration of environmental consideration into any development programs.

The implication of this is that Government and its cooperating partners have a responsibility of ensuring that development programs and projects are undertaken in an environmentally responsible manner in order to prevent degradation and pollution of the environment.

4.1.2 The National Health Policy

HCWM has not generally been prioritized within the national health policy. Back in 2002, draft Hospital Waste Management Guidelines existed, which laid out basic standards for HCW categorization, collection, storage, transport, treatment and disposal. This document appears to no longer be in circulation, but under the Health SWAP, MOH has developed and distributed a training manual, that serves in part as a simple set of guidelines. A 2003 HCWM Policy document laid out some general goals and responsibilities, and a draft HCWM Policy has been developed which further elaborates objectives, actions that should be taken by concerned actors and an extensive set of indicators. The Department of Environmental Health Services would like to finalize the policy, including a national consultation process, and to develop separate guidelines and training materials.

4.1.3 National Sanitation Policy

The draft HCWM Policy also elaborates on the healthcare facilities section of the 2008 National Sanitation Policy which lays out general objectives to ensure proper segregation, collection, handling, transport and treatment of HCW in line with WHO guidelines, as well as the provision of adequate equipment, training and secure disposal facilities.

4.1.4 The National Waste Management and Sanitation Regulations

The National Waste Management and Sanitation Regulations developed by the Environmental Affairs Department authorities to manage the different categories/types of wastes.

4.1.5 Environment Management Act, 1996 and Guidelines for Environmental Impact Assessment, 1997

The Environment Management Act makes provision for the protection and management of the environment and the conservation and sustainable utilization of natural resources. The Act is the principal piece of legislation on the protection and management of the environment in Malawi. Therefore, any written law inconsistent with the provisions of the Environment Management Act, 1996, is invalid to the extent of the inconsistency.

In order to integrate environmental considerations into activities of different projects, the Act provides for environmental planning and the need for environmental impact assessment for certain prescribed projects. Section 24 of the Act prescribes the projects that may not be implemented unless an environmental impact assessment is carried out. The section outlines the EIA process to be followed in Malawi and requires that all project developers in both the public and private sectors comply with the process. The act sets out the powers, functions and duties of the Director of Environmental Affairs (DEA) and Environmental Affairs Department (EAD) in implementing the EIA process. The Act does not provide for an environmental and social screening process for those projects whose location and extent are not yet known at the inception and planning stage. However the EIA Guidelines prescribe the types and sizes of projects, which should be subject to EIA.

The Environmental Impact Assessment Guidelines for Waste Management Projects requires that all waste management project that deal with hazardous waste, which would include all types of healthcare waste of special concern. However, there are no specific EIA guidelines for healthcare facilities or projects that include an element of HCWM.

4.1.6 Public Health Act, Cap 34:01

This Act is for the preservation of public health. Section 59 of the Act prohibits any person from causing nuisance on any land or premises owned or occupied by him. The Act under Part X requires developers to provide adequate sanitary and health facilities to avoid harmful effects of waste on public health. Further, section 82 prohibits persons from disposing of certain matters into public waters. The project will have to comply with the requirements of this Act by providing for suitable and effective waste disposal facilities in accordance with the anticipated volumes of waste.

4.1.7 Occupational Safety, Health and Welfare Act, 1997

The Act regulates work conditions with respect to safety, health, and welfare of workers especially during the operation of the project activities. The duty of ensuring safety, health, and welfare of workers is on the developer (employer). However, every employee is required to take reasonable care for his/her own safety and that of other workers.

The Act also places a duty of care on contractors throughout the project and similarly, the workers have a duty to take reasonable care for their own safety and health.

4.1.8 Water Resources Act of 1969, and the National Water Policy, 2004

Of relevance to the project is Section 16 of the Act which states that it is an offence for any person to interfere with, alter the flow of, or pollute, or foul any public water. This means that the proposed project must take this into account when managing waste from the health services it will offer and from the office to be constructed.

The National Water Policy notes that MoH is responsible for "proper management and disposal or clinical and hospital wastes to avoid pollution of the environment".

4.2 Administrative Framework

The Environment Management Act and the EIA Guidelines provide for the administrative framework of the EIA process. The EIA process is managed by the Director of Environmental Affairs. The Director of Environmental Affairs works with other line Ministries/agencies and stakeholders.

Under section 26 of the Environment Management Act, a prescribed project cannot receive the required authorization to proceed from the relevant licensing authority unless the Director has issued a certificate that an EIA is not required or that he has approved the project on the basis of an EIA report. The Director is empowered under the Act to require changes to a project in order to reduce environmental impact and to reject a project, if, in his view, the project will cause significant and irreparable injury to the environment. A person not satisfied with a decision of the Director may appeal to the Environmental Appeals Tribunal.

The Director relies upon the advice of a Technical Committee on the Environment established under Section 16 of the Environment Management Act. Through this committee, member agencies are informed about projects being appraised, participate in reviews of project briefs, EIA ToRs and EIA reports, develop project approval terms and conditions, develop and monitor project auditing conditions, and recommends courses of action to the Director.

4.3 World Bank Safeguard Policies

The project has been categorized as B implying that the expected environmental impacts are largely site-specific, that few if any of the impacts are irreversible, and that mitigation measures can be designed relatively readily. The environmental assessment for a Category B project,

a) Examines the project's potential negative and positive environmental impacts,
b) Recommends measures to prevent, minimize, mitigate, or compensate for adverse impacts, and
c) Recommends measures to improve environmental performance

The Bank's ten safeguard policies are designed to help ensure that programs proposed for financing are environmentally and socially sustainable, and thus improve decision-making. The Bank's Operational Policies (OP) are meant to ensure that operations of the Bank do not lead to adverse impacts or cause any harm. The Safeguard Policies are lumped into Environment, Rural Development, Social Development and International Law. These operational policies include:

a) OP/BP 4.01: Environmental Assessment
b) OP/BP 4.04: Natural Habitats
c) OP 4.09: Pest Management
d) OP/BP 4.12: Involuntary Resettlement

e) OD 4.20: Indigenous Peoples
f) OPN 11.03: Cultural Property
g) OP 4.36: Forests
h) OP/BP 4.37: Safety of Dams
i) OP/BP 7.50: Projects on international Waters
j) OP/BP 7.50: Projects in Disputed Areas
k) BP 17.50: Disclosure

The proposed HIV/AIDS and Nutrition Project will trigger World Bank's safeguard policy OP 4.01 Environmental Assessment. A summary of the Bank's environmental and social safeguard policies is provided in Annex 2.

4.3.1 Environmental Assessment (Operational Policy 4.01)

The objective of OP 4.01 is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and mitigation of their likely environmental impacts. This policy is triggered if a project is likely to have potential adverse environmental risks and impacts in its area of influence. The proposed HIV/AIDS and Nutrition project is anticipated to have minor and localized environmental impacts coming mainly management of health care waste.

4.3.2 Gaps between World Bank Policies and National Legislation

Both the Malawi environmental legislation and the World Bank OP 4.01 on Environmental Assessment have provisions for preparation of environmental impact assessment for projects that are likely to cause adverse environmental impacts. Under Malawi legislation, projects are screened for environmental impacts once the location and design is known, and the need for an EIA assessed. Under Bank procedures, safeguard documents have to be prepared before project approval even if the location and design of construction activities are not yet known.

4.4 Roles and responsibilities

4.4.1 The Ministry of Natural Resources, Environment and Energy (MNREE)

The DEA has developed specific EIA guidelines on waste management projects, however, it does not have a program directly focused on HCWM, and there is little support to city assemblies and health facilities for this category of waste. Similarly, the National Sanitation and Waste Management Regulations are inadequate in covering the scope of healthcare waste management.

4.4.2 The Ministry of Health (MOH)

The MOH supervises health care facilities, which are the main producers of health care wastes. The Directorate of Preventive Health Services is responsible for sanitation issues, hygiene and environmental health (water sanitation, hygiene promotion, health and urban development, environmental health impact assessment, occupational hygiene, chemical safety, etc.). The Department of Environmental Health Services comprises agents specialized in environmental health, and includes a desk officer for HCWM. This Department is responsible for formulating HCWM policies, and supporting and overseeing their implementation.

Since the original HCWMP was produced, a HCWM Steering Committee has been convened, and held a number of meetings. This comprises the Directorates of Preventive Health Service, Clinical Services and Nursing within MOHP, the Medical Council, the Nurses Council, Development Partners including USAID & UNICEP, and NGOs including JHPIEGO & MSH.

There is no single department charged with staff training in the MOHP, training activities are carried out by the various departments. Limited specific training has been provided in HCWM, and some HCWM elements have been included in training on infection prevention, but in general HCWM is insufficiently integrated into general training for health staff. The Health Education Unit of the MOH is charged with disseminating information and increasing public awareness about health issues. This unit has qualified staff and appropriate materials for conceiving didactic elements for information and awareness. It helps the health facilities and the national and district health services to elaborate and diffuse health messages (posters, radio and TV messages, etc.). There are currently no specific activities carried out that relate to HCWM.

4.4.3 Health facilities

The health facilities are the principal producers of HCW, but HCW is generally considered as a second priority besides the huge medical challenges facing them. The 2007 assessment revealed that:

a) 85% of HCFs have staff with good-satisfactory awareness of HCWM. 65% of HCF staff received training in infection prevention.
b) 80% of HCFs have a designated person in charge for HCWM. This is a nurse in around 30% of cases, but can include a range of staff of different levels of seniority.
c) Around 40% of HCFs were able to show site-based HCW regulations. Just over a quarter of HCFs produced HCWM reports, but there is no standardized HCWM monitoring system.
d) 75% of HCFs said funds for HCWM were inadequate. Over 40% had no budget allocation for HCWM. Where sharps containers were missing, this was most often for budget reasons.

Although these statistics reflect a significant improvement since 2002, there are still considerable challenges, particularly in provision of financial resources for HCWM in health centers. Priority in recurrent budgets is given to purchase of medicines and medical supplies, as opposed to purchase of waste storage or disposal equipment. This is the reason why major constraints are encountered at all stages of the HCWM cycle, collectors are not motivated, equipment is hardly replaced and collection is irregular.

4.4.4 City/District Assemblies

The City and District Assemblies are responsible for the management of household littering, but legally, they have no mandate with respect to HCWM or other hazardous wastes. However, in practice, local landfills (or the public containers) for household wastes often receive the HCW from health facilities or domestic care-givers. In Lilongwe as well as in Blantyre, the City Assembly collects irregularly the containers of general wastes (mixed with health care wastes) from Central Hospital and Queen Elisabeth Hospital, respectively, and all these wastes are disposed of in the public landfills. The public landfills of Lilongwe and Blantyre have no specific

area reserved to receive the HCW, and there is no specific treatment of these wastes. This situation constitutes a serious threat for the public health, mainly for scavengers and children etc., who have very little knowledge on risks linked with the handling of HCW.

4.4.5 Private sector

In Malawi, there is no private company working in household waste collection or in HCW collection: those activities are generally done by City Assemblies. Efforts to promote the involvement of the private sector in HCW management would probably require:

a) Regulation of HCW disposal in municipal landfills to prevent HCFs taking the cheaper option of disposing of HCW as regular household waste;

b) Establishment of a permitting regime to establish the competence of private companies to responsibly handle HCW, and

c) Better monitoring of HCW volumes to provide a reliable market to potential service providers. Unless there are specific opportunities, such as existing industrial furnaces that could conveniently be used to dispose of medical waste, it is perhaps unrealistic to expect a private HCWM market to develop in advance of private sector involvement in waste management more generally.

4.4.6 NGOs and Community Based Organizations

Many NGOs are actively involved by environmental and health issues. Some of them are involved in HCWM (JHPIEGO- in training activities, “Medicins sans frontières”- incinerators construction). Generally, they are very active in public awareness and training programs about environment and health, mainly in activities related to the fight against HIV/AIDS. They have great experience in this field, and could be very useful during the implementation of a national HCWM action plan, particularly when it is necessary to involve the local population. Community Organizations are not well organized, but they have the advantage of residing in the locality and enjoying the trust of local residents.

CHAPTER FIVE: PLAN OF ACTION

The goal of the HCWMP for the Nutrition, HIV/AIDS Project is to ensure appropriate management of HCW generated by the Project in a way that leaves a lasting improvement in the HCWM system of Malawi. The HCWMP shall be implemented in the districts in which the project will be operating.

By drawing on the findings of the assessment documented above and further drawing on the existing National Waste Management and Sanitation Guidelines which are only referred to in this document and not to be rewritten, this goal shall be achieved by strengthening the national policy framework for HCWM; ensuring that all project HCFs have adequate equipment and facilities for sound HCWM and ensuring that all project HCFs have adequate planning and training for sound HCWM. This section contains specific information on specific guidelines for waste management; capacity building; monitoring systems for healthcare waste management performance and an envisioned budget for supporting all the identified activities under this project.

The Plan of Action contains steps for systematic strengthening of HCWM systems from the national to site-level, as appropriate for the HCW issues engendered by the project. The primary audience for the document is therefore the project implementation team, rather than front-line health care workers. Nevertheless, the first section of the Plan details specific minimum standards which must be followed by all health care facilities supported by the project. The minimum standards are based on the existing guidelines in the Ministry of Health HCWM training manual, appropriate to the categories of waste which will be involved in the project, but have been added to in places to make them consistent with WHO and World Bank guidance. These are expected to guide and be replaced by the development of national guidelines and individual health care facility HCWMPs early in the project.

5.1 Guidelines/Procedures for Health Care Waste Management

The following provides specific minimum procedures and guidelines which shall be followed by all staff involved in the health care waste management at each health facility taking part in this project, pending completion of definitive national guidelines and policy:

5.1.1 Separation of Waste at Source

5.1.1.1 Project staff that is handling health care wastes shall do colour coding of containers/bags for storing waste materials according to the categories of healthcare wastes

5.1.1.2 Health care wastes must be separated and categorized as follows;

a) Infectious wastes, further sub-divided into:
   (i) Anatomical waste;
   (ii) Sharps; and
   (iii) Other infectious waste, e.g. swabs, used dressing materials
b) Pharmaceutical/chemical wastes

c) General wastes (packaging materials, card boxes

5.1.1.3 Sharps (needles and blades) are part of hazardous/infectious wastes and must only be stored into impermeable containers colored or labeled yellow and marked sharps. Sharps must never be stored into bags.

5.1.1.4 All other hazardous/infectious wastes such as bloodied swabs and dressing and some left-overs of pharmaceutical wastes, other than sharps, shall be stored either into impermeable bags or impermeable containers coloured or labeled yellow.

5.1.1.5 Chemical wastes shall be stored into the impermeable containers and bags coloured or labeled brown.

5.1.1.6 Pharmaceutical wastes shall be stored into the impermeable containers and bags colored or labeled brown.

5.1.1.7 General wastes shall be stored into the containers/bags coloured or labeled black.

5.1.1.8 Staff must record and report the quantity of the waste generated according to waste category.

5.1.1.9 Anatomical wastes must be stored into the containers and bags coloured or labeled yellow. The anatomical wastes generated daily through mobile circumcision clinic must be collected daily.

5.1.1.10 Sharps may only be re-used if designed for re-use and suitably sterilized by chemical means or autoclaving. Disposable sharps are preferred and reuse of disposable sharps is strictly prohibited.

5.1.2 Storage

5.1.2.1 Staff shall use impermeable bags and hard standing containers for storage of healthcare wastes.

5.1.2.2 Storage and collection containers have a tight fitting lead.

5.1.2.3 Containers must have handles.

5.1.2.4 Container must be easy to clean.

5.1.2.5 Staff shall ensure use of easy-to-clean surfaces for storage and placement of containers and bags containing healthcare wastes.

5.1.2.6 Management and staff should ensure the availability and convenience of water supply in whatever form to ensure proper cleanliness and hygiene of storage surfaces and containers.

5.1.2.7 Storage areas, containers and bags should not be readily accessible to non-staff or animals.

5.1.2.8 Containers and bags with wastes must be stored in good lighting and ventilation areas/rooms.

5.1.2.9 Rooms and areas for storing containers and bags with health care wastes must be kept proofed against rodents, insects and birds.

5.1.2.10 Staff must ensure that maximum storage time of infectious wastes is 48hrs in cool season and 24hrs in hot season.

5.1.2.11 Maximum storage period for anatomical wastes is 24 hours before disposal while maximum storage period for chemical and pharmaceutical wastes is one month.

5.1.2.12 Categories of health care wastes must be kept separate during storage. This may be on the same site, but the area should be divided into separate alcoves, labeled with appropriate colour-coding, and with a physical barrier between them.

5.1.2.13 All storage sites should be enclosed, so that they are not accessible to the public or to livestock, and in an area that is not at risk of flooding.

5.1.2.14 Storage facilities should be covered and at distance (at least 10m and two doors) from kitchens, canteens, wards and any central air systems.

5.1.2.15 Storage sites should be placed on bunded concrete platforms, and near a source of water for ease of cleaning. All storage sites should be kept clean and in good order.

5.1.3 Transport

5.1.3.1 Management and staff working on the project must establish and/or adhere to routine program for collection of waste.

5.1.3.2 Wastes must ideally be collected and transported daily to the treatment and disposal sites.

5.1.3.3 Before transportation, staff must ensure that sealing of waste bags and containers has been done in accordance with labeled colours of the containers and bags.

5.1.3.4 On collection and transportation of filled in containers and bags, staff must ensure replacing them with empty bags and containers.

5.1.3.5 Special covered trolleys should be used in transporting the health care wastes.

5.1.4 Treatment and Disposal

5.1.4.1 Sharps and infectious waste must be incinerated followed by disposal of ashes within lined pits or burial.

5.1.4.2 Encapsulation and burial of sharps wastes is also a viable alternative.

5.1.4.3 Other forms of Infectious wastes must be incinerated followed by burial.

5.1.4.4 Anatomical wastes such as foreskins, generated through mobile clinic and centers, must be disposed of into the lined pits in accordance with the observance of appropriate cultural understandings and customs that may be existent in different tribal localities. Otherwise, these must be transported to a health facility for proper incineration.

5.1.4.5 Pharmaceutical wastes must be disposed of into the sealed pits and/or must be incinerated at high temperature. Large quantities of unused pharmaceuticals should be returned to suppliers if possible.

5.1.4.6 Chemical wastes must be incinerated at high temperature or must be disposed of into the sealed pits.

5.1.4.7 General wastes such as packaging materials, plastics, plastic bins must be buried with or without burning though burning is preferred to reduce volume.

5.1.4.8 All storage and treatment sites should be kept clean and in good order.

5.1.4.9 Hazardous healthcare wastes (i.e. anything other than general waste) must not be sent to municipal waste disposal sites.

5.1.5 Protection of Waste Handlers

5.1.5.1 All waste handlers and disposal workers must be issued and wear personal protection equipment (PPE) including gum boots, gloves, overall, mask googles, aprons, gowns and head wear.

5.1.5.2 Any worker handling sharps must wear heavy duty gloves.

5.1.5.3 Uniforms should be regularly cleaned and replaced as necessary.

5.1.5.4 Waste handlers must undergo periodic in-service training in waste handling coupled with adequate supervision by managers.

5.1.6 Emergency Procedures

5.1.6.1 Any spillage of waste must be immediately and completely cleaned up.

5.1.6.2 The affected area must be cleaned immediately.

5.1.6.3 If any organic, sharp or infectious waste is involved, the affected area must also be disinfected.

5.1.6.4 Any injuries/puncture injuries or cuts from potentially infected sharps should be immediately reported.

5.1.6.5 The area of the injury must be cleaned and dressed as appropriate. The subject should be monitored for infections.

5.1.6.6 All health workers and waste handlers should be offered hepatitis vaccinations.

5.1.7 Administrative and Managerial Structure for Health Care Waste Management

Building on the administrative and management structures that might already exist at district and health facility levels, the following structure shall enhance proper waste management at district and HCF levels;

5.1.7.1 At District Level, there shall be a Health Care Waste Management Committee

5.1.7.2 The district level Health Care Waste Management Committee shall ideally include the following membership;

a) Environmental Health Officer;
b) Environmental Inspector;
c) District Assembly Representative;
d) Infection Prevention and Control Co-ordinator;
e) Stores Supervisor;
f) Matron;
g) Nursing Officer;
h) Maintenance Supervisor;
i) Transport Officer;
j) Procurement Officer;
k) Member of a Hospital/Facility Advisory Committee;
l) Human Resource Officer;
m) Accounts Officer; and
n) At least two members of the subordinate class ie hospital attendants who handle waste to final disposal and incineration.

5.1.7.3 At HCF Level there shall also be a Health Care Waste Management Committee comprising ideally the following membership, while taking cognizance of the inadequate levels of personnel in the public health sector:

a) Infection Prevention and Control Co-ordinator;
b) Matron;

c) Nursing Officer;
d) Maintenance Supervisor;
e) Transport Officer/Office superintendent;
f) Procurement Officer;
g) Human Resource Officer;
h) Accounts Officer;
i) Health Surveillance Assistant; and
j) At least two members of the subordinate class ie hospital attendants who handle waste to final disposal and incineration.

5.2 Strengthening of national policy framework

5.2.1 Finalization of the draft National HCWM Policy

This is envisaged to be done through a stakeholders' consultative process. In the finalization of the policy, consideration shall be given to including a number of more specific provisions in the final policy document, i.e.:

a) Allowing city councils (and potentially other service providers) to charge additional fees for verifiably appropriate disposal of HCW;

b) Elaborating specific requirements for HCFs, such as a legal requirement to adhere to National Guidelines, providing funding according to a minimal index, establishing individual HCF HCWMPs, reporting against a minimal set of standardized indicators;

c) Incorporation of HCWM components into routine healthcare worker training programs; and

d) Establish an objective to enshrine National Guidelines and practices into a set of legally-binding regulations following a suitable pilot and adoption phase.

5.2.2 Develop a Comprehensive Set of National HCWM Guidelines and HCWMPs for each Project HCF

National Guidelines will be developed and adopted, taking the current material in the HCWM training manual as a starting point, in accordance with the minimum standards laid out in section 5.1 above, and with reference to internationally established norms. The following shall specifically be included in the National Guidelines:

a) Standard system of HCW categorization and colour-coding;

b) For each HCW category, specific requirements for storage, collection, transportation, treatment & disposal (including requirements for due diligence to establish the suitability of off-site disposal locations);

c) Standard minimum template for individual HCF HCWMPs. This format shall be linked to the HCWM standards in the Guidelines – i.e. the measures put in place by each HCF must be in compliance with the Guidelines. Annex 3 contains a preliminary draft format for a simple HCF HCWMP; and

d) Standard minimum HCWM reporting format and procedure for HCFs and local authorities (preferably to be incorporated within routine reporting and assessment procedures, and to include some form of public disclosure).

5.3 Capacity building

Capacity building in form of training of cadres of personnel involved in health care waste management and the provision of equipment under the Nutrition and HIV/AIDS project in terms of the identified project activities is of paramount importance.

5.3.1 Training

5.3.1.1 **Develop HCWM training materials** linked to the National Guidelines, tailored to needs of different users – e.g. clinical staff, waste handlers, hospital administrators (see below for more details) – and containing a more distinctive visual format, and more didactic content (e.g. quizzes, mnemonics) than the current 2008 manual. Design, print and distribute posters for HCF, containing prominent reminders to healthcare staff of good practices and warnings to members of the public of the risks from healthcare waste.

5.3.1.2 **Provide training to HCMW Officers in each Project HCF** via a training-of-trainers approach, as each designated HCWM Officer will be responsible for providing internal training and supervision within their HCF. District health staff will be trained to train and supervise HCWM Officers in each HCF, and in addition, the best-performing HCF staff should be selected to provide peer support within their local area, and may (depending on performance) be able to provide additional trainings independently.

5.3.1.3 **Individual HCF HCWMPs would be developed by designated HCWM Officers largely as a key part of the training event** that they will attend, and with subsequent follow-up to ensure quality control of the final plans agreed with the HCF management. The HCF HCWM planning exercise will also involve the establishment of a baseline for existing HCWM facilities, equipment and performance indicators for each of the Project HCFs. In the case of mobile MC clinics, it is assumed that medical waste will normally be returned to the District Hospital out of which the clinic is based, but if the clinics are working at field

locations with suitable facilities, such as health centers, then they may choose to dispose of waste directly at those sites. This will only be permitted if the mobile clinic staff are qualified to judge the suitability of the local facilities, complete disposal of waste before leaving the site, and procedures for such as laid out in a HCWMP for the clinic.

5.3.2 Content of training materials

Training shall be for the following cadres covering specifically identified needs as follows;

5.3.2.1 HCF staff

5.3.2.1.1 Administrative staff

a) Information on the risks;
b) Advice about health and security;
c) Basic knowledge about procedures of HCWM waste collection, storage, transportation, treatment and final disposal including the management of risks;
d) The use of protection and security equipment;
e) Health care waste management guidelines; and
f) Financial resources to be allocated to HCWM.

5.3.2.1.2 Health Service Providers

This cadre of personnel includes doctors/clinicians, nurses, midwives, etc.

a) Information on the risks; advice about health and security;
b) Basic knowledge about procedures of HCWM waste collection, storage, transportation, treatment and final disposal including the management of risks;
c) The use of protection and security equipment (protective clothes);
d) Strategies to control and ensure that used disposable equipment/materials are placed in appropriate disposal and collection facilities and to ensure that all patients are safe from injury or hazards resulting from HCW;
e) HCW segregation at source;
f) How to orient the staff on the guidelines for waste management; and
g) Good practices on HCWM.

5.3.2.1.4 Cleaners, ward attendants, grounds attendants, other personnel in touch with wastes

a) Information on the risks; advice about health and security;
b) Basic knowledge about procedures of HCWM waste collection, storage, transportation, treatment and final disposal including the management of risks;
c) The collection and transportation of HCW containers;
d) The use of protection and security equipment (protective clothes);
e) Good practices on HCWM;
f) Disposal techniques of health care wastes;
g) Types/categories of health care wastes; and
h) Proper handling of special health care wastes.

5.4 Equipping and upgrading project HCFs

a) In order to allow compliance with the above set guidelines, **provision of additional equipment** to support HCWM at health care project facilities is critical. Such equipment include collection and storage materials for proper storage and timely collection and disposal. The estimated budget for the provision of additional equipment appears in annex 4C.

b) The **upgrading of HCW disposal sites** is critically important. This shall include repairs or upgrades to existing facilities in form of such activities as repairing damaged incinerators and constructing proper platforms or enclosures, or installment of new facilities such as modern incinerators (which must be done in compliance with all relevant national building guidelines). Modern incinerators could be considered for installation not at all facilities but at strategic facilities/sites while the other HCFs shall have simple incinerators. In the event that the volume of wastes generated at facilities with simple incinerators, such wastes shall be transported to central modern incinerators. The estimated budget total appears in annex 4C**.**

5.5 Public and Private Sector Involvement in HCWM

Given that there are currently no private sector service providers working in the waste management sector in Malawi, development of comprehensive private sector services for specialized HCWM is considered to be unrealistic during the timeframe of the project. However, there may be scope for some inclusion of local private sector involvement in the following areas that shall remain to be explored with local companies at the start of the project:

5.5.1 Local sourcing of HCWM equipment, particularly containers, such as sharps containers that it may be possible for local producers to manufacture from cardboard or recycled plastic containers.

5.5.2 Use of local incinerators. HCFs that do not have suitable incinerators on site should not send HCW to city council tips in the absence of proper facilities for its disposal. In most cases, there will therefore be a choice between investing in new or upgraded incinerators on-site, or sending HCW to existing off-site incinerators that can deal with it appropriately. To some extent this may be managed through establishment of an internal market whereby smaller HCFs can send HCW to larger HCFs with suitable facilities and capacity. However, there may potentially be incinerators located in nearby industrial facilities that could also handle disposal of HCW.

5.6 Institutional framework

This section describes responsibilities of different stakeholders. The implementation framework is summarized in annex 5.

5.6.1 At the central level:

The MOH is responsible for national health policy and ensures the guardianship of the health facilities. The Department of Environmental Health Services has the lead technical role for developing and overseeing HCWM systems, with coordination and quality control being providing by the HCWM Steering Committee. DEH will therefore be responsible for National Guidelines and training materials, under the oversight of the Steering Committee. It will also coordinate implementation of activities on the ground, providing supervision and support to the project HCFs to implement HCWM activities. Specifically, DEH will:

a) Provide training of trainers to district health staff (including District Environmental Health Officers), and oversee the roll-out of that training to HCF staff, including development of HCWM baselines and plans for each HCF.
b) Oversee implementation and performance monitoring by district health staff, and collate district information into overall progress reports on HCWM activities.

The Procurement Team will manage procurement of facilities upgrades and equipment for the HCMWP based on the needs of individual HCFs as determined by DEH through the baseline, HCF HCWM planning and monitoring exercises.

5.6.2 At the district level:

District health staff (including District Environmental Health Officers), will be responsible for providing training, technical support, monitoring and oversight of HCFs, including ensuring that HCF baselines and HCWMPs are produced in a timely and appropriate manner.

5.6.3 At the health facility level:

The manager of each health facility shall be ultimately responsible for HCWM in his/her establishment. S/he must ensure that a HCWM plan is prepared and implemented. S/he must designate the staff charged with HCW segregation, collection, transportation and treatment.

5.7 M&E systems to monitor project healthcare waste management performance

To ensure consistency in up-keeping the safety standards for health care waste management at each HCF or centre involved in this project, the minimum procedures, guidelines and standards contained herein shall be uniform to and followed by all HCFs and centers while such centers shall have HCF specific plans. The following performance indicators will be used at the HCF level by HCF staff and district health staff to monitor the performance of a uniform HCWMP. The DEH shall compile brief 6-monthly progress reports based on these indicators. Standard formats for reporting shall be used. A targeted evaluation exercise shall be carried out shortly before the Project Mid-Term Review. Table 5.1 below summarizes the performance indicators and the personnel involved in the HCWM. The estimated budget for the M&E systems appears in the annex 4D.

Table 5.1: Performance indicators, use, personnel responsible, methodology and frequency

Performance indicators	Use	Monitoring responsibility	Methodology	Frequency
Amounts of HCW by category	Verify correct segregation and adequacy of supplies, disposal capacity, etc.	HCF staff	Weigh all waste collected for each category, or if impractical, count the number of containers and use a standard approximation of container weight	Continuous
Accidents & injuries	Determine adequacy of response and need for increased training, protection, etc.		Accident log, with standardized descriptions	
Staff awareness of HCF HCWMP	Assess need for refresher training	District health staff	Use semi-structured questions, and assess on a 5-point scale: fully – not-at-all aware	6-monthly, unscheduled inspections
Correct HCW segregation & handling	Assess need for additional training, or disciplinary action in the case of repeat or willful failures; identify systematic constraints to implementation.		Follow a standard assessment protocol (i.e. checklists, scoresheets) of compliance with individual HCF HCWMP; grade performance in each area as fully, mostly, partially, slightly or not-at-all compliant; detail failings	
General cleanliness				
Maintenance of HCWM facilities				
Correct HCW disposal				
Adequate materials & inventory				
Correct HCWMP monitoring				

6.0 LIST OF REFERENCE AND SOURCE MATERIALS

1. Government of Malawi, Ministry of Health (2010). Draft Health Care Waste Management Policy

2. Government of Malawi (Ministry of Health). 2008. Draft Health Care Waste Training Manual for Qualified Health Workers

3. Government of Malawi (1996). Environment Management Act

4. Government of Malawi (1997). Guidelines for Environmental Impact Assessment

5. Government of Malawi (1948). Public Health Act (Cap 34:01)

6. Government of Malawi (1997). Occupational Safety, Health and Welfare Act

7. Government of Malawi (1969). Water Resources Act

8. Government of Malawi (2004). National Water Policy, 2004

9. IFC – World Bank Group (2007). Environmental Health and Safety Guidelines: Health care facilities

10. Medical Council of Malawi Database for Public and Private Health Care Facilities, Accessed 19 December, 2011

11. WHO (2004). Policy Paper: Safe Health Care Waste Management.

12. WHO (2001). Decision Making Guide for Managing Health Care Waste from Primary Health Care Centres.

13. WHO (1999). Safe Management of Wastes from Health-care Activities.

14. World Bank (2000). Health care Waste Management Guidance Note.

7.0 LIST OF ANNEXES

1. **Consultation on the HCWMP**
2. **Summary of World Bank environmental and social safeguard policies**
3. **Draft format for individual HCF HCWMPs**
4. **HCWMP budget**
5. **Summary of the implementation framework**

ANNEX 1: CONSULTATION ON THE HCWMP

Stakeholder Consultation Process
The document was discussed during a stakeholders' consultation workshop, which took place at Pacific Hotel in Lilongwe on 16 December 2011. During the workshop, the consultant presented a summary of the draft Health Care Waste Management Plan. After the presentation, the participants discussed the document extensively and finally accepted and approved it with some suggestions that the consultant incorporated in the disclosure draft as appropriate.

The consultation workshop was attended by a number of stakeholders who came from different institutions, which included UNAIDS, World Bank, Medical Council of Malawi, Department of Water, Department of Nutrition and HIV/AIDS, Lilongwe City Council, National Commission for Science and Technology, Environmental Affairs Department, Ministry of Health, National AIDS Commission, JHPIEGO and NMCM. Details of the participants are provided in the table below.

The draft HCWMP was then publically disclosed through local news papers and the National Aids Commission (NAC) website from 20 – 27 January 2012. No further substantive comments were received.

Issues raised by stakeholders
Stakeholders raised a number of issues during the consultation workshop. The consultant was requested where applicable to address the issues by including them in the draft Health Care Waste Management Plan

Healthcare Waste Management Plan
Under the HCWMP, the consultant was advised to address the following:

a) Nutrition Component of the project will be implemented by the Department of Nutrition and HIV/AIDS focusing mainly on the Southern Region of Malawi and the HIV/AIDS Component will be implemented by the National AIDS Commission;
b) Nutrition component of the project will be implemented in 13 districts of Malawi which shall include Nkhatabay, Neno, Rumphi, Mzimba, Likoma, Nkhotakota, Ntchisi, Zomba, Chiradzulu, Blantyre, Mulanje, Thyolo and Mwanza whereas the HIV/AIDS component of the project will be implemented in all the 28 Districts of Malawi;
c) The custodian of HCWMP will be the Ministry of Health and not the Department of Nutrition and HIV/AIDS;
d) The consultant should provide details on the statistics for the private sector healthcare facilities;
e) Wherever there was District Assembly, we should replace that with District Council;
f) The document should include all the different categories of the waste to be generated by the project activities e.g. disposables;

g) The plan intends to designate central incinerators, where the nearby small health facilities will dispose of their wastes. This will required for proper training on handling wastes;
h) Members felt that composition of the Healthcare Waste Management Committee at district level should include the Environmental District Officers and the Environmental Health Officer. Members further felt that the committees should be replicated at health centre level.
i) The Department of Public Health should be replaced by the Department of Preventive Health Services;
j) The consultant was requested to refer to the Draft Care Waste Management Policy that the Ministry of Health had prepared earlier on;
k) The consultant was asked advised that the Nutrition project will only be implemented in 13 districts of Malawi and not in all the 28 districts as indicated in the draft reports.

List of stakeholders invited to the consultation meeting

1. The Director of Nursing Services MOH, Attention: Mrs. Grace Bamusi
2. The Director of Clinical Services, MOH Attention: Dr. Titha Dzowera
3. The Registrar, Medical Council Of Malawi Attention: Mr. Kondwani Mkandawire
4. The Resident Representative, WHO attention: Mr. H. Kubwalo
5. The Country Representative, JHPIEGO attention: Mr. E. S. Gumbo
6. The Executive Director, CHAM attention: Mr. Patrick Nayupe
7. The Secretary for Irrigation and Water Development Attention: Mr. Mpasa/H. Muhezuwa
8. The Secretary for Irrigation and Water Development Attention: Mr. H. Muhezuwa
9. The Chief Executive, Lilongwe City Council Attention: Mr. V. P. V. Mulula
10. The Chief Executive, Lilongwe City Council Attention: Mr. Allan Kwanjana
11. The Director, Environmental Affairs Dept. Attention: Ms T. Mbale
12. The Director, Environmental Affairs Dept. Attention: Mr. Chiumia
13. The Registrar, Nurses and Midwives Council of Malawi
14. The Director, Kamuzu Central Hospital. Attention: Mr. Mtotha
15. The District Health Officer, Lilongwe District Council. Attention: Mr. Noel Khunga
16. Ministry of Health, Attention: Mr. Humphreys Masuku
17. Ministry of Health, Attention: Mr. Noah Silungwe
18. Deputy Director of Preventive Health Services (HES) Attention: Mrs. N. J. Kandoole
19. Deputy Director of Preventive Health Services (HES) Attention: Mr. H. Kankwamba.
20. The UN Country Coordinator UNAIDS. Att: Dr Patrick Brenny
21. The UN Country Coordinator UNAIDS. Att: Ms Pepukai Chikukwa
22. The Resident Representative, UNICEF, Att: Mr Tauzi
23. CDC, Att: Beth Barr
24. PEPFAR, Att: Fiona Edwards
25. DNHA, Att: Mr. Felix Pensulo
26. DNHA, Att: Mr. Hansford Yusufu
27. DNHA, Att: Mr. Sylvester Gawamadzi
28. HIV Unit, Att: Dr Chimbwandira

29. HIV Unit, Att: Dr Zengani Chirwa
30. HIV Unit, Att: Mr. Amon Nkhata
31. HIV Unit, Att: Mr. M Eliya

From National AIDS Commission secretariat

1. Davie Kalomba
2. Christopher Teleka
3. Mwai Makoka
4. Chimwemwe Mablekisi
5. Wellington Kafakalawa
6. Maria Mukwala

LIST OF PARTICIPANTS WHO ATTENDED THE CONSULTATION, PACIFIC HOTEL

	NAME	DESIGNATION	ADDRESS	TEL NO.	CELL NO.	FAX NO.	EMAIL ADDRESS
1.	Patrick Brenny	Country Coordinator	UNAIDS, Box 30135 Lilongwe 3	01772603	0999960130	01773992	brennyp@unaids.org
2.	Ali Subandoro	M&E Consultant	World Bank, Lilongwe		0994549641		asubandoro@worldbank.org
3.	K.M.Mkandawire	Assistant Registrar	Medical Council of Malawi Box 30787, Lilongwe 3		0999202924		Mkandawirekondwa30@yahoo.com
4.	Mike Chimmadzi	Community Water Supply Officer	Department of Water P/Bag 390 Lilongwe 3		0888616287		chilimmadzim@yahoo.com
5.	N. H. Silungwe	Principal Environmental Health Officer	Ministry of Health Box 30377, Lilongwe 3		0888388248		noahsilungwe@yahoo.com
6.	Sylvester Gawamadzi	Economist	DNHA, P/Bag B401, Lilongwe 3		0888305551		slygawa@yahoo.com
7.	Vitto Mulula	Director of Health and Social Services	Lilongwe City Council Box 30396, Lilongwe 3		0884540929		vmulula@yahoo.com
8.	Mike Kachedwa	Chief Research Officer	NCST, P/Bag B303, Lilongwe 3		0999360516		kachedwa@yahoo.com
9.	Clement Tikiwa	Environmental Officer	Environmental Affairs Dpt P/Bag 394, Lilongwe 3	01773177	0993715971		Clement.tikiwa@gmail.com
10	Eneud Gumbo	Programme Officer	JHPIEGO, P.O. Box 1091 Lilongwe		08888205545		egumbo@jhpiego.net
11	Hansford Yusuf	Economist	DNHA, P/BAG 401, Lilongwe 3		0999428996		Hy_usuf@yahoo.com
12	Thoko Kazembe	Consultant	World Bank, Box 30557 Lilongwe		0991797289		tkazembe@worldbank.org
13	Davie Kalomba	Head of Planning, Monitoring, Evaluation	National AIDS Commission Box 30622, Lilongwe 3	01770022	08859434	01776249	kalombad@aidsmalawi.org.mw

	NAME	DESIGNATION	ADDRESS	TEL NO.	CELL NO.	FAX NO.	EMAIL ADDRESS
		and Research					
14	Christopher Teleka	Ag Head of BCI	National AIDS Commission Box 30622, Lilongwe 3	01770022	09958725	01776249	telekac@aidsmalawi.org.mw
15	Steve Chipala	Procurement Officer	National AIDS Commission Box 30622, Lilongwe 3	01770022	08843916	01776249	chipalas@aidsmalawi.org.mw
16	Benson Botha	Grants Office	National AIDS Commission Box 30622, Lilongwe 3	01770022	0888894191	01776249	bothab@aidsmalawi.org.mw
17	Mwai Makoka	Policy Officer	National AIDS Commission Box 30622, Lilongwe 3	01770022	0888450257	01776249	makokam@aidsmalawi.org.mw
18	Veronica Maluwa	Director of Monitoring, Evaluation and Investigation	NMCM, Box 30361, Lilongwe		0888791071		Veronica.maluwa@nmcm.org.mw
19	Victor Joansi	Health Education Officer	Ministry of Health, Health Education Unit, P.O. Box 30377 Lilongwe	01725899	0999179842		victorjonasi@rocketmail.com
20	Levi Lwanda	M&E Officer	National AIDS Commission Box 30622, Lilongwe 3		0888873267		lwandal@aidsmalawi.org.mw

ANNEX 2: SUMMARY OF WORLD BANK ENVIRONMENTAL AND SOCIAL SAFEGUARD POLICIES

OPERATING POLICY	OBJECTIVE	RELEVANCE TO HIV/AIDS AND NUTRITION PROJECT
OP 4.01 Environmental Assessment	The objective of this policy is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and of their likely environmental impacts. This policy is triggered if a project is likely to have potential (adverse) environmental risks and impacts in its area of influence.	In order to integrate environmental considerations into a project, a range of instruments are available as follows: Environmental Impact assessment (EIA), environmental audit (EA), hazard or risk assessment and Environmental Management Plan (EMP). The Borrower is responsible for carrying out the environmental assessment. Under the HIV/AIDS and Nutrition Project, the management of health care waste is likely to generate negative environmental impacts, necessitating this health care waste management plan. Potential impacts from minor office refurbishment and upgrading of existing on-site health care waste disposal facilities are also considered.
OP 4.36 Forests	This policy focuses on the management, conservation, and sustainable development of forest ecosystems and their associated resources. It applies to projects that may/may not have impacts on (a) health and quality of forests; (b) affect the rights and welfare of people and their level of dependence upon or interaction with forests and projects that aim to bring about changes in the management, protection, or utilization of natural forests or plantations, whether they are publicly, privately or communally owned. The Bank does not support the significant conversion or degradation of critical forest areas or related critical natural habitats.	This policy is triggered by activities and other Bank sponsored interventions, which have the potential to impact significantly upon forested areas. This policy will not be triggered by the proposed project.
OP 4.11	This policy aims at assisting in the	This policy is triggered by projects

OPERATING POLICY	OBJECTIVE	RELEVANCE TO HIV/AIDS AND NUTRITION PROJECT
Cultural Property	preservation of cultural property (sites that have archaeological (prehistoric), paleontological, historical, religious, and unique natural values – this includes remains left by previous human inhabitants (such as shrines, and battlegrounds) and unique environmental features such as canyons and waterfalls), as well as in the protection and enhancement of cultural properties encountered in Bank-financed projects.	which pose a risk of damaging cultural property. The policy is not triggered as the project involves no significant civil works.
OP 4.12 Involuntary Resettlement	The objective of this policy is to avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs. Furthermore, it intends to assist displaced persons in improving their former living standards; it encourages community participation in planning and implementing resettlement; and to provide assistance to affected people, regardless of the legality of title of land.	This policy is triggered not only if physical relocation occurs, but also by any loss of land resulting in: relocation or loss of shelter; loss of assets or access to assets; loss of income sources or means of livelihood, whether or not the affected people must move to another location. This policy will not be triggered by the proposed project.
OP 4.37 Safety of Dams	This policy focuses on new and existing dams. In the case of new dams, the policy aims at ensuring that experienced and competent professionals design and supervise construction; the Borrower adopts and implements dam safety measures for the dam and associated works. In the case of existing dams, the policy ensures that any dam upon which the performance of the project relies is identified, a dam safety assessment is carried out, and necessary additional dam safety measures and remedial work are implemented. The policy also recommends the preparation of a generic dam safety analysis for small dams.	This policy is triggered if the project involves the construction of a large dam (15 m or higher) or a high hazard dam; if a project is dependent on an existing dam, or a dam under construction. For small dams, generic dam safety measures designed by qualified engineers are usually adequate. This policy will not be triggered by the proposed project.
Operational Policy (OP)/Bank Procedure	Projects on International Waterways may affect the relations between the World Bank and its borrowers, and between riparian states. Therefore, the Bank	This policy will not be triggered by the proposed project.

OPERATING POLICY	OBJECTIVE	RELEVANCE TO HIV/AIDS AND NUTRITION PROJECT
(BP) 7.50: Projects on International Waterways	attaches great importance to the riparians making appropriate agreements or arrangements for the entire waterway, or parts thereof, and stands ready to assist in this regard. In the absence of such agreements or arrangements, the Bank normally urges the beneficiary state to offer to negotiate in good faith with the other riparians to reach appropriate agreements or arrangements. The Policy lays down detailed procedures for the notification requirement, including the role of the Bank in affecting the notification, period of reply and the procedures in case there is an objection by one of the riparians to the project.	
OP 4.04: Natural Habitats	This policy seeks to ensure that World Bank-supported infrastructure and other development projects take into account the conservation of biodiversity, as well as the numerous environmental services and products which natural habitats provide to human society. The policy strictly limits the circumstances under which any Bank-supported project can damage natural habitats (land and water areas where most of the native plant and animal species are still present). Specifically, the policy prohibits Bank support for projects which would lead to the significant loss or degradation of any Critical Natural Habitats, whose definition includes those natural habitats which are either: • legally protected, • officially proposed for protection, or • unprotected but of known high conservation value. In other (non-critical) natural habitats, Bank supported projects can cause significant loss or degradation only when	This policy will not be triggered by the proposed project.

OPERATING POLICY	OBJECTIVE	RELEVANCE TO HIV/AIDS AND NUTRITION PROJECT
	there are no feasible alternatives to achieve the project's substantial overall net benefits; and acceptable mitigation measures, such as compensatory protected areas, are included within the project.	
Operational Policy (OP)/Bank Procedure (BP) 7.60: Projects in Disputed Areas	Projects in disputed areas may affect the relations between the Bank and its borrowers, and between the claimants to the disputed area. Therefore, the Bank will only finance projects in disputed areas when either there is no objection from the other claimant to the disputed area, or when the special circumstances of the case support Bank financing, notwithstanding the objection. The policy details those special circumstances. In such cases, the project documents should include a statement emphasizing that by supporting the project, the Bank does not intend to make any judgment on the legal or other status of the territories concerned or to prejudice the final determination of the parties' claims.	This policy will not be triggered by the proposed project.
OP/BP 4.10: Indigenous Peoples	The World Bank policy on indigenous peoples, OP/BP 4.10, Indigenous Peoples**,** underscores the need for Borrowers and Bank staff to identify indigenous peoples, consult with them, ensure that they participate in, and benefit from Bank-funded operations in a culturally appropriate way - and that adverse impacts on them are avoided, or where not feasible, minimized or mitigated.	This policy will not be triggered by the proposed project.
Operational Policy 4.09: Pest Management	World Bank funded projects have to avoid using harmful pesticides. A preferred solution is to use Integrated Pest Management (IPM) techniques and encourage their use in the whole of the sectors concerned. If pesticides have to be used in crop protection or in the fight against vector-borne disease, the Bank-funded project	This policy will not be triggered by the proposed project.

OPERATING POLICY	OBJECTIVE	RELEVANCE TO HIV/AIDS AND NUTRITION PROJECT
	should include a Pest Management Plan (PMP), prepared by the borrower, either as a stand-alone document or as part of an Environmental Assessment.	

ANNEX 3: DRAFT FORMAT FOR INDIVIDUAL HCF HCWMP

Healthcare Waste Management Plan for _____

Approved _____/_____/_____.

To be next reviewed _____/_____/_____.

District Healthcare Waste Management Supervisor / resource person _____; telephone number _____.

Site officer in charge of Healthcare Waste Management _____.

Site Healthcare Waste Management Training Officer _____. All new staff must be oriented on the Healthcare Waste Management Plan within __ days of starting work.

ANNEX 3 A: Collection:

	Category	Receptacle type	Disposable or reuseable?	Receptacle locations	Collection schedule
General	Organic / Food				
	Dry waste				
Hazardous	Sharps				
	Infectious waste				
	Anatomical waste				
	Genotoxic waste				
	Heavy Metals				
	Radioactive waste				
	Pharmaceutical waste				
	Chemical waste				
	Pressurized containers				

ANNEX 3 B: Handling & storage

- handling & storage (, PPE, on-site transport equipment, maintenance, storage container, storage site, maintenance),

	Category	Minimum PPE	On-site transport equipment		Storage container	Storage site	
			Type	Maintenance		Description	Maintenance
General	Organic / Food						
	Dry waste						
Hazardous	Sharps						
	Infectious waste						
	Anatomical waste						
	Genotoxic waste						
	Heavy metals						
	Radioactive waste						
	Pharmaceutical waste						
	Chemical waste						
	Pressurized containers						

ANNEX 3 C: Disposal (schedule, method, site, maintenance)

	Category	Schedule	Disposal method	Disposal site	Disposal site maintenance
General	Organic / Food				
	Dry waste				
Hazardous	Sharps				
	Infectious waste				
	Anatomical waste				
	Genotoxic waste				
	Heavy metals				
	Radioactive waste				
	Pharmaceutical waste				
	Chemical waste				
	Pressurized containers				

ANNEX 3 D: Emergency procedures
All incidents involving the following will be reported to _____:

Specific procedures to be followed for different types of incidents are as follows:

	Category	Spillage	External exposure	Cut or exposure to open wound	Ingestion
General	Organic / Food				
	Dry waste				
Hazardous	Sharps				
	Infectious waste				
	Anatomical waste				
	Genotoxic waste				
	Heavy metals				
	Radioactive waste				
	Pharmaceutical waste				
	Chemical waste				
	Pressurized containers				

NB: These incidents are: cuts and needle stick injuries; internal exposure to any waste; external exposure to radioactive waste; or spillages involving any hazardous waste.

ANNEX 3 E: Healthcare facility HCWMP monitoring responsibilities:

Indicator	Person responsible	Monitoring schedule	Measurement equipment	Location of data records

ANNEX 3 F: Minimum inventory levels

Collection supplies		PPE		Transport & storage supplies		Other	
Item	Min stock	Item	Min stock	Item	Min stock	Item	Min stock

Annex 4: HCWMP Budget

Annex 4`A: Estimated Budget for strengthening national framework

Item	Units	Unit cost (USD)	Total (USD)
Regional consultant	15 weeks	2000	30000
National consultant	15 weeks	1000	15000
Consultation workshops	4 events	5500	22000
Printing & distribution – Policy	200 copies	11	2200
Printing & distribution – Guidelines	1000 copies	11	11000
TOTAL			**80200**

Annex 4 B: Estimated Budget for Training

Item	Units	Unit cost (USD)	Total (USD)
National consultant – design of materials & initial training of trainers	10 weeks	1100	11000
Training workshops for groups of districts	6 events	5500	33000
Printing & distribution – training materials	200 copies	11	2200
Printing & distribution – posters	500 copies	6	3000
TOTAL			**49200**

Annex 4C: Estimated Budget for the provision of HCWM equipment & facilities to Project HCFs

Item	Units	Unit cost (USD)	Total (USD)
Installation of higher capacity, modern incinerators in district hospitals	15	27500	412500
Installation or repair of low-cost (De Montfort) incinerators in health centres	15	1100	16500
Establishment / repair of appropriately engineered disposal pits for non-hazardous, hazardous (i.e. lined pits, and anatomical (i.e. placenta pits) waste	40	1100	44000
Upgrading of storage & disposal areas (e.g. fencing, concrete platforms)	40	1100	44000
PPE sets	200	44	8800
Sets of re-usable containers	300	33	9900
Sets of disposable colour-coded bags & containers	3000	11	33000
Waste transport carts	30	220	6600
TOTAL			**575300**

Annex 4D: Estimated budget for M&E System

Item	Units	Unit cost (USD)	Total (USD)
DEHP administrative costs	5 years	5500	27500
District health staff operational costs	28 districts x 5 years	1100	154000
Pre-MTR review – regional consultant	4 weeks	2750	11000
Pre-MTR review – national consultant	4 weeks	1100	4400
TOTAL			**196900**

ANNEX 5: SUMMARY OF THE IMPLEMETATION FRAMEWORK

Activity	Action	Responsibility	Start date	End date	Output indicator	Budget (USD)
1. Strengthen national policy framework	1.1. Finalize National Policy	DEHP	Effectiveness	+ 4 months	Policy issued	80,200
	1.2 Develop National Guidelines				Guidelines issued	
2. Training & awareness	2.1 Develop materials	DEHP	Effectiveness	+ 4 months	Materials distributed	49,200
	2.2 Provide training	DEHP with district staff	+ 4 months	+ 12 months	20 trainers trained 200 HCF staff trained	
3. HCF HCWMPs	3.1 Develop baseline & plan for each project HCF	District health staff + HCF staff	+ 4 months	+ 12 months	100 HCF HCWMPs issued	*In training budget*
4. Provision of equipment & facilities	4.1 Provide additional equipment	DEHP & PMU (procurement)	+ 6 months	+ 14 months	All project HCWMP have adequate equipment & facilities	575,300
	4.2 Upgrade facilities		+6 months	+18 months		
5. Private sector	5.1 Local sourcing of equipment	DEHP & PMU (procurement)	+ 6 months	ongoing	XX% equipment locally supplied	*In equipment & facilities budget*
	5.2 Use of local incinerators	District health staff with District Environment Officer & HCF staff	+ 4 months	ongoing	Opportunities to use locally available incinerator identified & acted on if appropriate	
6. Monitoring	6.1 HCW amounts & accidents	HCF staff	+ 4 months	ongoing	HCF registers	196,900
	6.2 HCF HCWMP compliance	District health staff			District monitoring reports	
	6.3 Overall performance assessment	DEPH with info from districts			Progress reports	
					TOTAL	**901,600**