Environmental Auditing Guide

Office of the Auditor General of Nepal

Auditor General
of Nepal

Babar Mahal
PO Box 13328
Kathmandu
NEPAL

Foreword

The rapid pace of urbanization, natural calamities etc, has necessitated government to a incorporate environmental matters in planning and policy making activities. The Government of Nepal also has put in place some measures protect environment and to mitigate the adverse impact thereon. These include passing legislatures, and setting up institutions to that effect. Measures and metrics have been developed to track the expenditures from the budget to environmental sector by implementing Climate Change Budget Code. Nepal is also a signatory to many international treaties relating to environment protection. It is obligatory on the part of Government of Nepal to fulfill its treaty commitments.

The Office of Auditor General of Nepal (OAGN), being a supreme audit institution of Nepal has been entrusted by the Constitution to conduct audit of the constitutional bodies and all government entities. Based on the mandate the OAGN has been conducting financial and performance audits. Previously, OAGN has conducted three full-fledged environmental audits in forest sector. As the issues related to environment are being more complex, the measures for its redressal have also become more technical and needs specialized skill and knowledge. With this in view, to provide a more concerted approach on environmental aspects to environmental auditors, this Environmental Auditing Guide has been prepared.

Efforts have been made to make the guide error free. However, OAGN will be grateful if the user could acknowledge any error or suggestion to Performance Audit Directorate or Planning, Research, Methodology and Human Resource Development Directorate of the OAGN.

I appreciate team of OAG Nepal and Norway who are involved to develop this guide in line with ISSAI. Similarly, I express my thanks to the Auditor General of Norway for sharing professional experience in making the guide meaningful.

(Sukudev Khatry)

Acting Auditor General

Telephone: 977-1-4262958 Fax: 977-1-4262798/4268309 E-mail: oagnep@ntc.net.np/infoag@most.gov.np Web: www.oagnep.gov.np

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Abbreviations and Acronyms

ASOSAI	: Guidance on conducting Environment Audit issued by Asian Organization of Supreme Audit Institutions
AG	: Auditor General
OAGN	: Office of Auditor General of Nepal
INTOSAI	: International Organization of Supreme Audit Institutions
SAI	: Supreme Audit Institutions
EIA	: Environmental Impact Assessment
WGEA	: Working Group on Environmental Auditing
MDG	: Millennium Development Goal
CO2	: Carbon Dioxide
GHG	: Green House Gas
NPC	: National Planning Commission
CBS	: Central Bureau of Statistics
UNDP	: United Nations Development Programme
FMU	: Forest Management Units
WS	: Working Schemes
PAC	: Public Accounts Committee
NGO	: Non Governmental Organization
EMS	: Environmental Management System
IPAC	: International Auditing Practices Committee
ISAB	: International Accounting Standards Board
PSAB	: Public Sector Accounting Board
ICAN	: Institute of Chartered Accountancy of Nepal
MOSTE	: Ministry of Science, Technology and Environment
DHM	: Department of Hydrology and Meteorology
WMO	: World Meteorological Organization

PoP	: Persistent Organic Pollutants
INGO	: International Non Governmental Organization
AEPC	: Alternative Energy Promotion Centre
NAST	: Nepal Academy of Science and Technology
MCCICC	: Multi-sectoral Climate Change Initiatives Coordination Committee
NAPA	: Nation Adaptation Programme of Action
MOFSC	: Ministry of Forest and Soil Conservation
DoF	: Department of Forests
DFRS	: Department of Forest Research and Survey
DSCWM	: Department of Soil Conservation and Watershed Management
DPR	: Department of Plant Resources
MOAD	: Ministry of Agriculture Development
GoN	: Government of Nepal
DoA	: Department of Agriculture
NARC	: Nepal Agricultural Research Council
CAAN	: Civil Aviation Authority of Nepal
RWSSFDB	: Rural Water Supply and Sanitation Fund Development Board
SWMA	: Solid Waste Management Act
SWM	: Solid Waste Management
MoUD	: Ministry of Urban Development
KUKL	: Kathmandu Upatyaka Khanepani Limited
TDF	: Town Development Fund
UN	: United Nation
UNEP	: United Nations Environment Programme
FAO	: Food and Agriculture Organization
WMO	: World Meteorological Organization
UNIDO	: United Nations Industrial Development Organization
UNISDR	: United Nations Office for Disaster Reduction

CSD	: Commission on Sustainable Development
UNCED	: United Nations Conference on Environment and Development
WWF	: World Wide Fund
IUCN	: International Union for Conservation of Nature
IEE	: Initial Environmental Examination
EIA	: Environmental Impact Assessment
VDC	: Village Development Committee
DDC	: District Development Committee
KMC	: Kathmandu Metropolitan City
SWMTSC	: Solid Waste Management Technical Support Center
GMO	: Genetically Modified Organisms
FUG	: Forest User Group
CFM	: Collaborative Forest Management
CITES	: Convention on International Trade in Endangered Species of Wild Fauna and Flora
NDRA	: Natural Calamity (Relief) Act
UN ISDR	: United Nations Office for Disaster Reduction
ICIMOD	: International Centre for Integrated Mountain Development

1. Chapter-1: Introduction

1.1. Understanding Environment and Environment Audit

Environment[1] means the interaction and inter-relationship among the components of natural, cultural and social systems, economic and human activities and their components.

Guidance on conducting Environment Audit issued by Asian Organization of Supreme Audit Institutions (ASOSAI) has defined Environment as a complex of physical, chemical and biotic factors that act upon an organism or an ecological community and ultimately determine its form and survival. It is the combination of different external physical conditions that affect and influence the growth, development and survival of organisms. Such external conditions include biotic components like plants, animal and other living beings and abiotic components like soil, weather, water, sunlight etc.

1.2. Mandate for Environmental Audit

The Constitution of Nepal has entrusted the Auditor General with the responsibility to conduct audit of the constitutional bodies and all government entities. The Audit Act, 1991 (2048) have empowered to conduct the audit of government financial transaction with the perspective of compliance, propriety, economy, efficiency and effectiveness. This is a comprehensive audit mandate to the AG. So mandate of OAGN also covers auditing with an environmental perspective.

Financial Procedures Rules 2064 (2007), also specifies that in preparing the budget for a development project, such a project has to be approved by the Government of Nepal, also taking into account of the returns from it, on the basis of the feasibility study and financial, technical, environmental and administrative propriety of the proposed project. This provision of rules also authorizes OAGN to conduct audit of projects with environmental focus.

1.3. Need and purpose of the Environment Audit Guide

Environmental auditing is not significantly different from the audits being conducted by OAGN such as financial audit, performance audit and compliance audit. Presently, based on the legal mandate to AG, the OAGN is carrying out the financial/compliance and performance audit of government entities every year.

At present the audit domain of OAGN does not cover environmental audit however, a few issues such as undertaking the projects without conducting EIAs, poor sanitation, lack of soil conservation, construction of roads by local authorities without considering the environmental aspects etc., are being identified in course of financial audit. Government has initiated various environmental initiatives and allocating budget for implementation of such programs also. Most of the programs are being undertaken under the Ministry of Science, Technology and Environment, Ministry of Forest and Soil Conservation and other government sector entities. Similarly, revenue/tax exemption such as, expenditure incurred in environment protection is allowed for exemption by tax laws. Under the

[1]Environment Protection Act, 1997

various laws there are many provisions related to protection of environment which require coordination for collaborative efforts for implementation of such provision. In last few years, AG also conducted Environment Audit as part of the performance audit. If we see the OAGN Annual report various environmental issues such as, water pollution issues, issues of biodiversity etc., have been reported through its financial/compliance audit.

Thus, for the purpose of ensuring consistency in environmental audit approaches, harmonizing the audit process with international best practices, and promoting professional competence of OAGN staffs, among others, it seems appropriate to develop a separate Environment Audit Guide.

2. Chapter 2- Nepal and Environment Policy

2.1. Environment and environment change in Nepal

Nepal's concern for environment has been reflected in the thirteenth plan (13th plan). In pursuing national development, Nepal increasingly needs to keep in mind the goals of environmental protection and adaptation to climate change. Nepal has ratified several national and international treaties and conventions regarding these issues and has arranged for the corresponding national policies and legislative and institutional infrastructure to uphold its commitments. To minimize stress on the environment and to mitigate the impacts of climate change, Nepal has adopted the notion of green development. With the participation of the Nepal and other governments and national as well as international non-government agencies, efforts have been made to frame strategic programs to promote national and local adaption, initiate carbon trading, and internalize and address environment-sensitive issues.[2]

2.2. Nepal Environmental Policy and Action Plan[3]

Nepal Environmental Policy and Action Plan was prepared in 1993 (2050) in order to incorporate environmental concerns into the country developmental process. Its objective was:

- To manage efficiently and sustainably natural and physical resources
- To balance development efforts and environmental conservation for sustainable fulfillment of the basic needs of the people
- To safeguard national heritage
- To mitigate the adverse environment impacts of developments projects and human actions
- To integrate environment and development through appropriate institutions, adequate legislation and economic incentives, and sufficient public resources.

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[2]Thirteenth Plan FY 2070/71-2072/73 (2013/2014-2015/16)

[3]Nepal Environmental Policy and Action Plan

2.2.1. Sustainable management of natural resources

The proper management of Nepal's land, forest and water resources is essential to guarantee and enhance the continue productivity of the country's agriculture, on which the vast majority of the population depend.

2.2.2. Land management

Sustained growth in the agricultural sector is critical for feeding the growing number of people in Nepal, and for generating a sufficient surplus to support other economic sectors such as manufacturing. However, growth in agricultural sector has been stagnant. One of the principal reasons for this low growth in agriculture is low crop yields that are, in turn, affected by deteriorations soil fertility and quality of agricultural land. Appropriate policies, therefore, need to be pursued to improve soil fertility and to raise agricultural productivity. Proper soil fertility management through optimal utilization of locally available biomass, rehabilitation of lower potential agricultural lands, adoption of environmentally compatible farming practices and reorientation of research and extension to reflect greater responsiveness to the local needs and to sustainable production and consumption alternatives, as well as improved management of livestock and rangelands.

2.2.3. Forest and Rangeland Management

Deforestation and forest degradation have seriously reduced the availability of timber, fire wood, leaf litter, fodder and forage. This has not only depressed the incomes of those who traditionally depend to the direct extraction and utilization of these products, but has also contributed to soil erosion and fertility loss, damaged ecosystems, degraded watersheds and other adverse environmental effects.

Proposed policies to improve the management of forests and rangelands includes, adoption of a national land use plan based on appropriate resource use in different agro-ecological zones, formulation of a national energy policy that emphasizes increase energy use efficiency and development of alternative sources, better integration of related sectors such as agriculture, livestock and soil conservation, and greater participation of local communities and private sector in the management of forest s and rangelands.

2.2.4. Water Resource management

Nepal's vast water resource potential remains largely untapped, though some hydropower projects have been constructed in some rivers. Yet erosion and sedimentation have emerged as serious problems in many watersheds areas. Watersheds, which comprise over two thirds of the country's land area, have experienced degradation due primarily to inappropriate farming practices and devegetation.

2.2.5. Mitigating adverse environment impacts

The impacts of urbanization and industrialization are beginning to cause serious environmental problems in some areas of Nepal. Also, many development projects, particularly large infrastructure projects, can have adverse environmental impacts. Steps must be taken to foresee and correct these environmental issues before they inflict high cost on Nepal's people and its economy.

2.2.6. Urban and Industrial development

Environmental conditions have deteriorated rapidly in the Kathmandu Valley and some other towns, particularly in the Terai. Rapidly expanding, unplanned urban settlements have generated a range of environmental problems affecting human health and welfare. Air and water pollution has worsened due to inadequate sewerage, improper disposal of solid wastes, industrial effluents and discharge, and emissions from motor vehicles. The provision of infrastructure and utility services has been inadequate, exacerbating the situation further.

The current trend of urban sprawl and industrial expansion in and around densely populated areas is unsustainable and poses a serious threat to a clean environment. Policies and actions to remedy the environmental problems associate with urban growth and industrial development., and to prevent similar consequences from happening in future includes, defining and implementing appropriate defining zoning regulations, setting of standards for air and water pollution and their enforcement through a carefully designed package of incentives and regulation, and the designation of responsible institutions for providing infrastructure and utility services.

2.2.7. Infrastructure development

Roads, irrigation, hydroelectric and other infrastructure projects have the potential for imposing significant environmental costs if they are not properly designed and implemented. For example, irrigation systems have suffered from problems of poor design and construction, and inadequate maintenance and management, creating a series of environmental problems, including insufficient surface drainage that causes water logging. Improper design and construction of roads can lead to landslides, and many of Nepal's existing hydro- electric projects suffer from high rates of sedimentation, resulting from inadequate attention being paid to protecting upstream watersheds.

2.3. Nepal Millennium Development Goals (Goal 7) and SD4S

Nepal is one of 189 countries, committed to the Millennium Development Goals (MDGs), a pledge it has renewed in its national development plans.

Nepal Millennium Development Goals Progress Report 2013, (2070) highlights the strides Nepal has made in achievement in the MDG. The principles of sustainable development have been integrated into policies and programmes of the state. Nepal's total emission of CO2 was minimal as compared with the global average. Also, the consumption of ozone-depleting substances is significantly low, showing that the Nepal upheld its Montreal Protocol commitment.

Nepal has made significant progress in reducing the rate of loss of biodiversity. The area that falls under Nepal's "protected area" designation tripled between 1990 (2047) and 2012 (2068)

Similarly SD4s has addopted to maintain the environmental balance. 1581 organisation from 142 countries participated in beyond 2015 for the destination of 2030. There are 1715 sustainable developed goal were adopted. Nepal has also follow the international roadmape to fulfill the sustainable development of the country

2.4. Climate Change Policy, 2067 (2011)

Climate Change Policy, 2067 (2011) has been formulated in order to improve livelihoods by mitigating and adapting to the adverse impacts of climate change, adopting a low-carbon emissions socio-economic development path and supporting and collaborating in the spirits of country's commitments to national and international agreements related to climate change.

Nepal has experienced an average maximum annual temperature increase of 0.060C. This rate of increase is higher in the mountains than in other regions. Despite having only 0.4 percent of the total global population and being responsible for only 0.025 percent of total GHG emissions in the world, Nepal will be affected disproportionately, especially from increasing atmospheric temperature. Changes in the annual rainfall cycle, intense rainfall and longer droughts have been observed. Similarly, both days and nights are presently warmer. The number of days with 100 mm of heavy rainfall is increasing. The timing and duration of rainfall is changing. As glaciers recede from rapid snow and ice melting, glacier lakes are expanding. The adverse impacts of climate change have been noticed in agriculture and food security, water resources, forests and biodiversity, health, tourism and infrastructures.

Climate-induced disasters and other effects have caused damages and losses to life, property, and livelihoods. Millions of Nepalese are estimated to be at risk to climate change. In the past 90 years, a glacier in the Sagarmatha region has receded 330 feet vertically. Because of glacier melting, new glacier lakes have formed. Although there will be an increase in river flows until 2030 (2086), this is projected to decrease significantly by the end of this century. The problems arising due to climate change are increasing over the years.

Measures to mitigate these problems will vary considerably. The use of Environmental Impact Assessment (EIA) is a recent innovation that can help identify adverse environmental impact and propose remedial actions.

2.5. Climate Change Budget Code

The National Planning Commission (NPC) has introduced climate budget code in the national budget. It makes official an analytical framework to calculate government funds channeled for programmes related to climate change.

3. Chapter-3: Environmental Audit Steps and process

3.1. Steps in auditing

As per OAGN manual on performance audit guide, six audit steps have been suggested. These steps are relevant to environmental audit as well. They are as follows:

1. Selection of audit topics
2. Planning
3. Execution
4. Reporting
5. Documentation and quality review
6. Follow-up

3.1.1. Selection of audit topics

With increased public consciousness, the demand for public accountability of persons or entities managing public resources has become increasingly evident so that there is a greater need for the accountability process to be in place and operating effectively. The entities having impact on environment can be categorized in three groups:

- Entities whose operations directly or indirectly affect the environment, whether that be positive or negative - such as by rehabilitation or (conversely) pollution and utilization.
- Entities with powers to make or influence environmental policy formulation and regulation - whether internationally, nationally or locally.
- Entities which have the power to monitor and control the environmental actions of others.

Topics are selected on the basis of impact, materiality, risk to good audit management, and visibility and significance. Factors such as resource requirement and strategic plans of the OAGN must be looked at during selection of topics.

Considering the request to conduct environmental audit from the concerned entity, governmental bodies, PAC, and other oversight bodies, OAGN can select the topics for performing environmental audit. However, it is important that selection of topics for auditing take place without any form of outside pressure, maintaining the OAG's independence.

The same criteria and matrix mentioned in *Audit tool - 2* in Performance Auditing Guide can be used for topics selection.

3.1.2. Planning

The objectives of audit planning are to establish guidelines and provide guidance on the methods and process of implementing audits in an organized manner. Audit planning involves developing a general strategy and a detailed approach for the expected nature, timing and extent of the audit, in order for the audit to be performed effectively.

The first step in planning of the environmental audit is the Review Background Information of the Entity/ topics to be audited. Some of the sources available for gathering background information about the audit entity for compliance, financial and performance related environment audits are:

- Relevant legislation, regulations and publications
- Auditee's policies and procedures manual
- Agency periodic plan
- Project appraisal/feasibility study
- Site visits and observations of programme operations
- Public accounts, departmental and agency annual reports
- Previous audit files and reports
- Risk register maintained in the directorate
- Participating in an auditee's orientation/subject matter training course (if any)

- Media coverage and external reports
- The OAG documentation on the auditee
- Minutes of relevant parliamentary committee
- Formal reports prepared by central agencies, in-house task forces or outside consultants on the operations of the auditee
- Photographs or other visual aids taken or prepared by the auditors or obtained from the department and other sources
- Management meeting minutes
- Interviews with senior personnel of agencies involved in the execution of the project
- Interview with senior personnel of central coordinating agency
- Reports of independent evaluation agencies like Non Government Agencies (NGOs)
- Peer review reports

Audit planning is vital to the success of the audit undertaken. It is essential that the auditors spend adequate time in planning, as this will result in better identification of priority areas and potential problems and proper assignment of work.

For planning for successful audit assignments, the auditor needs to understand the auditees' commitments in terms of financial norms, compliance requirements and performance expectations. This would determine what procedure is to be followed (audit methodology) and assignment of qualified staff for the conduct of audit (resource allocation).

The same audit tools and templates mentioned in Performance Auditing Guide can be used for planning purpose.

3.1.2.1. Audit objective

Audit objectives should be linked to areas where there are substantial risks and relate to why the audit is being conducted and are based on the audit mandate.

Audit objectives should be established or assessed by the auditor with a view to defining an audit which has the potential to improve public administration. Performance audits should therefore not only warn against defective practices but also identify and promulgate good practice.

Audit objectives should be precisely defined or specified. The audit objectives should be achievable, realistic, relevant, specific and meaningful. Audit objectives will provide the information about the expected outcome of audit, such as results achieved or the economy or efficiency in the utilization of resources.

3.1.2.2. Scope of Environmental Audit

Audit scope will differ for different kinds of audit, as discussed below:

(a) Compliance audit: The scope of audit is restricted to checking compliance of the audit entity with respect to policies/laws/ rules/regulations which are related to environment.

(b) Performance audit: The scope could encompass the following:

a) Audit of Government's monitoring of compliance with environmental laws: The

main aim of such audit is to offer an opinion on the performance of the audit entity with regard to compliance against already established environmental laws.

b) Audit of the performance of Government's environmental programs: The main aim of such audit is to offer an opinion on the performance of specific environmental programs/ projects/strategies already formulated and being implemented by the Government.

c) Audit of the environmental impact of other Government programs: The main aim of such audit is to offer an opinion on the environmental impact of other programs/projects formulated and implemented by other Ministries/departments/ agencies other than the Environment Ministry of Science, Technology and Environment. For example, audit of the impact of mining, building roads/dams/ hydro projects, construction of ropeways etc., on the environment would fall under this category.

d) Audit of Environmental Management Systems: The main aim of such audit is to offer an opinion on the implementation of Environmental Management Systems (EMS) of the audit entity and/or ISO 14001 Standards. The absence of an EMS can also be a source of audit comments.

e) Evaluation of environmental policies and programs: The main aim of such audit is to offer an opinion on the adequacy or lack of a policy framework governing environmental issues. International best practices can be a source for such comparison. However, adaptability to local conditions should be considered before making such comparisons.

(c) Financial audit:

Environmental matters are becoming significant to an increasing number of governments, entities, and users of financial statements. Some organizations operate in sectors where environmental matters may have material impacts on the financial statements. International Auditing Practices Committee (IPAC) defines environmental matters in a financial audit as:

a) initiatives to prevent, abate or remedy damage to the environment or to deal with the conservation of renewable and non-renewable resources (such initiatives may be required by environmental laws and regulations or by contract, or they may be undertaken voluntarily);

b) consequences of violating environmental laws and regulations;

c) consequences of environmental damage done to others or to natural resources; and

d) Consequences of vicarious liability imposed by law (for example, liability for damages caused by previous owners).

3.1.2.3. Selection Criteria for Environment Audit

A key concern for SAIs in carrying out environmental audits is determining the technical criteria against which the audited entities' disclosures or performance will be assessed. Criteria depends on the type of audit to be conducted and the purpose and sources of criteria.

Types of audit are financial, compliance and performance audit.

Source of criteria are of two types:

- **Authoritative** - This gives the auditor certainty as to the acceptability of the criteria as a sound basis for an audit.
- **Non-authoritative** - This gives rise to a risk for the auditor about the acceptability of the criteria as a sound basis for an audit.

Particulars	Financial Audit	Compliance Audits	Performance Audits
Purpose of Criteria	To enable the auditor to establish whether the reporting entity has appropriately recognized, valued and reported environmental costs, liabilities (including contingent liabilities), and assets.	To enable the auditor to establish whether the entity has conducted the environmental activity in compliance with all applicable obligations	To enable the auditor to form an opinion on either or both of: • The validity of the performance indicators used by the entity when publicly reporting its performance in conducting the environmental activity. • Whether the entity has conducted the environmental activity in an effective, efficient, and economical manner consistent with - the applicable governmental policy; and - Any other factors affecting the conduct of the activity over which the entity had no control.

Authoritative Sources of Criteria	• Standards issued by OAGN, ISAB, PSAB • Standards issued by ICAN • Guidance issued by INTOSAI, ASOSAI, etc • Directives and notifications of Governmental regulatory bodies	• National laws • International agreements • Policy directives.	As the field is still developing, authoritative sources are few or non-existent. Possible sources could include: • Performance indicators of effectiveness, efficiency, or economy that are - prescribed by law; or - specified in the official governmental policy for the activity; or - Otherwise mandatory on the entity. • Generally accepted standards issued by a recognized body. • Codes of professional practice issued by a recognized body.

Non-authoritative Sources of Criteria	• Guidance issued by a ICAN • Academic literature	**	Subject to an assessment of the risk, any source that the auditor considers appropriate for the purpose E.g. • Performance indicators or measures used by similar entities or other entities engaged in similar activities. • Academic literature. • Outside experts. • OAGN itself.

**A compliance audit ought not to be based on criteria from a non-authoritative source on the assumption that the audited entity is not obliged to comply with them.

In case of performance audit the same criteria and matrix mentioned in *Audit tool - 2* in Performance Auditing Guide can be used for topics selection.

3.1.3. Execution

The purpose of the audit execution is to implement the work plan, conduct the audit and produce a high quality audit report. Carrying out an audit may be seen as both an analytical and a substantive test procedure. In the analytical process, data are collected, interpreted, and analyzed. The substantive test process begins to different findings, arguments and perspectives are assessed, and continue until the report has been finalized. Audit examination work takes place on the basis of audit planning already undertaken, and as per the developed planning documents, Audits should be performed with due care, with an objective state of mind, and with appropriate supervision.[4]

3.1.3.1. Entry meeting

Before executing audit plan, auditor should communicate audit objectives, scope and audit questions to the auditee management by organizing entry meeting. Generally, such meeting can be organized in the premises of the auditee, in which all the responsible departmental or section head will participate. Minutes of the meeting will be prepared and signed by the both party. The feedbacks of the entry meeting if necessary should be consider and adjusted in the audit plan subsequently.

[4]Performance Audit Guide, OAGN

3.1.3.2. Audit Evidence

Audit evidence is information collected and used to answer the audit question and develop audit findings. Such evidence forms the basis of audit conclusions and recommendations and is a central concern from the planning to the completion of the audit. The types of evidence to be obtained should be explainable and justifiable in terms of sufficiency, validity, reliability, relevance, and reasonableness. All audit findings and conclusions must be supported by audit evidence. The Auditing Standards state that 'Competent, relevant and reasonable evidence should be obtained to support the auditor's judgment and conclusion regarding the organization, program, activity or function under audit.

3.1.4. Reporting

At the end of audit the audit team shall prepare a written report, setting out the finding in an appropriate form; its content should be easy to understand and free from vagueness or ambiguity, include only information which is supported by competent and relevant audit evidence and be independent, objective fair and constructive. Audit report should be prepared keeping view on the audit objective.

3.1.4.1. Reporting Process

After confirming significant issues, the audit team should draft audit report incorporating the criteria, condition, cause and effect and consequences, conclusions and recommendations in the audit issue papers, should be reviewed by the Audit Director and the Assistant Auditor General of OAGN before being presented to the appropriate level of management a few days prior to the exit conference.

Before issuing audit report, the auditee involved should always be given the opportunity to examine its content. The draft report provides the first opportunity for the auditee to see the full context of audit findings, conclusions and recommendations in written form. Where responses provide new information, the auditor should assess this and be willing to modify the draft report.

3.1.4.2. Exit Conference

Exit conference is held between audit team members and the entity's management group. Exit conference is carried out to discuss audit findings conclusion and recommendation and to validate the accuracy and completeness of information included in the draft report. The exit conference should be noted and signed by both the parties.

3.1.4.3. Preliminary Audit Report

The purpose of preparation of the preliminary audit report is to seek formal response of the audited entity. The preliminary report should be forwarded to the audited entities. Copies of the report should also be forwarded to concerned departments and secretary of line ministry; it should be communicated to the responsible party that the response should be received in writing within 35 days. In the event this is not the case, the issues will be incorporated into the final report as it is, with mention that no response has been received. The response should address the issues raised in the audit report and include specific action plans with regards to implementing corrective action.

3.1.4.4. Final Report

The auditor should review each response received to determine that timely corrective action and adequate detail have been provided for each finding of the report. Once the management comments are analyzed, the more important issues should be identified to be included in the final report. The final report should have clarity and focus on the subject matter after incorporating the responses from the audited entity.

The Audit Director shall review the audit files again to ensure that the evidence, working papers and other documents are sufficient to support the final report

3.1.5. Documentation and quality review

Audit files support reports issued. The Audit Director should ensure that audit files exist, contain appropriate and sufficient evidence, and are complete and easily retrievable. Working papers should be prepared in sufficient detail to enable an experienced auditor with no previous connection with the audit to ascertain what work has been performed to support the findings and conclusions

The overall review process should be done by the Assistant Auditor General, to ensure that all conclusions made are consistent with each other, are relevant, logical, constructive and supportive.

3.1.6. Follow Up

Follow-up is an important and final stage of environment audit process. A systematic review should be carried out by the Office of the Auditor General on the action taken by the management of an auditee on the recommendations/audit observations made by Office of the Auditor General or Public Accounts Committee (PAC) of the Parliament. The OAG should report on results of follow-up reviews to the Parliament and/or management, as appropriate.

4. Chapter -4: Key Sectors of Environment Audit

4.1. Audit of Water Pollution

Water is one of the essential elements for survival. In recent years been a major issue in Nepal. Because of the importance of water for the process of economic development, for public health, and for the quality of the ecosystems, a government has the responsibility to see that basic services are provided and a balance of competing interests is maintained. Since all governments need to deal with the issues at hand, all SAIs have an interest as well. SAIs can contribute to the quality of water policy by providing recommendations for improvement to the bodies they audit.[5]

4.1.1. Major audit Issues

The audit topics vary from region to region, depending on the specific problems that are encountered. Water quality, Rivers and lakes, Flooding, Drinking water and sanitation, Nature and biodiversity aquatic environment etc. are the subjects that are most frequently audited.

4.1.2. Compliance with Legal Matters governing the Water issues in Nepal:

Checking the Compliance with the acts, rules and legislation relating to prevention of water pollution is a major part of audit exercise. Various enactments have been made in

[5]Auditing Water Issues, Experience of Supreme Audit Institutions

Nepal regarding water issues, which are as follows:

Acts or Regulation	Areas Addressed
Drinking Water Regulation, 1998 (2055 B.S.)	• Regulates the use of drinking water. • Establishes system of formation of Drinking Water User Association (consumer organization). • Sets out provisions on licensing of use drinking water. • Deals with maintenance of quality standards for drinking water and control of water pollution. • Sets out provisions relating to service utilization by consumers.
Electricity Act, 1992 (2049 B.S.)	• Administers the use of water for hydropower generation. • Establishes provisions on licensing. • Sets out the powers, functions and duties of a license holder. • Provides certain pecuniary incentives for license holders. • Sets out the powers of the government.
Electricity Regulation 1993, (2050 B.S.)	• Sets out the requirement of analysis of environmental effect at the time of application of license for production and transmission of electricity
Environment Protection Act 1996, (2053 B.S.)	• Requires proponent (certain persons/bodies) to conduct an Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) • Deals with the prevention and control of pollution.
Environment Protection Regulation, 1997 (2054 B.S.)	• Lists out the water related proposals required to conduct an IEE or EIA. • Provides for prevention and control of water pollution and provisions for provisional or permanent pollution control certificate.
Essential Commodity Protection Act, 1955 (2012 B.S.)	• Reckons drinking water an indispensable commodity and strictly protects drinking water. • Prohibits any unauthorized use or misuse, stealing, damaging, leakage etc. of drinking water.
Income Tax Act, 2058 (2002)	• Provides for deduction of pollution control expenses to the extent incurred in the operation of that business in that year
Industrial Enterprises Act, 1992 (2049 B.S.)	• Requires permission for the extension and diversification of environmentally sensitive industries. • Provides pecuniary incentives for industrial enterprises that contribute in minimizing harmful effects on the environment.

Irrigation Regulation, 2000 (2056 B.S.)	• Deals with Irrigation Water User Associations and project handover to Irrigation Water User Associations. • Sets out provisions on service utilization. • Sets out the responsibilities of user of irrigation and provides for service charges. • Provides for a joint management system by GON and Irrigation Water User Association. • Deals with Irrigation and River Control Committee. • Provides for protection, repair and maintenance of irrigation systems.
Local Self Governance Act, 1999 (2055 B.S.)	• Establishes a decentralized governance structure. • Establishes powers, functions and duties of the VDC, Municipality and DDC in relation to water resources and sanitation. • Sets out list of natural resources which are assets of local bodies and empowers local bodies to levy natural resources utilization tax.
Local Self Governance Regulation 1999 (2056 B.S.)	• Establishes powers, functions and duties of the VDC, Municipality and DDC in relation to water resources and sanitation. • Sets out the procedure for the formulation of water related plans and projects and their implementation.
Muluki Ain, 1963 (2020 B.S.)	• Sets out the order of priority of use of water for irrigation. • Regulates traditional farmer managed irrigation systems.
Nepal Water Supply Corporation Act 1989 (2046 B.S.)	• Establishes the Nepal Water Supply Corporation as the perpetual, autonomous government controlled corporation responsible for the supply of drinking water. • Prohibits certain acts and sets out penalties/punishment for infringement.
Solid Waste (Management and Resource Mobilization) Act 1987 (2044 B.S.)	• Establishes the Solid Waste Management and Resource Mobilization Centre as the responsible authority for the management of solid waste and mobilization of resources related thereto. • Makes arrangements for the prevention of water pollution from solid waste.

Solid Waste (Management and Resource Mobilization) Regulation, 1989 (2046 B.S.)	• Deals with the collection, transportation and disposal of solid waste. • Sets out provision of public toilets and bath houses.
The Constitution Nepal, 2015 (2073 BS)	• Assures right to life and property.
Water Resource Act, 1992 (2049 BS)	• The umbrella Act governing management of water resources. • Vests ownership of water resources in the State. • Provides for the formation of Water Users Association and establishes provisions on licensing. • Sets out the priority order on the utilization of water resources. • Establishes quality standard of water resources. • Prohibits water pollution.
Water Resource Regulation, 1993 (2050 BS)	• The umbrella Regulation governing management of water resources. • Sets out the procedure to register Water User Association and to acquire a license. • Establishes the District Water Resource Committee. • Sets out the rights and duties of Water User Associations and license holders. • Deals with the acquisition (utilization) of house and land and compensation.
Water Tax Act, 2023 (1966)	• Manages modus operandi of recovering the amount of the water tax levied pursuant to the prevailing Nepal law
Irrigation Policy, 2060 (2003)	• It aims to provide round the year irrigation facility to the irrigation suitable land by effective utilization of the current water resources of the country and to develop institutional capability of Water Users for sustainable management of existing system

4.2. Performance audit on water pollution[6]

A checklist comprising of major audit themes, audit objectives and audit questions relating to control of water pollution has been listed below. Such a list would act as guidance for the audit of water pollution related issues:

Objective	Main Questions
Theme 1: Existence of database and identification of risks	
1. Whether database of the sources and quantum of pollution of rivers/lakes/ water sources has been created and has the risks to the river and health been assessed for the control of pollution.	1.1 Whether all causes/sources of pollution to the rivers/lakes/ground water/water sources have been identified.
	1.2 Whether the contribution of each source of pollution has been quantified.
	1.3 Whether risks to the health as a result of pollution to rivers/lakes/ground water/water sources have been identified.
	1.4 Whether risks to the environment as a result of pollution to rivers/lakes/ground water/water sources have been identified.
Theme 2: Effective planning for the control of water pollution	
2. Whether planning for control of pollution was effective and took into account data and identification of risks.	2.1 Whether planning for the control of pollution was based on accurate/ recent/reliable data.
	2.2 Whether planning for the control of pollution was based on assessment of risk.
	2.3 Whether planning for the control of pollution was based on assessment of requirement/ availability of funds
Theme 3: Clear allocation of responsibility and accountability	
3. Whether various agencies involved in the control of pollution have been allocated clear responsibility and accountability for planning, implementation and monitoring.	3.1 Whether there was allocation of responsibility and accountability to agencies for planning.
	3.2 Whether there was clear delineation of responsibility and accountability to agencies implementing the programs for the control of pollution.
	3.3 Whether there was clear delineation of agencies for monitoring (including monitoring of infrastructure for the control of pollution).
	3.4 Whether there was clear delineation of regulatory agencies for measurement and setting of standards for the control of water pollution.
Theme 4: Effective implementation of measures to control water pollution	

[6]Guidance on Conducting Environment Audit, ASOSAI

4. Whether implementation of the program for the control of pollution resulted in the creation of the infrastructure envisaged under the program and were these functioning as envisaged.	4.1 Whether infrastructure for the control of pollution created under the program for the control of pollution as envisaged.
	4.2 Whether infrastructure created for the control of pollution was being utilized and maintained as envisaged.
Theme 5: Monitoring	
5. Whether monitoring of implementation of the program for the control of pollution took place effectively and whether monitoring was undertaken to ensure operation of the pollution control measures after they were created.	5.1 Whether effective monitoring of program implementation took place to ensure that the program objectives were met.
	5.2 Whether the infrastructure created under the program for the control of pollution was effectively monitored to ensure that it met set/designed performance parameters.
	5.3 Whether regular and effective monitoring of pollution levels of rivers/lakes/ground water/water sources took place.
Theme 6: Utilization of funds	
6. Whether funds were utilized in an efficient and economic manner to further the aim of reducing pollution from the rivers/lakes/ ground water/water sources.	6.1 Whether funds allocated to the states under the program for the control of pollution were released timely to the implementing agencies.
	6.2 Whether the funds were utilized economically and efficiently.
Theme 7: Impact analysis	
7. Whether the program for the control of pollution had succeeded in reducing pollution levels in rivers/lakes/ground water/water sources and restoring water quality.	7.1 Whether there was improvement in water quality as a result of implementation of the program for the control of pollution.
	7.2 Whether external evaluation of the program for the control of pollution was done.
	7.3 Whether performance of the infrastructure created for the control of water pollution was as per set/designed performance parameters.

4.3. Audit of Air Pollution

Air pollution is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution. Pollutants of major public health concern include particulate matter, carbon monoxide, ozone, nitrogen dioxide and sulfur dioxide. Outdoor and indoor air pollution cause respiratory and other diseases, which can be fatal.[7]

[7]World Health Organization

4.3.1. Compliance with Legal Matters governing the Air issues in Nepal:

Checking the Compliance with the acts, rules and legislation relating to prevention of air pollution is a major part of audit exercise. Various enactments have been made in Nepal regarding air issues, which are as follows:

Acts, Rules and Regulations	Areas addressed
Environment Protection Act, 2053	• Grants powers to Government of Nepal to frame necessary Rules governing the matters related to air pollution and control.
Environment Protection Rules, 2054 (1996)	• Determines the scope of Environmental Impact Assessment. • Grants approval to those projects which propose to comply within the environmental standards • Monitoring and evaluation of impact of implementation of proposal on the environment. • Conducting inspections regarding the state of vehicles.
Nepal Vehicle Mass Emission Standard, 2069 (2012)	• Assigns the limits on types of engines used in the vehicles i.e.- approving the Positive Ignition Engines. • Assigns the limits on types of engines operated by diesel power and determining the limits of production using fuels. • Sets the standards to verify the exhaust emissions and conduct Opacity Smoke Tests.
Civil Aviation Act, 1959 (2016)	• Empowers government to frame regulations to regulate, prevent and control air pollution from aircraft
Nepal Mines Act, 1996 (2053)	• Ensures that the mining activities are performed without jeopardizing the interest of the local people
Nepal Petroleum Products Act, 1983 (2040)	• Provides special consideration to security of life and property of people and without damaging forests, natural heritage and causing environmental pollution
Industrial Enterprises Act, 1992 (2049)	• Grants a reduction of up to 50% on the taxable income of any industry invested in pollution minimization equipment or processes
Income tax Act 2058 (2002)	• Provides for deduction of pollution control expenses to the extent incurred in the operation of that business in that year

Nepal is signatory to various international accords on prevention of air pollution, some of these are as follows:

Vienna Convention For The Protection of the Ozone Layer, 1955 (2012)	• Serves as a framework for efforts to protect the globe's ozone layer
London Amendment to the Montreal Protocol on Substance that Deplete the Ozone Layer, 1990 (2047)	• Protects the ozone layer by taking precautionary measures to control equitably total global emissions of substances that deplete it, with the ultimate objective of their elimination on the basis of developments in scientific knowledge, taking into account technical and economic considerations and bearing in mind the developmental needs of developing countries
Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997 (2054)	• Sets the quantified limitation and reduction objectives within the specified timeframes for their anthropogenic emissions by sources and removal of greenhouse gases.
EURO III Emission Standard	• Bans the import of vehicles which do not comply with the EURO III standards.

4.3.2. Performance audit on air pollution[8]

A checklist comprising of major audit themes, audit objectives and audit questions relating to control of air pollution has been listed below. Such a list would act as guidance for the audit of air pollution related issues:

Objectives	Main Questions
Theme 1: Assessment of the levels of air pollution and its hazards	
1. Whether quantum of air pollution has been accurately assessed and the risks to human health, ecosystem and environment have been studied.	1.1 Has an assessment of quantum of each kind of air pollutant (particulates, sulphur dioxide, nitrogen dioxide, carbon monoxide, hydro carbons, ozone, lead etc.) been made at the macro level as well as at the micro level? Have the sources contributing to air pollution like power plants, municipal waste incinerators, burning woods, oil refineries, manufacturing facilities (like synthetic, organic, agricultural, chemical, pharmaceutical, paints, aerosol, electrical appliances, refrigeration & air conditioning), landfills, commercial automobiles, privately owned automobiles, locomotives and aircrafts, been identified, and whether the quantum of air pollution by each source has been assessed.
	1.2 Has an identification and analysis of the expected parameters of significance for air pollution like increase in air pollution due to increase in population, seasonal changes, greater economic growth, increase in the number of private vehicles, etc., been done?
	1.3 Has the government identified risks to environment (on air quality) as a result of air pollution?
	1.4 Has the government identified risks to human health caused by air?

[8] Guidance on Conducting Environment Audit, ASOSAI

Theme 2: Existence of rules and regulations pertaining to air pollution	
2. Whether clear rules and regulations/action plan/ strategies have been enacted to control air pollution and whether clear responsibility and penalty for violation has been incorporated in the legislations already enacted.	2.1 Whether a separate law/rule has been enacted to control air pollution and whether these laws/rules are adequate to effectively control air pollution.
	2.2 Whether all sources of air pollution like from power plants, municipal waste incinerators, burning woods, oil refineries, manufacturing facilities (like synthetic, organic, agricultural, chemical, pharmaceutical, paints, aerosol, electrical appliances, refrigeration & air conditioning, landfills, commercial automobiles, privately owned automobiles, locomotive and aircraft,) have been taken into account while framing laws/ rules for control of air pollution.
	2.3 Whether the government has defined acceptable levels for each kind of pollutant and do these levels vary with international standards.
	2.4 Whether the laws/rules incorporate responsibility and penalty for violation of air pollution control laws/rules.
	2.5 Has the Government made any strategy/action plan with clear timelines and commitment for reduction of quantities for air pollution?
	2.6 Has the Government framed policies/ strategies/ action plans for air pollution reduction and have these been communicated to all stakeholders?
	2.7 Has the suitable technology been adopted to minimize the environmental and health hazards caused by air pollution?
Theme 3: Allocation of responsibility for control of air pollution	
3. Whether the various agencies involved in the process of control of air pollution have been clearly identified and whether clear responsibility and accountability for air pollution management has been allocated among them and whether there is a mismatch/gap/overlap among the responsibility centers.	3.1 Has a nodal body for control of air pollution been identified both at the macro and the micro levels?
	3.2 Has the primary agency for making policy/legislation/ strategy for control of air pollution been identified at the macro as well as micro levels?
	3.3 Have bodies been created and entrusted responsibility for the implementation of laws/ rules on air pollution?
	3.4 Have bodies been created and entrusted responsibility for the monitoring of laws/ rules on air pollution?
	3.5 Has a regulatory agency being created for measuring air pollution, setting acceptable levels of air pollution and revising it regularly to ensure better control?
Theme 4: Compliance of air pollution rules and regulations	

4. To ascertain the level of compliance to air pollution rules and regulations already in existence.	4.1 Are all the entities causing air pollution acting in accordance with the compliance criteria and procedures laid down in law?
Theme 5: Monitoring	
5. Whether effective monitoring was done to ensure compliance to defined acceptable levels for each kind of pollutant.	5.1 Whether monitoring mechanism was effective in checking non-compliance with the provisions of air pollution control laws/rules.
	5.2 Whether a system was in place for regular and sustained monitoring.
	5.3 Whether penalty was imposed, when required, on a regular basis as a result of monitoring of levels of air pollution.
	5.4 Whether any independent review/evaluation been carried out regarding implementation of these laws/rules.
Theme 6: Adequacy of funding and infrastructure	
6. Whether funding and infrastructure was adequate to ensure effective compliance and monitoring of air pollution control programs.	6.1 Are funds being provided at the macro level by the government for implementation of air pollution prevention rules?
	6.2 Are funds being provided at the micro level by local bodies for implementation of air pollution prevention rules?
	6.3 Whether need assessment for manpower to implement and monitor air pollution prevention programs has been made and has the manpower been deployed effectively.

4.4. Audit of Waste management

Solid Waste means domestic waste, industrial waste, chemical waste, health institution related waste or harmful waste and this word shall also mean the materials which cannot be used presently, thrown away or in rotten stage or in solid, liquid, gaseous, thick liquid, smoke, or dust form emitted out damaging the environment or materials and equipment used for electrical or information technology or any other materials of such nature or posters, pamphlets posted unauthorized at public places or other substances prescribed as solid waste through publication of notice in the Nepal Gazette by the Government of Nepal from time to time.[9]

As per the United Nations Statistics Division, waste are materials that are not prime products (that is, products produced for the market) for which the generator has no further use in terms of his/her own purposes of production, transformation or consumption, and of which he/she wants to dispose. Wastes may be generated during the extraction of raw materials, the processing of raw materials into intermediate and final products, the consumption of final products, and other human activities.

According to the Basel Convention, wastes are substances or objects that are disposed or are intended to be disposed or are required to be disposed by the provisions of national laws

[9] The Solid Waste Management Act, 2068

4.4.1. Problems caused by waste

Unsatisfactory handling of waste can lead to contamination of soil, air and water. Some of the examples are:

- Soil can be contaminated with toxic components,
- Leachate from waste can pollute surface water and groundwater
- Uncontrolled burning of waste produces toxic and carcinogenic gases
- Leaks of radioactive substances can contaminate the air and soil
- The transmission of diseases and infections by rodents, vector insects, etc.
- Birth defects caused by exposure to polluted drinking water
- Cancer caused by radiation exposure
- Respiratory problems caused by waste sorting, uncontrolled burning of waste, etc.
- Odor, littering, unsightliness, noise, etc
- Waste crime

4.4.2. Waste Stream

Eight steps have been identified through which a waste passes through. Knowledge of these steps aids an auditor in gaining an overview of the waste management process. These stages are as follows:

i. **Prevention** - It is linked more to waste policy than to actual waste handling

ii. **Generation** - Main generators of waste are households, industry, hospitals, commercial businesses, and public entities

iii. **Recycle, Reuse and Recover (3Rs) -** These are approaches to waste treatment and may occur internally within the activities of the waste generator or organized externally after the collection and transport stages. Reusing and recycling are ways of recovering material.

iv. **Collection** – It applies only to some of the waste that is generated, depending on the producers, and applies mainly to waste from households and commercial business.

v. **Transport and export**– The waste generators that are not users of the collection of waste, such as large businesses, industries, and hospitals, need to transport their waste to a site for safe treatment. The collected waste also needs to be transported. Some types of waste might be exported.

vi. **Treatment and disposal -** This is the preferred end station for the waste, and secure handling here is of paramount importance. Thermal destruction, chemical treatment and neutralization are the approaches to eliminate hazardous properties of waste.

vii. **Illegal Dumping** – It occurs at waste disposal sites, on private or public land or in the rivers. This may involve the large-scale dumping of inert wastes, such as medical waste or chemicals, or litter in the form of small quantities of nonhazardous waste.

viii. **Contaminates Sites** - If the disposal of waste is not conducted properly the result will be contaminated sites.

4.4.3. Solid Waste Management in Nepal

Rapid and uncontrolled urbanization, lack of public awareness, and poor management by municipalities have intensified environmental problems in towns in Nepal, including unsanitary waste management and disposal.

4.4.4. Compliance Audit

Acts, Rules, Regulations and Conventions	Areas addressed
Solid Waste Management Act, 2068 BS (2011) and Solid Waste Management Rules, 2070 BS (2013)	• Provides for management of the solid waste in a systematic and effective way by reducing at its source, re-use, processing or discharge and for maintaining a clean and healthy environment through the reduction of adverse effects that may be caused to the public health and environment by amending and consolidating the laws relating to the management of solid waste like most essential services laws • Vests the responsibility of management of solid waste to local bodies • Issues license to national or foreign company, body or organization to carry out management of solid waste
Environment Protection Act, 2053 BS (1997) Environment Protection Rules, 2054 BS (1998)	• Umbrella legislation for protection of environment • Prohibits the carrying out of an act which creates pollution through generation of waste
Local Self-Governance Act, 2055 BS (1999)	• Confers power on the Ward Committee to arrange for disposal of wastes • Provides for punishment and fine in case a person dumps solid wastes at places other than the designated area • Provides imposition of service charges for solid wastes management
Basel Convention on the control of trans-boundary movements of Hazardous Waste and their disposal	• Provides for minimization of quantity and hazard of wastes generated • Reduces trans-boundary movements of hazardous waste

Labor Act, 1991 (2048)	• Also deals with health and safety of workers and provides for removal and disposal of solid waste during production process

4.4.5. Performance Audit

A checklist comprising of major audit themes, audit objectives and audit questions relating to control of waste pollution has been listed below. Such a list would act as guidance for the audit of waste pollution related issues:

Objective	Main questions
Theme 1: Assessment of the quantum of waste and risks associated with it	
1. Whether the quantum of waste being generated has been accurately assessed and whether risks to environment and health posed by waste have been identified.	1.1 Has an assessment of quantum of each kind of waste been made at the macro as well as micro level according to waste sources (like industries, households, hospitals etc.) amounts and types (municipal solid waste, bio-medical waste, hazardous waste, e-waste etc.) to get an accurate picture of the waste being generated in the country and states.
	1.2 Has an identification and analysis of the expected parameters of significance for waste generation like increase in waste due to increase in population, greater economic growth, increase in demand for consumer goods, changes in manufacturing methods etc., and the composition of waste been done.
	1.3 Has an assessment been made about the current capacity to handle waste and whether more capacity needs to be created based on the quantity of waste being generated?
	1.4 Has any entity/government identified the risks to environment as a result of improper management of waste and waste accumulation?
	1.5 Has the government identified risks to human health as a result of improper management of waste?
Theme 2: Recognition of waste as a cause of environmental degradation	
2. Whether waste has been adequately recognized as a cause of environmental degradation by environmental legislations and planning authorities	2.1Does the legislation on protection of environment recognize waste as one of the threats to the environment?
	2.2 Do planning documents recognize the management of waste as a priority area for sustainable development ?
Theme 3: Theme 3: Government policies on waste minimization and waste reduction	

3. Whether policies on waste management reflect the priority of waste reduction and waste minimization in preference to waste disposal.	3.1 Has the government enacted a separate policy for waste management and does the waste policy define the hierarchy governing waste management?
	3.2 Has the government prepared an action plan for the reduction of each kind of waste?
	3.3 Has the government put in place waste prevention, reduction, and reuse and recycle strategies which will reduce the waste being generated in the country.
	3.4 Has the government taken any action on consumer information and education to promote waste minimization, specifically reduction, reuse and recycling?
	3.5 Does an environment labeling program exist and has it succeeded in its objective of promoting the use of environmental friendly products?
Theme 4: Existence of legislations for disposal of all kinds of waste	
4. Whether environmental legislations dealing with disposal of each kind of waste exists and whether clear responsibility and penalty for violation has been incorporated in the legislations already enacted.	4.1 Do legislations /rules exist for the disposal of all types of waste?
	4.2 Do all the legislation/rules for the management of waste exist in a framework in one place for easy understanding and implementation?
	4.3 Whether the laws/rules incorporate responsibility and penalty for violation (polluter pays principle) of waste laws.
Theme 5: Allocation of responsibility for the management of waste	
5. Whether the various agencies involved in the process have been identified and allocated clear responsibility and accountability for waste management and whether a mismatch/gap/overlap exists among the responsibility centers.	5.1 Has a nodal agency regarding waste management issues been identified?
	5.2 Have policy making bodies for each kind of waste been created.
	5.3 Have bodies for implementation of waste laws and rules been created?
	5.4 Have bodies been created and entrusted responsibility for monitoring the implementation of laws/ rules on waste.
	5.5 Have regulatory bodies been set up to fix standards for emissions and effluents generated by waste.
	5.6 Is there a body to assess the pollution being caused by the different types of wastes?
Theme 6: Compliance to and monitoring of rules governing waste management	

6. Whether compliance to laws relating to waste is taking place and whether the monitoring mechanism is effective in checking non-compliance.	6.1 Are the municipal authorities managing and handling solid waste in accordance with the compliance criteria and procedure laid down in law.
	6.2 Is municipal solid waste being collected as envisaged under law?
	6.3 Is segregation of municipal waste taking place as envisaged under law?
	6.4 Have municipal authorities established and maintained storage facilities in such a manner so that they do not create unhygienic and unsanitary conditions around it.
	6.5 Is the transportation of municipal solid waste taking place as envisaged under the law?
	6.6 Is the processing of municipal solid waste done as envisaged under the law?
	6.7 Is the disposal of municipal solid waste being done as envisaged in the law?
	6.8 Is the management of bio-medical waste being done in accordance with the law?
	6.9 Has the segregation and labeling of bio-medical waste prior to storage, transportation, treatment and disposal been done as per the law.
	6.10 Is the disposal of plastic waste being done as per the law?
	6.11 Is the disposal of industrial waste being done as per the law?
	6.12 Is the disposal of hazardous waste being done as per the law?
	6.13 Is the disposal of any other kind of waste for which laws have been enacted, disposed as per the laws?
	6.14 Whether monitoring mechanism was effective in checking non-compliance with the provisions of laws governing waste management.
Theme 7: Evaluation and feedback mechanism	
7. Whether a sound system for taking effective action on the collected feedback has been evolved?	7.1 Have any evaluation studies been carried out regarding implementation of these laws.
	7.2 Have the recommendations made by the independent evaluation agencies been incorporated in the Acts/rules.

Theme 8: Adequacy of funding and infrastructure	
8. Whether funding and infrastructure was adequate for the implementation of rules on waste management and whether the funds/infrastructure has been used economically, efficiently and effectively.	8.1 Are funds being provided for implementation of waste management laws/rules?
	8.2 Is the funding adequate for waste management activities?
	8.3 Whether need assessment for technically qualified manpower to implement and monitor waste management has been made and have these been deployed effectively.
	8.4 Whether facilities to monitor pollution and environmental degradation as a result of waste exists with the pollution monitoring agency.

Question Tree and *Audit Design Matrix* related to audit by OAGN to assess the efficiency and effectiveness of SWM works carried out by KMC and SWMTSC are mentioned in *annex 2* and *annex 3* for future reference.

4.5. Audit of Bio-Diversity

'Biological diversity' (biodiversity) means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.[10]

4.5.1. Brief Overview of Nepal's Biodiversity[11]

Nepal possesses a disproportionately rich diversity of flora and fauna at ecosystem, species, and genetic levels. A total of 118 ecosystems and 75 vegetation types have been recognized in the country. The majority of the ecosystems are reported to be found in the Mid-Mountains (52) and High Mountain (38), regions (Dobremez, 1976) (2032). The forest ecosystems of the country, which have been classified into 35 forest types by Stainton (1972) (2028), are of international importance both in view of the number of globally threatened wildlife and floral elements as well as the diversity of ecosystems represented within these areas (Bhuju et al., 2007) (2063).Rangeland ecosystems, comprising of grasslands, pastures, scrublands and forests, and wetland ecosystems, comprising of both the natural and man-made, are other important ecosystems found in the country.

Nepal also has a high degree of agro-ecological diversity. The country's major agro-ecosystems consists of rice, maize, wheat, millet and potatoes as the principal crops followed by sugarcane, jute, cotton, tea, barley, legumes, vegetables and fruit (MOFSC, 2002) (2058). There are differences in traditional cropping and animal husbandry systems across the country along with the variations in climatic and physiographic conditions. These traditional farming systems, which use local indigenous knowledge and experiences, have great role in maintaining the agricultural diversity in the country. Diversity of horticultural systems is another important component of agro-ecosystem, which is not well documented in Nepal.

[10] Convention on Biological Diversity 1992 (2049)

[11] National Capacity Self-Assessment For Global Environment Management, Nepal, Thematic Assessment Report: Biodiversity, Government of Nepal, Ministry of Environment, Science and Technology

Nepal harbors around three percent and one percent of the world's floral and faunal species, respectively. This includes over three percent of Angiosperms, five percent of Gymnosperms, six percent of Bryophytes, and nearly five percent of Pteridophytes. The country also holds proportionately high number of faunal species, including 181 species (4.5% of the world's total) mammals, and 861 species (9.5%) of birds, 123 species of reptiles (1.9%), 182 species of fishes (1%), 50 species of amphibians (1.2%), 661 species of butterflies (0.6%) and 3,958 (3.6%) of moths.

Over 400 species of agro-horticultural crops are believed to be found in Nepal of which 250 species of plants are believed to be currently under cultivation. Over 500 species wild relatives of cultivated flowering plants, including about 120 wild relatives of the commonly cultivated food plants, are estimated to exist in the country (Shrestha and Shrestha, 1999) (2055). The list includes at least five wild species of rice, 10 wild relatives of wheat and 38 wild relatives of grain legume. The high agricultural biodiversity (both crop and animal) of the country is largely associated with the hills and mountains (MOFSC, 2002) (2057). The country's wetlands that harbor about 25 percent of the country's biodiversity including 172 species of major wetland plants and 193 species of wetland-dependent birds are other important reservoirs of species diversity (IUCN, 1996) (2052).

The available information indicates that a broad genetic base of livestock breeds exists in the country. This includes about 24 breeds of indigenous genotypes of cattle (such as yak, lulu, kirko, achhame, lime and parkote), many indigenous breeds of goats (such as chyangra, bhyanglung, sinhal and khari) and sheep (such as bhyanglung, baruwal, dorel and kage).

The country's unique geography with rapid change in altitudinal gradient and associated variability in the eco-climatic conditions is the most important local factor contributing to the rich biological diversity in the country. Other important climatic factors influencing biodiversity and the composition of flora and fauna in the country include rainfall, winter snowfall, temperature, and aspect. Besides these local factors, the country's standing at the crossroads of two major bio-geographic regions of the world (the Indo-Malayan in the south and the Palearctic in the north) has made Nepal a mixing place of species originating in both the regions (Stainton, 1972) (2028).

A total of 399 flowering plants and 160 animal species are considered endemic to Nepal. Similarly, eight species of fish, 29 species of butterflies, nine species of amphibians, 108 species of spiders, two species of birds and one species of mammal are reported to be endemic to the country (Shrestha and Joshi, 1996) (2052). Reported endemism of higher species is relatively low as compared to invertebrates.

Several plant and animal species in the country are considered endangered, threatened, or rare. Thirty four plant species from Nepal are listed in the IUCN Red List. The list includes several valuable medicinal and aromatic plants, including Aconitum bisma, Alstonia scholaris, Ophicordyceps sinensis, Dactylorhizahatagirea, Neo-picrorhiza scrophulariifolia, Podophylum hexandrum, and Raulfia serpentina are endangered in the country (IUCN, 2006a).

A total of 59 mammals and 34 fish species are considered as threatened animals (BPP, 1995a). Similarly, an alarming proportion (i.e. 16%) of bird species of Nepal's is considered threatened and around 72 bird species are thought to be critically threatened or endangered (Baral and Inskipp, 2004). Moreover, some 56 species of mammals (31% of the total reported species), 226 species of birds (27%), 25 species of reptiles (25%), nine species

of amphibians (21%), 35 species of fishes (19%), and 142 species of butterflies (22%) are believed to be vulnerable through habitat destruction (MOFSC, 2002) (2058).

Several indigenous cattle breeds are now at risk of extinction in the country. Among them, pure siri have become extinct and lulu and achhame cattle are on the verge of extinction (Neupane and Pokhrel, 2005) (2061). At least one breed of buffalo (i.e. lime) is speculated to be endangered and two sheep breeds (lampuchhre and kage) are identified to be at risk (MOFSC, 2002) (2058).

Biological diversity in Nepal is closely linked to the people's livelihoods. Diversity of crops and animals is particularly vital to the country's marginalized mountain communities for maintaining their food security. Millions of rural people directly depend on forests for meeting their daily subsistence livelihoods requirements. Livelihoods of many ethnic groups are directly dependent on wetlands. The country's reservoirs of biodiversity including, agricultural lands, wetlands, forests, and protected areas, are also directly related to the overall economic well-being of the country.

This variety and diversity will make the task of the environmental auditor fascinating as well as challenging.

4.5.2. Main threats to biodiversity

The threat to biodiversity and their causes and consequences can be depicted in the following chart[12].

Threat to Bio-Diversity	Causes	Consequences
Habitat Loss and Fragmentation	Change in land-use and transformation caused by agriculture, urbanization, forestry, physical modification of river courses or water withdrawal from rivers, and damage to river beds due to trawling.	Decline in distribution, size, and genetic diversity of species
Invasive alien species: Bio-invasion	Introduction of (non-native) alien species (intentional and accidental dispersal by human activities)	Native species threatened or extinct through predation, competition, parasitism and hybridization
Overexploitation of resources	• Increased demand and harvesting above or near maximum sustainable levels. • Unsustainable management of ecosystem. • Illegal practices (logging, fishing, and poaching)	Collapse of fisheries and other resources

[12]Auditing Biodiversity: Guidance for Supreme Audit Institutions, INTOSAI

Pollution and Nutrient Loading	Discharge and Run-off from agriculture and industry.	• Pollutants: disease or death of aquatic populations. • Nutrient loading: algal blooms and dense flora leading to oxygen depletion and mass mortality of fish and bottom-dwelling organisms
Climate Change and Global Warming	Changes in human population, lifestyle and consumption pattern	• Changes in the distribution of species, population size, and reproduction timing or migration events and an increase in the frequency of pest and disease outbreaks. • Major episodes of coral reefs being bleached due to higher water temperatures at surface level
Illegal Trade of Species	Trade of some species for economic benefits	Many species are threatened and are on the blink of extinction
Biotechnology	Genetically modified organisms (GMO): - accidental release - cross-border trade	- Potential adverse effects of GMOs on wild species - Potential adverse effects on biodiversity if GMOs are released into the environment (for example, GMOs commingling with native species)
Agriculture and aquaculture practices	Human may use agricultural and aquaculture practices that do not respect biological diversity	Some species can be threatened
Desertification	Overgrazing, Deforestation and climatic change	Decrease ability to support biodiversity.
Biopiracy	Foreign entities using indigenous biomedical knowledge without offering compensation	Lack of incentive for the conservation and sustainable use of biodiversity resources

4.5.3. Steps for conducting biodiversity audits

A biodiversity auditor first identifies the country's bio-diversity and threats to it. Then he/she understands the government's responses to these threats and the relevant players. After that the audit topics and priorities are chosen. Finally, the audit approach: audit objectives and lines of enquiry are decided.

4.5.4. Compliance with Legal Matters governing Biodiversity issues in Nepal:

Checking the Compliance with the acts, rules and legislation relating to biodiversity issues is a major part of audit exercise. Various enactments have been made in Nepal regarding biodiversity issues, which are as follows:

Acts, Rules, Regulations and Conventions	Areas addressed
Plant Protection Act (2007) (2063)	• Prohibits import of any plant or plant parts from any country without prior approval of the government.
Soil and Water Conservation Act (1982) (2038)	• The government can declare any area as the protected watershed and specify the type of conservation activities that can be implemented in such areas.
National Trust for Nature Conservation Act (1983) (2039)	• Includes provisions for: (i) the protection, development and management of wildlife and other natural resources, (ii) making necessary arrangements for the development of national parks and wildlife reserves, and (iii) conducting scientific studies and research on wildlife and other natural resources.
Seed Act (1988) (2044)	• Relates to formulation and implementation of seed policy, regulating seed quality, approval and registration of new seeds, determining seed standards etc.
Environment Protection Act (1997) (2053) and Environment Protection Regulations (1997) (2053)	• The government can declare and maintain any place of extreme importance from viewpoint of environment protection, as an environment protection area. • Performing of EIA as a mandatory step for implementation of development projects.
Local Self-Governance Act (1999) (2055) and Local Self Governance Regulations (1999) (2055)	• Give each district council, VDC and municipality several responsibilities and authority with regard to biodiversity, forest and environment.
Bio-safety Guidelines (2005) (2061)	• GMO to be released step by step only after assessing the potential adverse effects it causes and making sure that it will not have adverse effects on human health and the environment.

Aquatic Animals Protection Act (1961) (2017) with amendment in 1998) (2054)	• Bans introduction of poison, electric current and explosives in water body for the purpose of catching or killing aquatic animals.
National Parks and Wildlife Conservation Act (1973) (2029); with four amendments) and National Parks and Wildlife Conservation Regulations (1974) (2030); with amendments)	• Basis for establishment and management of national parks and wildlife reserves for the conservation of wildlife and their habitat. • Protects and manages the sites of special scientific and environmental importance. • Identifies and lists protected plant and animal species.
Nepal Agriculture Research Council Act (1991) (2048)	• Basis for the establishment of Nepal Agriculture Research Council the main agency involved in conducting agricultural research.
Water Resources Act (1992) (2049)	• Protects of water sources from pollution.
Forest Act (1993) (2050) and Forest Regulations (1995) (2052)	• Provides for management of different categories of forests. • Strengthens Forest User Groups (FUGs) in forest management. • The government can delineate part of national forest with special scientific, environmental and cultural importance as protected forest.
Buffer Zone Management Regulations (1996) (2053) and Buffer Zone Management Guidelines (1999) (2053)	• Provides for a work plan for the management of buffer zone areas. • Provisions for buffer zone community forest. • Lists out the activities that are prohibited within the buffer zone.
CommunityForestryGuidelines (1996 (2053) with revision in 2002) (2058)	• Provides a framework and operational guideline for implementation of the Community Forestry program.
Leasehold Forestry Guidelines (2002) (2058)	• Provides a framework and operational guideline for implementation of the Leasehold Forestry Program.
Collaborative Forest Management Directives (2003) (2059)	• Provides a framework for implementation of the CFM program.

Plant Protection Convention, 1951 (2007)	• Inspects areas under cultivation and consignments of plants in international traffic for existence or outbreak of plant pests or diseases. • Issues certificates relating to the phytosanitary condition and origin of plants and plant products. • Carry out research in the field of plant protection.
Convention On Wetland of International Importance Especially as Waterfowl Habitat, 1972 (2028)	• Establishes wetland reserves, cooperates in the exchange of information and trains personnel for wetland management.
Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972 (2028)	• Provides necessary legal, scientific, administrative and financial steps to protect the natural heritage.
Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973 (2029)	• Controls the export/import of endangered species of plants and animals.
Convention On Biological Diversity, 1992 (2049)	• Conserves biodiversity, promotes the sustainable use of its components, and encourages equitable sharing of the benefits arising out of the utilization of genetic resources.
National Conservation Strategy , 1988 (2044)	• It defines policies, plans, organization and action, whereby the sustainability of natural resource may be integrated with every aspect of Nepal's social and economic development. • Its objective are to ensure the sustainable use of Nepal's natural resources, Preserve the genetic diversity of Nepal, to maintain essential ecological process and life support systems etc
National Biodiversity Strategy and Action Plan, 2014-2020 (2070-2076)	• It is aimed to provide a strategic framework for the conservation of Nepal's biodiversity. • It has been prepared to meet the national needs for managing biodiversity on a sustainable basis for the benefit of present and future generations, and also to fulfill the country's international obligations.

National Wetlands Policy, 2059 (2003)	• It was prepared in conformity with the Article 3 (1) of the Ramsar Treaty 1971 • The major objective of the policy is to involve local people in the management of Nepal's wetlands and conserve wetlands biodiversity with wise use of wetlands resources.
National Action Program on Land Degradation and Desertification , 2004 (2060)	• Identifies factors contributing to land degradation and drought • It intends to identify and implement preventive and rehabilitative measures necessary to combat land degradation, desertification and mitigate the effects of drought and alleviate poverty
Biotechnology Policy (2006) (2062)	• Encourages research and development of biotechnology contributing for developing the forests, agriculture and food sectors in an internationally competitive and environmentally sustainable manner • Reduces environmental degradation and protect natural resources and means
National Bio-safety Framework, 2007 (2063)	• It is applicable to the development, production, contained use, field test, intentional introduction into the environment, and import and export of genetically modified organism (GMO) that may have an adverse effect on the conservation and sustainable use of biological diversity, and environment taking also into account the risks to human health
National Agricultural Policy (2004) (2060)	• Envisions improving the standard of living through a sustainable agricultural development to be achieved by transforming the current subsistence oriented farming system into a commercial and competitive farming system.
Rhino Conservation Action Plan(2006-2011) (2062-2067)	• The purpose of this Action Plan is primarily to emphasis on in-situ conservation or what needs to be done to preserve the species Rhinoceros unicornis in perpetuity and reinforce the continuing recovery of rhinoceros populations in Nepal.

Agro-biodiversity Policy (2007) (2063)	• Enhances agricultural growth and ensure food security by conserving, promoting and sustainably using agro-biodiversity • Protects and promote the rights and welfare of the farming communities for their indigenous knowledge, skills and techniques • Contributes in maintaining sustainable ecological balances (ecosystems services) over time • Promotes the conservation and use of agro-biodiversity in the contexts of national seed, food quality and safety, and product marketing regulations
CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora)	• It is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

4.5.5. Performance biodiversity audit[13]

A checklist comprising of major audit themes, audit objectives and audit questions relating to biodiversity audit has been listed below. Such a list would act as guidance for the audit of biodiversity related issues:

Objective	Main Questions
Theme 1: Identification of the main threats to biodiversity of a country	
1. To assess whether the government has assessed the country's biodiversity and threats to it.	1.1 Has the government assessed the biological resources available in the country?
	1.2 Has the government identified the primary threats to each of these resources and its diversity?
Theme 2: Government's role in mitigating threats to biodiversity	
2. To assess the government's efforts in mitigating threats to biodiversity.	2.1 Has the government signed and ratified any International convention and treaty for the protection of biodiversity.
	2.2 Has the government enacted legislation and regulations for the protection of all kinds of biodiversity, especially those that are facing threats?
	2.3 Has the government introduced specific programs for the protection of biodiversity, especially those that are threatened?
	2.4 Has the government devised any economic tool and incentives to protect biodiversity?
	2.5 Has the government made it mandatory to get environmental impact assessments conducted for projects to mitigate threats to biodiversity?

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Theme 3: Allocation of responsibility and accountability	
3. Has the government allocated responsibility and accountability to agencies for protection of biodiversity.	3.1 Has the government allocated responsibility to any agency for defining environmental policies dealing with the protection of biodiversity?
	3.2 Has the government allocated responsibility to any agency for ensuring that environmental laws are being enforced by public and private entities?
	3.3 Has the government allocated responsibility to any agency for preparing environmental standards relating to biodiversity issues?
	3.4 Has the government allocated responsibility to any agency for issuing licenses to limit the volume or concentration of pollutants discharged into the environment for the purpose of protecting biodiversity?
	3.5 Has the government allocated responsibility to any agency for monitoring potential environmental damage and applying penalties when laws are violated?
Theme 4: Monitoring of government programs for the protection of biodiversity	
4. To ascertain whether monitoring and evaluation mechanism helped in effective implementation of the program.	4.1 Whether there was any system of regular and sustained monitoring of implementation of government programs for protection of biodiversity.
	4.2 Whether there was any system of reporting and accountability.
	4.3 Whether there was any system of independent (third party) evaluation of implementation of programs and whether feedback from independent evaluation was used to improve the programs.
Theme 5: Adequacy of funding and infrastructure	
5. Whether funding and infrastructure was adequate to ensure effective compliance and monitoring for government programs for the protection of biodiversity.	5.1 Were adequate funds being provided timely to concerned agencies for implementing government programs for protection of biodiversity?
	5.2 Whether need assessment for manpower to implement and monitor programs for protection of biodiversity has been made and has the manpower been deployed effectively.

Annex 1

National and International agencies engaged in environmental protection

National agencies engaged in environment protection in Nepal are as follows:

1.1. Ministry of Science, Technology and Environment (MOSTE)

The MOSTE is the apex body of governing the environmental matters. The main functions of the Ministry are:-

- Formulation and implementation of policies, plans and programmers pertaining to science, technology and environment;
- Study, research, survey, training and national as well as international seminars and conferences on environment;
- Liaison and coordination with national and international organizations pertaining to environment;
- Pollution control, environmental conservation and balance;
- Publication and dissemination, among others, relating to environment;
- Regular and periodic evaluation and review of environment programs implemented by governmental organizations;
- Development of human resources pertaining to environment.

The ministry functions through various departments/ offices under it. Some of the departments engaged in environmental matters are as follows:

1.1.1. Department of Hydrology and Meteorology

The Department has a mandate from Government of Nepal to monitor all the hydrological and meteorological activities in Nepal. No agency is entitled to carry out such activities without a proper liaison with DHM. The scope of work includes the monitoring of river hydrology, climate, agro-meteorology, sediment, air quality, water quality, limnology, snow hydrology, glaciology, and wind and solar energy. General and aviation weather forecasts are the regular services provided by DHM. As a member of the World Meteorological Organization (WMO), DHM contributes to the global exchange of meteorological data on a regular basis.

1.1.2. Department of Environment

The Department has been established with the objective of

- Providing technical assistance to the Ministry while formulating the rules, regulations, guidelines and standards.
- Planning, implementation and monitoring of the environmental related activities as per the rules, regulations and standards set out by the Ministry and under the provision of the Government of Nepal.
- Enforcement of the environmental activities as specified in the Environmental Rules

(2053) (1996) and Environmental Regulation (2054) (1997).

- Implementation of the activities related to climate change adaption in different sectors including agriculture, forestry and related fields.
- Creating conducive environment to different stakeholders while conducting environment related activities in a coordinated manner.
- Implementing activities in compliance to the treaties and commitments as expressed in different conventions and ratified by the Government of Nepal.
- Conducting activities in harmony with the Stockholm convention, Basel convention, Rotterdam convention, Montreal protocol.
- Carrying out monitoring at the industrial corridors, hospitals, factories and similar agencies, hazardous chemical pesticides and recommend for the punishment to the defaulters if any under the provision made by the Environment Rules, Regulations, Standards and Act.
- Conducting environmental auditing for making understandable to the public about the environmental effects as created by industries, hydropower and companies and agencies.
- Monitoring the quality of air, water, soils by enforcement of the brick kiln, vehicles, plastic factories, industries, persistent organic pollutants (PoPs) etc and enforce for their implementation.
- Launching environmental awareness and improvement program.
- Developing environmental statistics, climatology information and distribution system.
- Launching climate change adaptation and mitigation programs and involving in technology generation, capacity building and technology delivery program.
- Launching environmental management program jointly with various counterparts of the Government and non-Governmental organizations such as INGOs, NGOs, social development organizations etc.
- Providing environmental laboratory facilities and data base in the country.
- Enhancing the compliance monitoring in the environmental administration.

1.1.3. Alternative Energy Promotion Centre (AEPC)

It is an institution recognized as a regional/international example of promoting large-scale use of renewable energy sustainable and a national focal point for resource mobilization. The objectives of AEPC are as follows:

- To popularize and promote the use of alternative/renewable energy technology.
- To raise the living standard of the rural people.

- To protect the environment.
- To develop the commercially viable alternative energy industries in the country.

1.1.4. Nepal Academy of Science and Technology (NAST)

NAST is an autonomous apex body established in 1982 to promote science and technology in the country. The Academy is entrusted with four major objectives: advancement of science and technology for all-round development of the nation; preservation and further modernization of indigenous technologies; promotion of research in science and technology; and identification and facilitation of appropriate technology transfer.

1.1.5. Climate Change Council

It is a high level coordinating body under the Chairmanship of the Right Honorable Prime Minister. It will

- Provide coordination, guidance and direction for the formulation and implementation of climate change-related policies;
- Provide guidance for the integration of climate change-related aspects in the long-term policies, perspective plans and programmes;
- Take necessary measures to make climate change a national development agenda;
- Initiate and coordinate activities related to additional financial and technical support to climate change-related programme and projects; and
- Also initiate and coordinate for additional benefit from climate change-related international negotiations and decisions

1.1.6. Environment Protection Council

It has been constituted to provide policy guidance and suggestion to Government of Nepal with regard to environment protection, and also to have coordination among different agencies. It is chaired by the Rt. Honorable Prime Minister.

1.1.7. Multi-sectoral Climate Change Initiatives Coordination Committee (MCCICC)

MCCICC is the key national platform for ensuring regular dialogue and consultations on climate change related policies, plans, finance, programmes /projects, and activities. The committee will:

- Establish and /or improve communication mechanism amongst institutions concerned with and working in the field of climate change;
- Coordinate climate change responses at programmatic level to foster synergy and avoid duplication of efforts, and optimize benefits from existing programs, and coordinate activities related to policies, plans, strategies, financing programmes and projects;
- Provide inputs for developing consensus on climate related issues under international climate change negotiation; and

- Provide inputs for financing in order to effectively implement, monitor and evaluate the adaptation actions including those identified in the NAPA (Nation Adaptation Programme of Action) process

1.1.8. Ministry of Forest and Soil Conservation (MOFSC)

'Hario Ban, Nepal Ko Dhan' (Green Forest are the wealth of Nepal) is an adage that signifies the importance forests and trees were given by the Nepalese people.

MOFSC has the mandate to oversee one of the important components of environment, namely forests and soil. It has a wide mandate of formulation, implementation, monitoring and evaluation of forest and soil conservation policy, plan and programmes. It is concerned with the conservation, utilization, promotion and management of forest and forest products. It is also engaged in conservation, utilization, and distribution of benefit of the forest, vegetation, wildlife, bio-diversity, and protection of eco-system. It is also concerned with the following:

- Matters relating to National Parks, wildlife protection, hunting reserve, conservation area, buffer zone area, wetland and pasture area.
- Management of elephant camp and zoo.
- Conservation, promotion, development, co-ordination and management on the matters relating to soil and watershed conservation area, greater watershed area and lakes and water reservoir.
- Protection and balance of eco-system (natural environment).
- Policy relating to plants and herbs and study, research, communication, survey, collection, promotion, processing, production and utilization and professionalization of plants and herbs.
- Botanical gardens and herbal industry.
- Plants, wildlife and bio-diversity museum.
- Exhibition, publication and communication relating to forest, plants, wildlife, bio-diversity, and climate change relating to forest, watershed and soil-conservation.
- Implementation of international treaty and agreement relating to forest, plants, wildlife, watershed and soil conservation.
- Liaison and co-ordination with National and international organizations relating to forest, plants, wildlife, watershed and soil conservation.
- Nature conservation.
- Plantation by the government, public and private sector forest development and management.
- Operation of Nepal Forest Service

The Ministry discharges its functions through the following departments:

1.1.8.1. Department of Forests (DoF)

The main function of DoF is to manage the country's forest resources for the conservation of the natural environment. It is also entrusted for protection, management and utilization of forests and conservation of natural resources. It also increases people's participation in forest management; particularly in plantation and resource conservation in forests. It is also concerned with improvement of the livelihood of the community through implementation of effective forestry programs.

1.1.8.2. Department of Forest Research and Survey (DFRS)

DFRS is mandated to conduct forestry research and survey to produce knowledge and information for sustainable management and utilization of forest resources of Nepal. The department works in close collaboration with various national stakeholders and international agencies. The department has three divisions: Forest Research Division, Forest Survey Division, and Remote Sensing and Planning Division.

1.1.8.3. Forest Research Division

It is responsible for developing and demonstrating appropriate technologies related to natural and manmade forest management, determining forest growth to maximize forest productivity, and identifying suitable tree species for different site conditions.

1.1.8.4. Forest Survey Division

It generates valuable statistics and information necessary to plan overall forestry development at national, regional and district levels.

1.1.8.5. Remote Sensing and Planning Division

It is responsible for acquiring remote sensing data to generate useful products for conducting forest inventory and mapping.

1.1.8.6. Department of Soil Conservation and Watershed Management (DSCWM)

DSCWM assists in maintaining ecological balance by reducing pressure from natural hazards such as floods, landslides and soil erosion through conservation and development of important watersheds of the country. It also aims to maintain land productivity, reduce soil erosion and contribute in development infrastructure protection by scientific management of watersheds.

1.1.8.7. Department of Plant Resources (DPR)

DPR is a multidisciplinary organization comprising mainly of botanists, chemists and pharmacists. It is mandated to conduct resource survey and collection of plant materials and preservation of the specimens in the National Herbarium and Plant Laboratories and maintenance of Botanical Gardens in various parts of the country. It also conducts chemical and biological researches for the utilization of medicinal, aromatic and other valuable plants. It also disseminates information through publications on various aspects of Nepalese plant resources. It is also involved in bio-prospecting of plants of economic value.

1.1.8.8. Department of National Parks and Wildlife Conservation

The overall goal of the Department is to conserve and manage the rich and diverse biological diversity of Nepal with much emphasis on wildlife and protected areas. The primary objectives of the Department are to conserve the country's major representative ecosystems, unique natural and cultural heritage, and give protection to the valuable and endangered wildlife species. It also encourages scientific research for the preservation of wild genetic diversity.

1.1.9. Ministry of Agriculture Development

Agriculture and Environment are intricately linked. One of the major arms of GoN concerned with agriculture is the Ministry of Agriculture Development (MOAD). It has far-ranging mandate covering policy matters, research, development and promotion of cash crops, agricultural engineering, agro nursery, agricultural communication, animal husbandry, cattle breeding cattle food, pasture land, veterinary science, bee keeping, sericulture, carbonic, organic and chemical fertilizers, quarantine determination of quality of breed, food security, agro-environment and pesticide management, organic farming and organic authentication etc.

1.1.9.1. Department of Agriculture (DoA)

The DoA has been entrusted with to support and help achieve food security and poverty alleviation by the transformation of agriculture through diversification and commercialization. It also strikes balance between agricultural development and conservation.

1.1.9.2. Department of Livestock Production

It works as technical authority in the field of livestock production, pasture and animal feed development and livestock quality management.

1.1.9.3. Department of Livestock Services

The Department was established with the objective of improving livestock production and productivity and to eliminate the problem of malnutrition.

1.1.9.4. Directorate of Animal Health

It is the national focal point of Veterinary Services in Nepal and it works as a National Veterinary Authority representing Government of Nepal, Ministry of Agriculture Development, and Department of Livestock Services. It also extends disease control services for security and conservation of livestock and public health. It also assists in the production of livestock and products which are exportable and import substitutable. It also identifies, conserves, promotes and develops the indigenous livestock breed which are about to be extinct.

1.1.9.5. Vegetable Development Directorate

Vegetable Development Directorate serves as a vegetable sub-sector focal point for national and international level institute of related fields. It helps Department of Agriculture and Ministry of Agricultural Development in formulating national policy, strategy, periodic plan and annual program. It also prepares guidelines for the implementation of program. It supervises and monitors the district level vegetable program and gives technical backstops to the districts and resource centers in solving their problems especially in

technical aspects. It also maintains the necessary information required for vegetable sub sector and also maintains national level data base of vegetable sub-sector.

1.1.9.6. Nepal Agricultural Research Council (NARC)

NARC is an autonomous organization under "Nepal Agricultural Research Council Act1991 (2048) " to conduct agricultural research in the country to uplift the economic level of the people.

Crop Development Directorate focuses on optimum use of available resources to increase production and productivity of cereals, pulses, oilseeds and industrial crops by increasing cropping intensity and diversification. National Industrial Crop Development Program and Regional Seed Testing Laboratories in five development regions work under this directorate.

1.1.9.7. Agribusiness Promotion and Marketing Development Directorate

It is entrusted with carrying out various activities relating to agribusiness promotion and marketing of agricultural products.

1.1.9.8. Plant Protection Directorate

The Directorate is responsible for national level programme - the Office of the Registrar of Pesticides, the Plant Quarantine Programme and Regional Plant Protection Laboratories for implementation of the programme. It also coordinates with Pesticide Registration and Management Unit.

1.1.9.9. Post Harvest Management Directorate

It is responsible for post harvest technology generation, verification, improvements, dissemination and adoption.

1.1.9.10. Seed Quality Control Service Centre

It is an autonomous body under MOAD. Its objective is to ensure the availability of quality seed by enforcing the quality control mechanisms to the farmers, to increase the income of farmers through seed production and distribution in the national as well as in the international markets, to substitute import of seed from abroad and to assure supply of quality seed in the market

1.1.10. Office of the Prime Minister and Council of Ministers

The office is mandated to provide up-to-date information of disaster management and issue direction thereto. It is also involved in the operation of Prime-minister Natural Disaster/ Assistance Fund Operation.

1.1.11. Ministry of Energy

One of the major functions of Ministry of Energy is formulation, implementation, monitoring and evaluation of policy, plan and programmes relating to the energy production, management, use, safety, promotion and development. It is also concerned with business relating to Water and its utilization and energy which do not fall under the other ministries.

1.1.12. Ministry of Home Affairs

The Ministry of Home Affairs is the apex body in relation to disaster management in Nepal. The ministry has a separate Disaster Management Division. The Division functions through Disaster Research and Study Section, Disaster Risk Reduction and Recovering Section and National Emergency Operation Center. The Chief District Officers, under the Ministry of Home Affairs, act as the crisis managers at the time of natural disasters.

1.1.13. Ministry of Defense

The Nepalese Army under the Ministry of Defense is also involved in development activities and co-operation in rescue operations. It is also mandated for protection of national parks and preservation of wildlife.

1.1.14. Ministry of Culture, Tourism and Civil Aviation

The ministry works in the area of formulation, implementation, monitoring and evaluation of the policy, plan and programmes relating to culture, tourism and air transportation development.

1.1.15. Civil Aviation Authority of Nepal (CAAN)

CAAN is an autonomous regulatory body set up under the Civil Aviation Act, 1996 (2053). Its prime goal is to ensure flight safety and sustainability of civil aviation.

1.1.16. Ministry of Urban Development

The ministry has a broad mandate including management of drinking water, sanitation and drainage. Formulation and implementation of policy plan and programmes relating to urbanization, urban land utilization and urban development is also a function of the ministry.

1.1.17. Rural Water Supply and Sanitation Fund Development Board (RWSSFDB)

RWSSFDB was established to promote sustainable and cost effective demand-led rural water supply and sanitation services in facilitation of Non-governmental and Private Organizations with full emphasis on community ownership in conformity with the Government's Plan.

1.1.18. Kathmandu Upatyaka Khanepani Limited (KUKL)

KUKL is responsible for the operation and management of water and wastewater services in the Kathmandu Valley. It operates the water supply and wastewater services under a License and Lease Agreement with the Kathmandu Valley Water Supply Management Board 30 years.

Town Development Fund

TDF supports Municipalities, Water Users and Sanitation Committees of Second Small Towns Water Supply and Sanitation Sector Project, Hospital and Health Centers through long term financing on social infrastructure and income generating Projects in the form of Loan, soft loan and grant within strict financial rule and regulations.

1.1.19. High Power Committee for Integrated Development of Bagmati Civilization

The main objective of this High powered Committee is to keep Bagmati River and its tributaries clean by preventing the direct discharge of solid and liquid wastes to the river and to conserve the river system within the Kathmandu.

1.1.20. Solid Waste Management Technical Support Center

It is established under the Solid Waste Management Act (SWMA) 2011 (2068. It is responsible to provide technical support to local bodies and carry out studies, research & development in SWM sector. It assists the local bodies for sustainable SWM, improve public health and environment through technical assistance, research and development. It is a national body headed by Solid Waste Management Council of which chairperson is the Minister of Urban Development.

1.1.21. Ministry of Irrigation

The mandate of the Ministry of Irrigation is formulation, implementation, monitoring and evaluation of policy, plan and programmes relating to development, protection, management, control and utilization of irrigation sector. It is also involved in flood and stream/river control. It also conducts study, research, survey and implementation of activities relating to water resources.

1.1.22. Department of Water Induced Disaster Prevention

The Department works in the area of minimizing human casualties and damages of infrastructures due to water induced disasters by the appropriate management and conservation of rivers and river basins of Nepal. It is also involved in emergency works, point control works and long-term mitigation works through the preparation of master plans that are implemented against the water-induced disasters such as floods, landslides & debris flows under this activity.

1.2. International organization involved in environment sector in Nepal

Environment has become an global issue. Environmental auditors must be abreast with international bodies dealing with environment also. Some of these are as follows:

1.2.1. United Nation and specialized agencies

The United Nations is an international organization founded in 1945 (2002). The UN Family are also concerned with matters relating to sustainable development, delivering humanitarian aid etc. Some of the bodies/ agencies in the UN Family are as follows:

1.2.2. United Nations Development Programme (UNDP)

UNDP is a global organization that focuses on sustainable development, democratic governance and peace building and climate and disaster resilience. It is also actively involved in Nepal.

1.2.3. United Nations Environment Programme

The United Nations Environment Programme (UNEP) is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation

of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment.

UNEP has 7 cross cutting thematic priorities

- Climate Change
- Disaster and Conflicts
- Ecosystem Management
- Environmental Governance
- Chemical and Wastes
- Resource Efficiency
- Environment Under Review

1.2.4. United Nations Human Settlements Programme

UN-Habitat is a United Nations agency working towards a better urban future. Its mission is to promote socially and environmentally sustainable human settlements development and the achievement of adequate shelter for all.

1.2.5. World Bank Group

The World Bank Group consists of five affiliates working in poverty reduction through an inclusive and sustainable globalization. The World Bank Group agencies are as follows:

- International Bank for Reconstruction and Development
- International Finance Corporation
- International Development
- International Centre for Settlement of Investment
- Multilateral Investment Guarantee Agency

1.2.6. Food and Agriculture Organization (FAO)

The main effort of FAO is food security for all. This is to be achieved through the goals of: the eradication of hunger, food insecurity and malnutrition; the elimination of poverty and the driving forward of economic and social progress for all; and, the sustainable management and utilization of natural resources, including land, water, air, climate and genetic resources for the benefit of present and future generations.

1.2.7. World Meteorological Organization (WMO)

WMO is a UN agency and is its authoritative voice for meteorology (weather and climate), operational hydrology and related geophysical sciences.

1.2.8. United Nations Industrial Development Organization (UNIDO)

The primary objective of UNIDO is the promotion and acceleration of industrial development in developing countries. One of the thematic areas of UNIDO is energy and environment.

1.2.9. United Nations Office for Disaster Reduction (UNISDR)

UNISDR serves as the focal point in the United Nations system for the coordination of disaster reduction and to ensure synergies among the disaster reduction activities of the United Nations system and regional organizations and activities in socio-economic and humanitarian fields.

1.2.10. United Nations Commission on Sustainable Development

The United Nations Commission on Sustainable Development (CSD) was established by the UN General Assembly in December 1992 (2049) to ensure effective follow-up of United Nations Conference on Environment and Development (UNCED). Its role is to elaborate policy guidance and options for future activities, to achieve sustainable development and to promote dialogue and build partnerships for sustainable development with governments.

1.2.11. World Wide Fund for Nature (WWF)

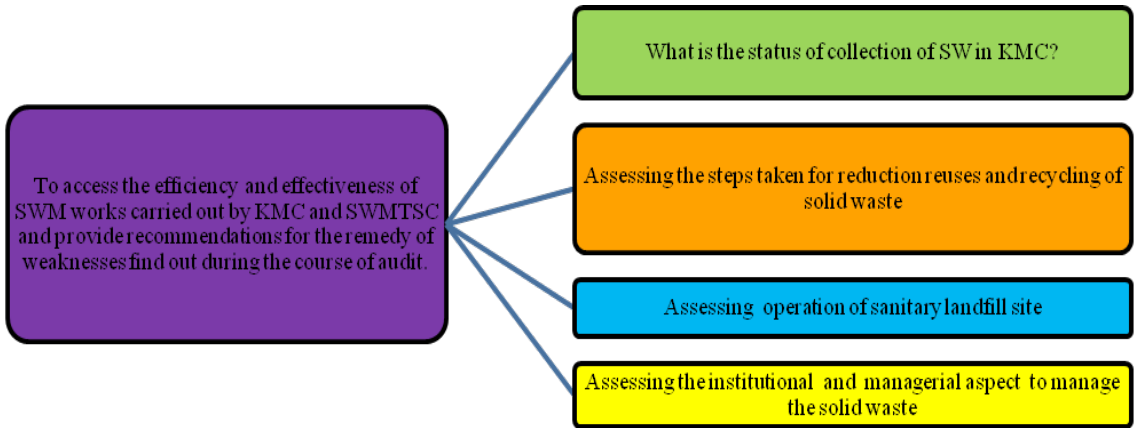
WWF is an international agency working in the field of conservation of wildlife. It organizes its work around six key areas: forests, marine, freshwater, wildlife, food and climate.

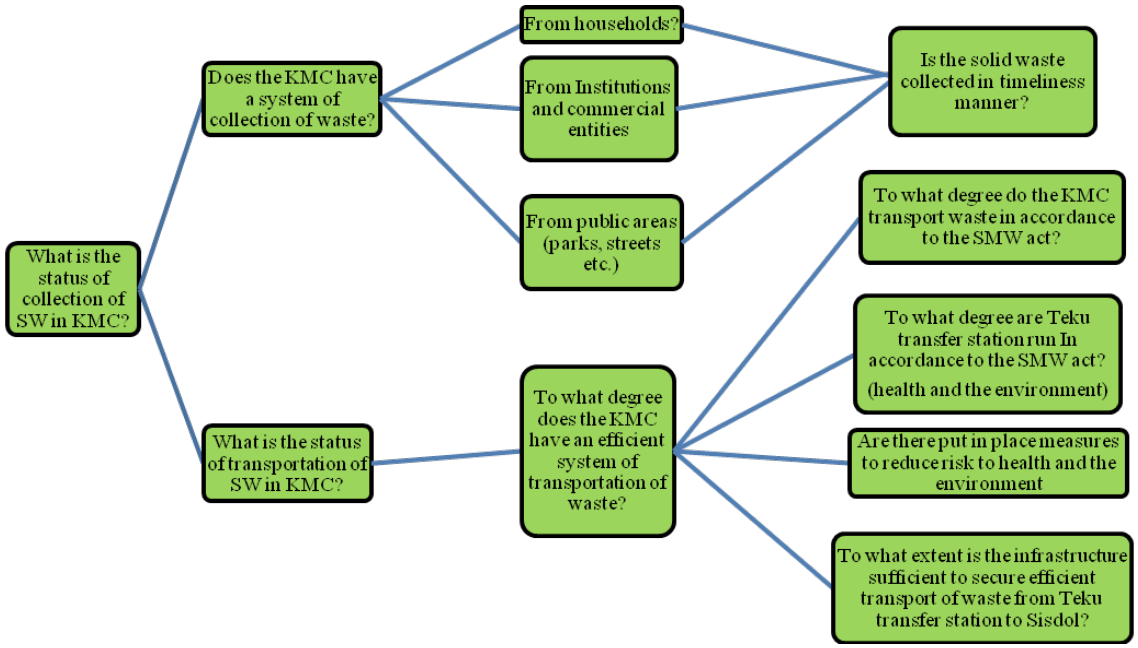
1.2.12. International Union for Conservation of Nature (IUCN)

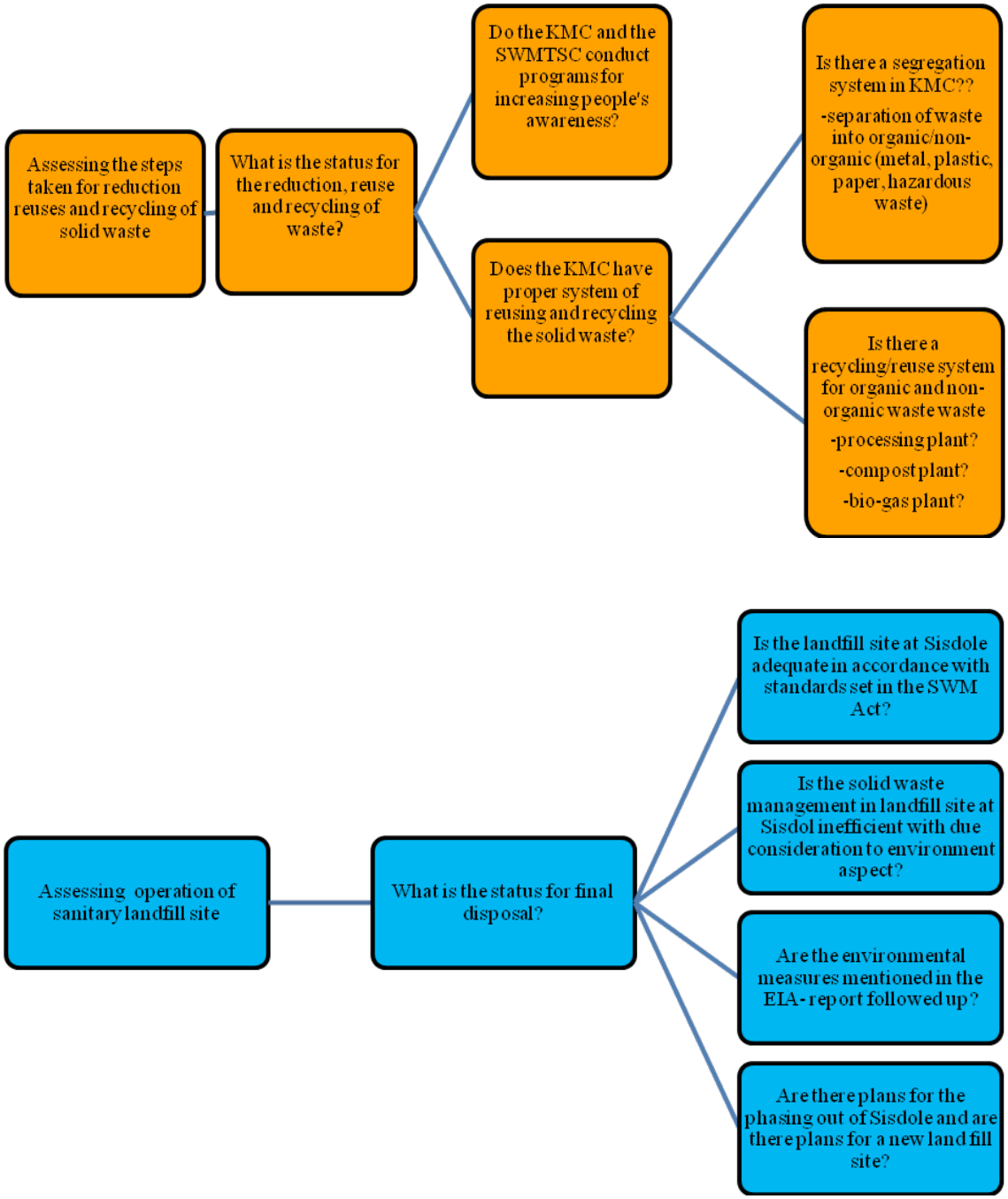
IUCN's work focuses on valuing and conserving nature, ensuring effective and equitable governance of its use, and deploying nature-based solutions to global challenges in climate, food and development. Conserving biodiversity is central to the mission of IUCN.

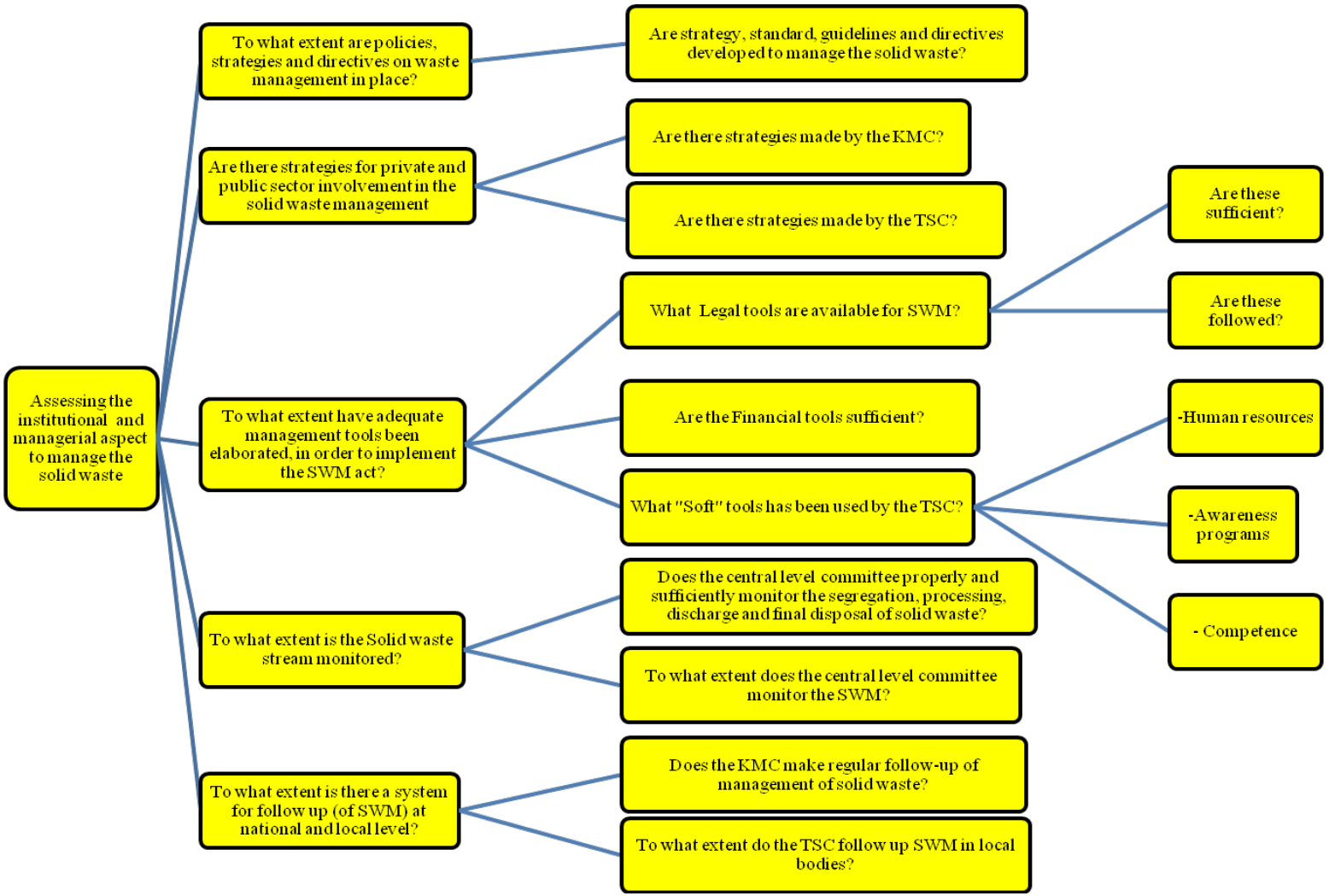
Question Tree:

Question tree related to audit by OAGN to assess the efficiency and effectiveness of SWM works carried out by KMC and SWMTSC






Assessing the steps taken for reduction reuses and recycling of solid waste
What is the status for the reduction, reuse and recycling of waste?
Do the KMC and the SWMTSC conduct programs for increasing people's awareness?
Does the KMC have proper system of reusing and recycling the solid waste?
Is there a segregation system in KMC??
-separation of waste into organic/non-organic (metal, plastic, paper, hazardous waste)
Is there a recycling/reuse system for organic and non-organic waste waste
-processing plant?
-compost plant?
-bio-gas plant?
Assessing operation of sanitary landfill site
What is the status for final disposal?
Is the landfill site at Sisdole adequate in accordance with standards set in the SWM Act?
Is the solid waste management in landfill site at Sisdol inefficient with due consideration to environment aspect?
Are the environmental measures mentioned in the EIA- report followed up?
Are there plans for the phasing out of Sisdole and are there plans for a new land fill site?


Assessing the institutional and managerial aspect to manage the solid waste
To what extent are policies, strategies and directives on waste management in place?
Are strategy, standard, guidelines and directives developed to manage the solid waste?
Are there strategies for private and public sector involvement in the solid waste management
Are there strategies made by the KMC?
Are there strategies made by the TSC?
To what extent have adequate management tools been elaborated, in order to implement the SWM act?
What Legal tools are available for SWM?
Are these sufficient?
Are these followed?
Are the Financial tools sufficient?
What "Soft" tools has been used by the TSC?
-Human resources
-Awareness programs
- Competence
To what extent is the Solid waste stream monitored?
Does the central level committee properly and sufficiently monitor the segregation, processing, discharge and final disposal of solid waste?
To what extent does the central level committee monitor the SWM?
To what extent is there a system for follow up (of SWM) at national and local level?
Does the KMC make regular follow-up of management of solid waste?
To what extent do the TSC follow up SWM in local bodies?

Annex 3

Audit Design Matrix

Audit objective: To access the efficiency and effectiveness of SWM works carried out by KMC and SWMTSC and provide commendations for the remedy of weaknesses find out during the course of audit.

Researchable Question (s) (RQ)	Sub Researchable Question (s) (SRQ)	Sub sub questions (SsRQ)	Audit Criteria	Audit Evidence (information Required and Sources)	Audit Methodology	Limitation	What This Analysis Will Likely Allow Auditors to Say
1	2	3	4	5	6	7	8
What is the status of SWM in KMC?	What is the status of collection of SWM in KMC?	Does the KMC have a system of collection of waste? -from households? -from Institutions and commercial entities - from public areas (parks, streets etc.)	The local body (KMC) shall be responsible for the management of solid waste by construction and operation of infrastructure like transfer station, landfill site, processing plant, compost plant, biogas-plant and also collection of waste, final disposal and processing. (3.1)	**Evidence:** Types of existing collection service, Number of collection centre, Transfer centre, landfill site and other processing plants e.g., compost plant, biogas plant etc, collection coverage and frequency. **Sources:** The KMC &SWMTSC. **Other evidences** Field visit report Photos Interview Entry and exit meeting papers? Other published documents.	Collection of data and information, verification, comparison, analysis are the main methodologies we will apply. For that purpose we will use interview, questionnaire and field visit as and when required.	Unavailability of core data and information is the limitation because the concerned entity may reluctant to give such data and information.	Through the analysis of available data and information we will able to get findings in relation to the SQ and SRQ. In this way we will also able to give some suggestions for improvement.

	What is the status of transportation of SWM in KMC?	To what degree do the KMC have efficient system of transportation of waste?	The liability for transportation of solid waste from the collection centre up to the transfer centre or solid waste management site, shall lie on the Local Body or any organization or body arranged by the Local Body.	**Evidence:** Number and types of vehicle. **Sources:** The KMC & field observation.	Do	Do	Do
		To what degree do the KMC transport waste in accordance to the SMW act?	SMW act 9 "transportation of waste"				
	To what degree are Teku transfer station run In accordance to the SMW act?	Are there put in place measures to reduce risk to health and the environment?	The KMC may fix any location as a transfer centre to manage the solid waste taking into cognizance that the environment and public health shall not be adversely affected. (11.1,2)	Interview with KMC. Relevant statistics. Observation of Teku.	Do	Do	Do
		To what extent is the infrastructure sufficient to secure efficient transport of waste for final disposal ?	The local body shall, for the transportation of solid waste, utilize vehicles having following facilities a. Solid waste should not be visible, should not fall out and no seepage of liquid materials, b. No leach and odor coming out of the solid waste, c. Solid waste can be easily loaded and unloaded, d. Conducive to the road capacity and condition. (Rule 7)	**Evidence:** Number and types of vehicle and condition of road. **Sources:** The KMC & site visit.	Questionnaire and site visit	Non-responding the questionnaire	The road to Sisdale is often closed during the moonsone due to landslide, which hinders effective SWM.

	What is the status for the reduction, reuse and recycling of waste?						Waste as a resource is not exploited
		Do the KMC and the SWMTSC conduct programs for increasing people's awareness?	1. The Local Body (KMC) shall conduct programs for increasing people's awareness in applying appropriate technology for making segregation through reduction of generation of solid waste at its source and management. (rule 3.3) 2. The KMC may, take necessary steps to encourage the reduction, re-use and recycling use of solid waste, by issuing necessary directives for its effective implementation(10.1). 3. The KMC may coordinate with the concerned industry in the works to encourage the reduction of quantity of solid waste by making re-use of material used for packing industrial products. (10.2)	1. **Evidence:** Number of programs conducted. **Sources:** The SWMTSC & KMC.	Interview with, and information from the SWMTSC and KMC	Potential findings will be inefficient if waste are not segregated later in the wastestream.	People do not know about the importance of segregation of waste.

		Is there a segregation system? -separation of waste into organic/ non-organic (metal, plastic,paper, hazardous waste)	SWM act 6		Interview with KMC, observation at Teku and Sisdole.		Waste is not segregated, waste as a potential resource is lost.
		Is there a recycling/ reuse system for organic and non-organic waste waste -processing plant? -compost plant? -bio-gas plant?	The local body (KMC) shall be responsible for the management of solid waste by construction and operation of processing plant, compost plant, bio-gas plant. 3.1	**Evidence:** Number of processing plant. **Sources:** The KMC.	Interview with KMC and SWMTSC.		Waste is not segregated, waste as a potential resource is lost.

	What is the status for final disposal?	Is the landfill site at Sisdole operating in accordance with standards set in the SWM Act?	The local body shall, make operation of the Sanitary Landfill Site by following the below mentioned matters: 1. Measures to reduce the adverse effect on environment that might be caused by factors like leach, gas and odor coming out during the operation of Sanitary Landfill Site. (Rule 8.1a) 2. Possible charges that might come in geographical condition of the Sanitary Landfill Site, and measures for its management. (Rule 8.1b) 3. The possible economic, social, physical and biological effect that might affect the population around the Sanitary Landfill Site, and measures for its management. (Rule 8.1c) 4. Provisions on the opportunity to be created from the operation of the Sanitary Landfill Site and its utmost utilization. (Rule 8.1d) 5. Issues concerning the stoppage of road movement during the time of operation of the Sanitary Landfill Site and the awareness to be created. (Rule 8.1)	**Evidence:** Arrangement and condition of the Sanitary Landfill Site. **Sources:** The KMC, SWMTSC & field visit/ observation.	Interview and information from SWMTSC and KMC observations at Sisdole		That Sisdole is not a sanitized landfill site. Causing risk to health and environment.

		Are the environmental measures mentioned in the EIA- report followed up?	The following mitigation measures have been mentioned in EIA report: 1. Construction of leachate liner, leachate collection and treatment facilities. 2. Construction of peripheral drainage to divert into landfill site. 3. Prohibition on the discharge of untreated leachate generated from landfill to Kolpu Khola. 4. Restriction of littering of wastes at landfill site. 5. Construction of gas venting facilities from the landfill site in such a way that the generated gas is released from the gas venting facilities and burned. 6. Fencing of landfill site to restrict entry of animals and human within the landfill site. 7. All waste transported at the landfill site for disposal shall be spread and compacted over site and be covered with a soil layer in the same day of waste transportation. 8. Plantation on the open space of the site. 9. Full control of littering of waste during transportation.	**Evidence:** Photographs of landfill site and affected peoples' version. **Sources:** The KMC, SWMTSC & field visit.	Interview and information from SWMTSC and KMC. Observations at Sisdole. Input from locals living near the landfill.		That Sisdole is not a sanitized landfill site. Causing risk to health and environment.
		Are there plans for the phasing out of Sisdole and are there plans for a new land fill site?	The local body shall, make operation of the Sanitary Landfill Site by following the below mentioned matters: SWM act 12		Interview and information from SWMTSC and KMC. Observations at Sisdole.		That the capacity at Sisdole will be reached before the new landfill site are in operation.