



REPUBLIC OF SIERRA LEONE

National Inventory Report on Obsolete Pesticides and Associated Wastes



Project GEF/UNEP/BSCRC/Green Cross Project - GEF ID: 3969
«Capacity Building and Technical Assistance to Least Developed Countries (LDCs) and Small Island Developing States (SIDS) in the Implementation of National Implementation Plans (NIP) of the Stockholm Convention in the West African (ECOWAS) and Central African Sub-Regions»

December, 2017



Table of Contents

| | |
|--------------------------------------------------------------------------------------------------------|----|
| Table of Contents | 2 |
| List of photos | 5 |
| List of Figures..... | 6 |
| List of Abbreviations | 7 |
| ACKNOWLEDGEMENTS..... | 8 |
| Executive Summary | 9 |
| 1. Introduction | 12 |
| 1.1 The General Context | 12 |
| 1.2 Background Information on Pesticides | 12 |
| 1.3 The Pesticides National Inventory | 13 |
| 1.4 Importance of the Project | 14 |
| 1.5 Inventory Contacts | 15 |
| 1.6 The Report Structure | 16 |
| 2. Use of Agrochemicals in Sierra Leone | 16 |
| 3. Health and Socio-economic impact of Pesticides | 16 |
| 4. Persistent Organic Pesticides Remediation/Treatment Technologies | 17 |
| 5. Legal and Institutional Framework on Pesticide Management | 17 |
| 5.1 Legal Framework | 17 |
| 5.1.1 International and regional context | 17 |
| 5.1.2 Conventions | 17 |
| 5.1.3 Regional | 18 |
| 5.1.4 National | 18 |
| 5.2 Institutional context | 20 |
| 5.2.1 Ministry of Agriculture Forestry and Food Security (MAFFS) | 20 |
| 5.2.2 Environment Protection Agency Sierra Leone | 21 |
| 5.2.3 National Protected Area Authority | 21 |
| 5.2.4 Ministry of Health and Sanitation | 21 |
| 5.2.5 Ministry of Fisheries and Marine Resources (MFMR) | 21 |
| 5.2.6 Customs and Excise Department (CED) of the National Revenue Authority (NRA) | 22 |
| 5.2.7 Ministry of Trade and Industry | 22 |
| 5.2.8 Roles of Local and private sector, academic and other non-governmental institutions | 22 |
| 6. Work Methodology | 24 |

| | | |
|--------------|-----------------------------------------------------------------------------|-----------|
| 6.1 | Objective..... | 24 |
| 6.2 | Specific objectives..... | 24 |
| 6.3 | Expected results..... | 24 |
| 6.4 | Conduct of Mission..... | 25 |
| 6.5 | Work Plan..... | 26 |
| 6.6 | Equipment and Materials..... | 27 |
| 6.7 | Methodology..... | 27 |
| 7. | Results and Discussion..... | 29 |
| 7.1 | Summary of Obsolete pesticides inventory per Province..... | 29 |
| 7.2 | Quantity of stockpile of obsoletes pesticides per district..... | 30 |
| 7.3 | Summary of associated waste inventory..... | 31 |
| 7.4 | Obsolete Pesticides and Empty Container..... | 31 |
| 7.5 | National Obsolete Pesticide and Associated waste Distribution..... | 33 |
| 7.6 | Photos of Obsolete Pesticides and Associated waste..... | 37 |
| 7.7 | Photos of warehouse of Obsolete Pesticides and Associated waste..... | 41 |
| 7.7.1 | Western Area..... | 41 |
| 7.7.2 | Northern Province..... | 42 |
| 7.7.3 | Eastern Province..... | 43 |
| 7.7.4 | Southern Province..... | 44 |
| 8. | Challenges..... | 45 |
| 9. | Limitations of The study..... | 46 |
| 10. | Recommendations..... | 46 |
| 11. | Conclusion..... | 47 |
| 12. | Annexes..... | 48 |

List of Tables

- Table 001:** Showing names of contacts in various sites visited
Table 004: Showing suspected sites for obsolete pesticides and associated waste
Table 005: Inventory schedule
Table 006: Showing national summary of obsolete pesticides
Table 007: Showing quantity of Stockpiles at district level
Table 008: Qualitative representation of associated wastes
Table 009: National Inventory of obsolete Pesticides and Associated Wastes (GPS Coordinates)
Table 010: National obsolete pesticide and associated waste distribution
Table 011: Showing inventory results from the Southern Province
Table 012: Showing inventory results from the Western Area
Table 013: Showing inventory results from Bombali District
Table 014: Showing inventory results from Tonkolili District
Table 015: Showing inventory results from Koinadugu District
Table 016: Showing inventory results from Port Loko District
Table 017: Showing inventory results from Kenema District
Table 018: Showing inventory results from Kono District
Table 019: Showing inventory results from Kailahun District

List of photos

- Photo 001.01:** Propanil 365 EC / Kissy MAFFS Store
Photo 001.02: Green Muscle/MAFFS Pujehun
Photo 001.03: Chloropyrifos 480 EC/MAFFS Bo
Photo 001.04: Difenconazole 250 SC/MAFFS Bombali
Photo 001.05: Butachlor/ MAFFS Bonthe
Photo 001.06 : Yupericide/MAFFS Port Loko
Photo 001.07: Oxadiazon 250 EC/MAFFS Kissy store
Photo 001.08: Diazinon 60 EC/MoHS Store
Photo 001.09: Carbaryl 50 WP/MAFFS Bo
Photo 001.010: Glyphosate/MAFFS Bo
Photo 001.011: Propiconazole 250 EC/ MAFFS Bombali
Photo 001.012: Atrazine 500 SC/MAFFS Bonthe
Photo 001.013: Round-All (Koola)/MAFFS Bonthe
Photo 001.014: Methomyl/MAFFS Bombali
Photo 001.015: Mancozane/MAFFS Pujehun
Photo 001.016: Bio-Pesticide/MAFFS Kenema
Photo 001.017: Paraquat/MAFFS Bo
Photo 001.018: Yuper Star/MAFFS Port Loko
Photo 001.019: Glyphosate/MAFFS Bo
Photo 001.020: Super Extra/MAFFS Tonkolili
Photo 001.021: Samo extra/MAFFS Tonkolili
Photo 001.022: Kocide 101/MAFFS Store Kissy
Photo 001.023: Methyl Eugenol/MAFFS kissy Store
Photo 001.024: ACETELLIC SUPER DUST/ MAFFS Store Kissy
Photo 001.025: Kocidane/Tjal Enterprise
Photo 001.026: Chlorpane/Tjal Enterprise
Photo 001.027:Cyflane EC/Tjal Enterprise
Photo 001.028: Quizalopane/Kjal Enterprise
Photo 001.029: Diurane/Tjal Enterprise
Photo 002: MAFFS Store Kissy Freetown
Photo 002.01: Ceiling of MAFFS store Kissy
Photo 003: Tjal Enterprises Peace Market
Photo 003.01: Tjal Enterprises Kingtom
Photo 004: MoHS Entomology Store New England
Photo 005: Bombali District MAFFS Store
Photo 006: Koinadugu District MAFFS Store
Photo 007: Port Loko District MAFFS Store
Photo 008: Tonkolili District MAFFS Store
Photo 009: Kailahun District MAFFS Store
Photo 010: Kono District MAFFS Store
Photo 011: Kenema District.
Photo 012: Bo District MAFFS Store
Photo 013: Moyamba District MAFFS Store
Photo 014: Pujehun District MAFFS Store

List of Figures

- Figure 001:** Graphical Plot showing quantity of pesticides per province
Figure 002: Graphical Plot showing quantity of pesticides per district
Figure 003: Graphical plot of Prevalence data by Province
Figure 004: Graphical presentation of Obsolete Pesticide and Associated waste prevalence
Figure 005: Pictorial representation of obsolete pesticides and associated wastes
Figure 005.01-005.029: Photographs of Obsolete Pesticides
Figure 006: Pictorial representation of MAFFS warehouse in Kissy Freetown
Figure 006.01: Pictorial representation of the ceiling of MAFFS warehouse in Kissy Freetown
Figure 007: Pictorial representation of Tjal Enterprises warehouse Peace Market, Freetown
Figure 007.01: Pictorial representation of Tjal Enterprises warehouse kingdom, Freetown
Figure 008: Pictorial representation of MoHS Entomology warehouse New England, Freetown
Figure 009: Pictorial representation of Bombali District MAFFS warehouse
Figure 010: Pictorial representation of Koinadugu District MAFFS warehouse
Figure 011: Pictorial representation of Port Loko District MAFFS warehouse
Figure 012: Pictorial representation of Tonkolili District MAFFS warehouse
Figure 013: Pictorial representation of Kailahun District MAFFS warehouse
Figure 014: Pictorial representation of Kono District MAFFS warehouse
Figure 015: Pictorial representation of Kenema District MAFFS warehouse
Figure 016: Pictorial representation of Bo District MAFFS warehouse
Figure 017: Pictorial representation of Bonthe District MAFFS warehouse
Figure 018: Pictorial representation of Moyamba District MAFFS warehouse
Figure 019: Pictorial representation of Pujehun District MAFFS warehouse

List of Abbreviations

MAFFS: Ministry of Agriculture Forestry and Food Security

EPA: Environment Protection Agency

GoSL: Government of Sierra Leone

MoHS: Ministry of Health and Sanitation

MFMR: Ministry of Fisheries and Marine Resources

MWHI: Ministry of Works, Housing and Infrastructure

ONS: Office of National Security

MTI: Ministry of Trade and Industry

GoSL: Government of Sierra Leone

POPs: Persistent Organic Pollutants

GEF: Global Environment Facility

UNE: United Nations Environment

AfP: Agenda for Prosperity

ABCs: Agro-Business Centers

DDT: Dichlorodiphenyltrichloroethane

HBCD: Hexabromocyclododecane

HCB: Hexachlorobenzene

SIDS: Small Island Developing States

LDCs: Least Developed Countries

CILSS: Comité permanent inter-État de lutte contre la sécheresse au Sahel

ACKNOWLEDGEMENTS

I am delighted to thank the following institutions for making their professional staff available to participate in the preparation, training and implementation of the National Inventory on Obsolete Pesticides and Associated wastes project in Sierra Leone: Chemistry Department, Fourah Bay College, Ministry of Agriculture, Forestry and Food Security, Environment Protection Agency Sierra Leone, Ministry of Health and Sanitation and Private consultants.

The Environment Protection Agency Sierra Leone (EPA-SL) and the Ministry of Agriculture Forestry and Food Security are thankful to the stakeholders for their useful comments and participation during the national training and the execution of the inventory.

The EPA-SL is also highly indebted to the United Nations Environment, Green Cross Switzerland, Center for Basel and Stockholm Conventions Francophone Africa and Green Cross Burkina Faso/Africa Regional Program for supporting the trainings and the national inventory exercise.

We wish also to thank the Global Environment Facility for funding the project and the national and international training and inventory expert team, particularly Mr. Ousseni DIALLO as Project Coordinator, Mr. Abel BEDA his assistant from Burkina Faso and Mr. Ibouaïma TIAMIYOU who lead the national training and inventory. We also want to further thank the organizers for the international training in Bamako, Mali.

At last but by no means the least, the MAFFS and the Environment Protection Agency Sierra Leone wish to recognize the excellent contribution made by the Project Coordinator and national focal point to the Stockholm Convention, Mr. Alie Dukuray JALLOH, Head of Chemical Controls and Management. Many thanks also to national expert team, Ms. Raymonda JOHNSON; Mr. Hamidu MANSARAY and Mr. Alie MANSARAY who are the bedrock for the smooth execution of this project

Executive Summary

The adoption of The Future We Want at Rio+20 and its endorsement by the UN General Assembly has reaffirmed the target, set in 2002 at the World Summit on Sustainable Development in Johannesburg, that by 2020 chemicals are produced and used in ways that minimize significant adverse impacts on human health and the environment. At the Rio conference, Governments recognized the significant contributions to sustainable development made by chemicals and waste multilateral environmental agreements. In the year following the Rio+20 Conference, the world's attention was focused on chemicals and waste management as never before.

A growing number of local and global issues are increasingly linking hazardous chemicals, pollution and wastes to human health and well-being. More than ever, the people of Sierra Leone are counting on its representatives in ministries, departments and agencies of government, to make the right decisions; decisions that would lead to improvement in the quality of life of people and for a sustainable planet. The continued use of toxic chemicals puts unsustainable pressure on our environment, compromising our land, forests, water, oceans, and our lives. We are pushing the vital Earth systems towards and beyond the tipping point, with devastating consequences.

From 4th - 6th December, 2017, thousands of government delegates and observers from international organizations assembled in Nairobi for the Third session of the United Nations Environment Assembly of the United Nations Environment Programme on the theme moving "Towards a Pollution-Free Planet," to address issues on combating pollution and to provide strategic direction for acceleration of actions. One of the main outcomes of the meeting was the adoption of a Ministerial Declaration on pollution to address the pollution of air, land and soil, freshwater, and oceans, linked to the Sustainable Development Goals (SDGs). Member States, private sector entities and civil society organizations made serious commitments for individual and collective actions to clean up the planet and end pollution in all its forms. As a Member State of the UNEA, we must show our commitment and to collectively take robust and urgent actions to prevent, mitigate and manage pollution of our air, land and soil, freshwater and ocean to have a healthy environment for the wellbeing of our people.

Obsolete pesticides and associated wastes are highly toxic causing an array of adverse effects, notably deaths, diseases and birth defects among humans and animals. The environment due to bad managements of these hazardous substances also faces several adverse effects.

Purpose of the National Inventory of Obsolete Pesticides and Associated Waste

The Goal of the project is to improve the management of chemicals and associated wastes in Sierra Leone. This aligns to the GEF goal in chemicals management, which is "to promote the sound management of chemicals throughout their life-cycle in ways that lead to the minimization of significant adverse effects on human health and the global environment."

The Objective of the project is to strengthen and build the capacity required in Sierra Leone to implement the Stockholm Convention NIPs in a sustainable, effective and comprehensive manner, while building upon and contributing to strengthening a country's foundational capacities for the sound management of chemicals. The National Inventory of Obsolete Pesticides and associated waste for Sierra Leone is prepared to elaborate the current situation and align commitments and actions that it intends to undertake in the management and control of pesticides. Sierra Leone will therefore integrate the national obsolete

pesticides and associated wastes inventory report into its national sustainable development plans where necessary.

National Inventory of Obsolete Pesticides and Associated Waste Development Process

The process of developing the national inventory of obsolete pesticides and associated wastes for Sierra Leone is divided into five phases:

1. Nomination of three (3) national experts for International Training
2. Establishment of a coordination mechanism and process organization;
3. Conduct National training for local experts
4. Conduct national inventory exercise
5. Endorsement and submission of the inventory report.

Phase One - Nomination of three (3) national experts for International Training

Phase one started with the nomination of three (3) national experts from MAFFS (2) and EPA-SL (1) to the Regional center for International training on Obsolete Pesticides and Associated Wastes (OP & AW). This was undertaken after a correspondence via mail was dispatched by the regional center for the Stockholm convention in collaboration with FAO to the National Focal point to the Stockholm Convention (SC) in Sierra Leone. Correspondences were later dispatched to the relevant government entities to seek for nominations. The nominees were submitted to the desk of the national focal point who later submitted details to the Regional Office for the SC. The international training took place in Bamako, Mali at the Azalai hotel for a period of one week (January 30 to February 3rd, 2017). These participants are expected to replicate the training in Sierra Leone and form the nucleus of the inventory.

Phase Two - Establishment of a coordination mechanism and process organization

Coordination and planning committee was then established with representatives from Green Cross Burkina Faso/Africa Regional Program (GCBF/ARP). Original strategy settled by GCBF/ARP was to achieve activities in collaboration with three national experts under supervision of Office of National Focal Point Stockholm Convention. The Executive Chairperson of the EPA-SL, the Permanent Secretary of MAFFS and the Director of crops were acting at an advisory capacity. This committee worked on the planning and execution of the national training and inventory of OP & AW in Sierra Leone

During the planning period, the team identified the following institutions as the major stakeholders in the management of OP & AW in the country: Ministry of Agriculture Forestry and Food Security (MAFFS), Ministry of Health and Sanitation (MoHS), Ministry of Foreign Affairs and International Cooperation, Ministry of Trade and Industry, Sierra Leone Ports Authority, Sierra Leone Police, Ministry of Fisheries and Marine Resources, National Farmers Federation, Local NGOs and CBOs.

Phase Three - Conduct National training for local experts

On the 6th – 7th November, 2017, Sierra Leone hosted the international expert trainer recruited by FAO,

the Regional project coordinator and Team and national team project coordinators and stakeholders at the conference room of MAFFS for the national training exercise. The training was prefaced with a formal opening ceremony where heads of institutions made a declaration of commitment to the process of improving chemicals management and pledge their support to the exercise. Courtesy calls were also undertaken to key ministries and government agencies by the project coordinator team. The training was concluded with a practical exercise that lasted for four days at various warehouses.

Phase Four - Conduct national inventory exercise

The inventory exercise was undertaken for a period of three weeks, identifying forty two (42) formulations of OP & AW nationwide. Highly hazardous obsolete pesticides were identified with some been stored in very dangerous situation contaminating the buildings and the environment. A wide range of OP & AW have been found to be in use in the country. Some were on the shelves and others though viable but ruptured. Sierra Leone is an agrarian country with many women and children exposed to the dangers of POPs. Exposure to POPs pesticides is mainly due to improper disposal of obsolete pesticides and containers. This is compounded by lack of awareness among the users and handling personnel. Pesticide containers, after the products are used up, are given out to laborers and the surrounding communities for use to draw drinking water, thus putting the farming households at risk.

Phase Five: Endorsement and submission of the inventory report.

The draft report was submitted to Green Cross Burkina Faso/ Africa Regional Program for review and later validated in a national meeting of stakeholders in Sierra Leone.

1. Introduction

1.1 The General Context

Agriculture is the main economic activity in Sierra Leone, contributing about 53% to GDP, 10% of export and over 70% of the population earns a living directly or indirectly from agricultural activities. There has been tremendous increase in acreage of land cultivated in Sierra Leone with increase in diversification of crops being cultivated. The health of plants is of vital importance towards the country's drive to increasing production and productivity for the attainment of food security. Sierra Leone is one of the countries with the minimal usage of pesticides. However due to the increase of cultivated arable land, there has been increase use of pesticides and this has led to high importation of pesticides in a bid to address pest and disease infestation of food in the field and in storage. The quantity of pesticides imported is not depleted in time creating high amounts of obsolete pesticides within government, private and farm stores.

In addition to the above, Sierra Leone is faced with serious challenges in sanitation increasing insect/rodent-vectors/pests population and activities. In managing this population there has also been increase use of pesticides in communities and dumpsites where these vectors/pests are present. The environmental, health and social consequences associated with pesticide stockpiles are enormous. As a country, there has been little or no attempt to promote the management of obsolete pesticides identified in the 2008 study on the development of the National Implementation Plan of the Stockholm convention on Persistent Organic Pollutants (POPs) for Sierra Leone. The identified POPs pesticides were still in existence and some have disappeared.

Since 2007, there has been a significant increase in private investment in the agricultural sector, with large investments in oil palm, sugar cane, rubber and fruits.

Sierra Leone farming community is also involved in the production of food crops, especially rice, the staple food, cassava and other food products, including sweet potato, kola nuts, cashew, poultry, small ruminants and cattle; the production of traditional export crops such as cocoa and coffee are also being undertaken. Sierra Leone being a coastal country has a large fishing industry.

1.2 Background Information on Pesticides

Sierra Leone is no exception to the use of agro-chemicals in the Agricultural sector. The current government developed an "Agenda for Change" which span 2007-2012 and an "Agenda for Prosperity" the road to middle income status spanning 2012-2017 with a vision to move the existing stultified backyard farming by many Sierra Leoneans to large scale with mechanization supported by increased use of agricultural supplements. One of the strategic objectives of the Agenda for Prosperity (AFP) is to increase farmers' access to agricultural inputs – fully operationalize the Agro-business centers (ABCs), including construction and providing equipment; continue to provide extension services to farm households, providing them with improved chemicals, seeds, and tools; Improve animal health care to facilitate livestock production – establish District Livestock Clinics, provide training for middle-level personnel and Community Animal Health Workers, and provide support to cross-breeding and feed mill initiatives through ABCs; Operationalize a strategic grain reserve to ensure that food reserves are available in times of urgent need

In the health sector, the GoSL has a strong desire to improve also on sanitation. This vision cumulates to an increase importation and utilization of pesticides within the household and health sector with a clear aim to support its communities and other habitants to face the challenges of pests.

1.3 The Pesticides National Inventory

In 2008 Sierra Leone conducted its first pesticide inventory. This was done under the article 7 of the Stockholm convention on Persistent Organic Pollutants which requires all member states to undertake a national inventory. The studies show the existence of DDT, Koicide, HBCD, Dieldrin, HCB, phosphine, methyl bromide, bidrin, and lindane on several platforms. Gammalin 20, cocotine, HCB, and bidrin were used for fishing practices, preservation of kola nuts and treatment of head lice. Aldrin and azodrin were used in the control of beetles in cashew nut production. Stam F-34, gammalin 20, gammazone, cocotine, tennate, and klerate were widely used in the control of pests across the country. The report could not ascertain the existence of these pesticides in the identified areas of the first National Implementation Plan of the Stockholm convention for Sierra Leone. At present, Malathion and furadan are used as broad spectrum pesticides. These pesticides were in use in various facet of life during and after the 2008 national inventory on pesticides was conducted. For example, Dieldrin, HCB, phosphine, methyl bromide, bidrin, and lindane were used as soil fumigants in the production of tobacco in the provinces especially in the Bombali, Kambia, Tonkolili, Bo and Moyamba districts. Tobacco production in Sierra Leone is now suspended because of market forces. Gammalin 20, cocotine, and bidrin were used for fishing in the past. HCB was used in local fishing practices, preservation of kola nuts and treatment of head lice. These practices are not prevalent any more. Aldrin and azodrin were used in the control of beetles in cashew nut production. Stam F-34, gammalin 20, gammazone, cocotine, tennate, and klerate were widely used in the past for the control of a variety of pests across the country. According to information obtained in the Northern Province of the country, ash from rice husk is added to Malathion to produce a substance which local farmers referred to as B.H.C. Kocide 101 was used as fungicide and bactericide in cocoa production. This has been identified in the inventory in various locations in Sierra Leone. Permethrin was used as insect powder against a wide range of insect pests. Endosulfan was also used in the control of insect pests. With the present drive of food security nationwide, there is the likelihood of an increased use of pesticides in the future, since it is viewed as a means to reduce pre and post-harvest losses. DDT was used in the control of insect vectors that cause malaria and onchocerciasis, especially along the Rokel River in the Tonkolili district, Scarcies River in the Kambia district and the Taia River in the Moyamba district. Presently DDT is not in use in the country. However, due to the prevalence of malaria, future use cannot be ruled out.

Suppliers and business enterprises identified by the 2008 pesticide inventory report were visited by the teams but could not find any trace of products or contact and therefore could not map out a trail. The addresses and contacts identified in the study were Alhaji Barrie of Cogo Enterprise (2C Lumley Street, Freetown) who supplied the Ministry of Agriculture Forestry and Food Security with 2,857 liters (2004) and 3,200 liters (2006) of malathion 50 EC. Psmagri Chemicals (24A Juba Hill, Freetown) for the supply of 11,000 liters of PFA, which was distributed nationwide. Integrated Pest Management Services (31 Garrison Street, Freetown). The major source was from Neighboring Guinea.

Strategies on how to manage these pesticides and their associated wastes were also noted in the report. There are no indications of past and present production of POPs pesticides in the country. Such technology has not yet been developed. However, a projected future production cannot be ruled out based on the provision given for the exemption of countries by the Convention for the treatment of disease vectors. Sierra Leone has benefited from GEF funded regional programs to not only increase the level of awareness of its people but to have the required policies and programmes to face the long-term threat of these pesticides on human health and the environment.

Since then, Sierra Leone is undertaking its second inventory of obsolete pesticides and associated wastes with support from GEF, UNE and regional centers through the project titled “ Capacity Building and Technical Assistance to Least Developed Countries (LDCs) and Small Island Developing States (SIDS) of Africa for the Realization of the National Implementation Plan (NIPs) of the Stockholm Convention in the Sub-Regions of West Africa (ECOWAS) and the Center” to assess the current status of stockpiles.

A first phase of the project consisted of training the three (3) representatives of each country on inventory techniques for obsolete pesticide stocks and associated wastes in accordance with the Food and Agriculture Organization (FAO) Pesticide Stock Management System (PSMS). Sierra Leone had as representatives, two staff from the Ministry of Agriculture Forestry and Food Security (MAFFS), and one staff of the Environment Protection Agency Sierra Leone (EPA-SL).

The second phase consists of the realization of inventories. This includes the training of experts nationally to undertake a nationwide inventory. This will require a detailed inventory of obsolete pesticides and associated contaminated materials within Sierra Leone. To this end, it is planned that the technical and operational capacities of the inventory teams be led by the three (3) national consultants to be supervised by the National Focal Point to the Stockholm Convention on Persistent Organic Pollutants (POPs). A practical training session on inventory techniques of obsolete pesticides and associated wastes was conducted in Sierra Leone by Green Cross Burkina Faso assisted by an international consultant on the 6th – 7th November, 2017; the inventory was then conducted nationwide by national experts for a period of two weeks.

1.4 Importance of the Project

The direct relationship between the sound management of chemicals and the protection of human health, animal health and the environment are often overlooked in development planning and prioritizing. This project will support governments realized the link and call for action.

The national pesticide inventory is very vital to the country as it provides the government with essential data on obsolete pesticides and associated wastes to support policy direction on the lifecycle of pesticides within country. . The inventory will also guide the government with appropriate technical interventions towards sound disposal. This project will maintain the momentum of the national coordination structure mechanism built during the NIP development process, to support a collective action, build national capacity, promote awareness and enhance mainstreaming of chemicals issues into the work of national governments.

1.5 Inventory Contacts

During the inventory exercise the national consultants held meetings with farming communities and associations, Store Keepers of Ministry of Agriculture, Forestry and Food Security (MAFFS) and Entomology Department of the Ministry of Health and Sanitation (MoHS), District Agricultural and Health Officers, peddlers, Educational institutions, Agricultural Research Institutes, agro-businesses, the private sector, Fishing companies and Non-governmental organizations. Below is a table of those with significant quantities of OP & AW.

Table 001: Showing names of contacts in various sites visited.

| No | Name of Organizations/Institutions | District | Officers interviewed |
|----|-----------------------------------------------------|--------------|----------------------|
| 1 | Ministry of Agriculture, Forestry and Food Security | Tonkolili | Henry Fornah |
| 2 | Ministry of Agriculture, Forestry and Food Security | Bombali | Aminata Bah |
| 3 | Ministry of Agriculture, Forestry and Food Security | Koinadugu | Lamin Conteh |
| 4 | Ministry of Agriculture, Forestry and Food Security | Port Loko | Ibrahim Kamara |
| 5 | Ministry of Agriculture, Forestry and Food Security | Kambia | Umaru Sankoh |
| 6 | Ministry of Agriculture, Forestry and Food Security | Kono | Amos Fannah |
| 7 | Ministry of Agriculture, Forestry and Food Security | Kenema | Francis Tassoe |
| 8 | Ministry of Agriculture, Forestry and Food Security | Kailahun | Lahai Bangura |
| 9 | Ministry of Agriculture, Forestry and Food Security | Western Area | Idrissa kargbo |
| 10 | Peace market | Western Area | Yassim Jalloh |
| 11 | Medical Entomology | Western Area | Lansana Conteh |
| 12 | Ministry of Agriculture, Forestry and Food Security | Pujehun | Tamba Karimu |
| 13 | Ministry of Agriculture, Forestry and Food Security | Bo | Lahai Sieh Turay |
| 14 | Ministry of Agriculture, Forestry and Food Security | Bonthe | Junisa Fofanah |
| 15 | Ministry of Agriculture, Forestry and Food Security | Moyamba | Victoria Vanjah |

1.6 The Report Structure

This national inventory on OP & AW report has been broadly structured into five parts:

1. Executive Summary
2. Country Background Information and OP & AW literature review
3. Legal review
4. Methodology
5. Findings/results
6. Recommendations

2. Use of Agrochemicals in Sierra Leone

In Sierra Leone pesticides are mostly used in the agricultural sector by both private farmers and farmer based organizations to manage pests and diseases affecting plants and animals both in the field and at storage. They are also used in the health sector, as a remedy to insect and rodent pests causing health hazards. MAFFS import pesticides which are given to farmers on free bases, when there are pests and diseases outbreak, for research purposes and under normal circumstances they are subsidized to farmers at a lower price. They are being handled and sprayed by trained operators in MAFFS and the remaining kept in MAFFS stores. Importation of pesticides can also be undertaken by private companies and businesses. Farmers do purchase pesticides from agro-dealers and from peddlers. Private Service providers are also prominent in the use of agro-chemicals. Domestic house pest management by peddlers is also common in the country. As a country we cannot rule out the fact that pesticides are also use by hunters for catching rodents and other animals; evidence of the possible use of pesticides in the fishing industry exists.

Pesticides are used by mining and industrial companies/factories. The lead institutions with responsibility to manage pesticides are MAFFS, MOHS and EPA-SL. MOHS concerned with the impacts on human health, the EPA-SL is concerned with the environment and has therefore signed up to very vital international treaties namely, the Stockholm Convention on Persistent Organic Pollutants, the Basel Convention on the transboundary movement of hazardous waste and the Rotterdam convention on the prior informed consent. This will create the international platform to regulate and provide the technical guidance on best environmental practices.

3. Health and Socio-economic impact of Pesticides

There have been chronic and minor cases of poisoning and health effect due to pesticide exposure, some leading to death of some farmers and operators due to continuous application of pesticides especially the hazardous ones. Although there are registered pesticide shops, however farmers prefer to buy cheap pesticides from the street, which have no label, and not in their proper container.

Cases of pesticides contamination of our water bodies and biodiversity due to improper disposal of pesticides and related wastes are prominent. In 2014, a community experience high rate of fish death due to improper use

of pesticides. Gammalin 20 and the use of empty pesticide containers to fetch water from streams were found to be responsible for the high death toll of fish. In 2016, several animals died due to the use of pesticides against rodents. Malathion was suspected to have been used in this case. Cases of cancer and mysterious deaths are on the increase and in most times being associated with witchcraft. Toxicological studies are yet to be conducted on pesticide impact on the citizen's health and socio-economic living.

4. Persistent Organic Pesticides Remediation/Treatment Technologies

Currently the country does not have any technology or facility in place to treat POPs. In Sierra Leone, we are yet to have collection point and disposal facilities for obsolete pesticides and associated wastes. The Freetown Recovery project funded by the World Bank and other partners has provision for the establishment of the landfill site in Freetown with the aim of closing the current existing dumpsites. However having signed up to the Basel convention, the country can use the international provisions to seek assistance with a third country for disposal as a short-term measure. In the long term, we are looking forward to creating the right partnerships with international partners through GEF and international agencies to construct a national disposal facility in Sierra Leone.

5. Legal and Institutional Framework on Pesticide Management

5.1 Legal Framework

5.1.1 International and regional context

There are international policies, laws, standards and regulation on pesticides that have been put in place by international organizations. Sierra Leone has increased its participation by either signing or ratifying to these treaties, joining the world to promote safe and healthy environment.

5.1.2 Conventions

Sierra Leone is a signatory to a number of international treaties and agreements relating to the management of the use of chemicals including Persistent Organic Pollutants (POPs). In a bid to foster international collaboration and cooperation in sound environmental management, the country signed and ratified a series of sub-regional, regional and global environmental conventions. Some of these treaties and conventions could be directly or indirectly related to chemicals, pesticides and associated wastes or POPs management.

The following conventions and protocols have been signed and ratified by Sierra Leone:

- Stockholm Convention on Persistent Organic Pollutants
- Rotterdam Convention
- Basel Convention and its Amendments
- Vienna Convention on Protecting the Ozone layer and Montreal Protocol
- Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization to the Convention on biodiversity

- International Plant Protection Convention (IPPC)
- Minamata Convention on Mercury
- Bamako convention
- FAO agreement
- United Nations Convention on the Law of the Sea (UNCLOS)
- Ramsar Convention on the Conservation of Wetlands
- Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region (Abidjan Convention)
- African Convention on the Conservation of Nature and Natural Resources
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- International Convention on Civil liability for Oil Pollution Damage
- Convention on Fishing and Conservation of Living Resources of the High seas
- Convention concerning the protection of the World Cultural and Natural Heritage
- Sanitary and Phytosanitary agreement
- CODEX agreement
- OIE agreement
- International Plant Protection Convention
- United Nations Framework Convention on Climate Change (UNFCCC)
- United Nations Convention on Biological Diversity (UNCBD)
- United Nations Convention on Combating Desertification (UNCCD)

5.1.3 Regional

Regionally, the ECOWAS pesticides policy is available and has been gazetted in their journal. CILSS sub-regional pesticides list is also available in their website. The West Africa Pesticide Management Committee has been established and there are on-going plans to develop it sub-regional pesticides list and regulation strategies. A regional framework strategy and action plan for the management of chemicals and associated wastes has been validated by ECOWAS country representatives to be presented to Heads of government for approval. In the interim, we depend on information and knowledge sharing between focal points of various chemical conventions to track the use of chemicals.

5.1.4 National

Legislation governing pesticides and associated wastes are found as Acts, rules and notifications, and regulations of the various government line ministries and institutions. Such legislation includes but not limited to those listed below:

- Constitution of Sierra Leone, 1991
- The National Environmental Policy , 1990
- The Environmental Protection Agency Act – 2008
- The Environmental Protection Agency (Amendment) Act, 2010
- The Environmental Protection Agency Act, 2008 (Act No. 8 of 2008) – The Environmental Impact Assessment License Regulations, 2010.

- The Mines and Minerals Act, 2009
- The Wildlife Conservation Act, 1972
- Factories Act, 1974
- Forestry Act, 1988
- Forestry Regulations, 1989
- The Draft Forestry and Wildlife Sector Policy for Sierra Leone, 2003
- Fisheries Legislation
- The Core Mineral Policy, 2009
- The Explosives Ordinance, 1955
- Local Government Act, 2004
- National Lands Policy, 2005
- National Local Content Policy, 2013

MAFFS has a draft National Plant Protection and Regulatory Service Policy, gazette ECOWAS pesticide policy, draft phytosanitary policy and old version national pesticide list that will be reviewed by the National Pest and Pesticide Management Board and Committee (NPPMB/C). The EPA-SL has established national committees on POPs, and other environmental quality teams, worked on a draft chemicals act in the office of the Attorney General and established an Environmental Impact Assessment to be undertaken by all agricultural companies with a strict Chemicals and pesticide management plan. Import clearance systems been implement on companies that are licensed with the EPA-SL.

- **New Forestry Act (NFA), 1988**

In the Act, the Minister is empowered to declare any area to be a "protected area for the purpose of conservation of soil, water, flora and fauna". Forest officer may issue a license authorizing the holder to fell and extract a protected tree. The prohibition of burning of forest is related to the control of unintentional POPs, obsolete pesticides and associated wastes contained in protected areas.

- **National Policy and Land Commission Act (NPLCA), 2017**

The land policy document is intended to serve as a useful guide for the smooth administration and management of land. TO establish a Commission with its composition and functions to manage state lands, the execution of a comprehensive program for the registration of title to land throughout Sierra Leone.

- **Mines and Minerals Act, 1994**

The Mines and Minerals Act of 1994, addresses mining leases and licenses requirements for artisanal and industrial mining. When a proponent/miner applies for a mining lease, he has to provide relevant information in fulfilling the criteria on the period of time for which the lease is sought.

Other requirements under the Mines and Minerals Act include the prohibition of illegal exploitation and disposal of any hazardous and radioactive minerals.

- **The Environment Protection Agency Act: 2008 and 2010 amendment**

The Environment Protection Agency Act (EPA) of 2008 and amended in 2010. The Act makes provision for the development of an Environmental Impact Assessment (EIA) for certain types of projects to be undertaken

within Sierra Leone, which include agriculture, mining, construction, waste disposal, and exploitation of hydraulic resources.

- **Public Health Act (1960)**

The Public Health Act (1960) consistent with the current legislation, Local Councils (and other local level structures) section 121 gives a clear mandate for implementation of premises inspection, and provide strategic direction and back up support to enable the monitoring and enforcement of standard with respect to type and use of pesticides in the country.

5.2 Institutional context

5.2.1 Ministry of Agriculture Forestry and Food Security (MAFFS)

The Ministry of Agriculture Forestry and Food Security, in its drive to achieve Food Security by the year 2017, has prepared a policy intent document. This ministry deals with the protection of crops and animal diseases and therefore imports a lot of agrochemicals and likely POPs. The policy intent states provides for a clear management strategy for fertilizers and agrochemicals, crop protection, soil and organic farming.

To realize these policy objectives, the Government will:

- Establish and maintain an early warning system that constantly monitors national crop pests, diseases and weeds and draws attention to emerging threats;
- Put in place a mechanism for emergency control measures for epidemics;
- Put in place effective quarantine facilities at strategic border crossing points;
- Mount educational program that will make farmers appreciate the need for early warning of pest and disease outbreaks and encourage them to adopt appropriate control measures;
- Assist farmers in identifying pest problems and assessing crop losses;
- Encourage research institutions to carry out investigations on the biology and ecology of pests in any geographical zone and determine the most appropriate methods of control;
- Seek the assistance or cooperation of neighboring countries with the objective of controlling pests and diseases of economic importance without endangering national security.

Other key players in the agricultural sector are;

The National Farmers Federation in Sierra Leone and the Sierra Leone Women Farmers Forum are responsible to motivate, monitor and inform farmers on pesticide management strategies being promoted by MAFFS and its partners.

The National Pest, Pesticide Management Board and Committee (NPPMB/C) already established with all relevant stakeholders on board, and the secretariat is in the Ministry of Agriculture, Forestry and Food Security (MAFFS).

5.2.2 Environment Protection Agency Sierra Leone

An Act of Parliament, the Environment Protection Agency (EPA) Act (2008), established the Environment Protection Agency, Sierra Leone. It is now the leading institution in the country charged with the responsibility of protecting the environment. It is a corporate body charged with responsibility for the effective protection of the environment. The agency acts as the focal point for all national and international environmental issues relating to Sierra Leone. The agency coordinates and monitors the implementation of all environmental policies, program, projects and activities. The EPA-SL is the focal point for all multi-lateral environmental agreements and the environment.

In line with the National Environmental Policy of Sierra Leone, the EPA-SL ensures that Environmental Impact Assessment (EIA) is applied to all development projects as listed in the Second schedule of the EPA Act of 2008 as amended in 2010 with potential impacts on the environment. EIA was introduced in 1999 by the then Department of Environment, under the Ministry of Lands, Country Planning and Environment. However, the EIA guidelines developed in 1999 was not robust enough to address the many environmental issues during the development of projects. This necessitated the EPA-SL to revise the EIA procedure in 2015.

The Environmental Protection Agency is responsible to manage pesticides and chemicals with the sole objective of protecting human health and the environment from its hazards.

5.2.3 National Protected Area Authority

The National Protection Area Authority Act was passed in 2012. The Act provides for the establishment of the National Protected Area Authority (NPAA) and Conservation Trust Fund. The purpose of the Act is to promote biodiversity conservation, wildlife management, research, provide for the sale of ecosystems services in national protected areas, promotes co-management of natural resources for the NPAA within and outside national protected areas with local forest edge communities and exercise oversight and authority over National Parks and Protected Areas designated for conservation purposes and to promote sustainable land use practices and sustainable environmental management.

5.2.4 Ministry of Health and Sanitation

The Ministry of Health and Sanitation is responsible to manage health hazards related to pesticides, report on clinical complains related to pesticides and it use in the health sectors. The Ministry of Health and Sanitation collaborates with various other ministries, department and agencies on matters relating to environmental health. Health officials often participate in meetings, projects and related activities relating to environmental management. The cardinal role of the MoHS is to address the health and sanitation challenges faced by Sierra Leone.

5.2.5 Ministry of Fisheries and Marine Resources (MFMR)

This ministry manages, develops and conserves all fisheries and marine resources. The Fisheries Management and Development Act of 1988 (GOSL, 1988) and the Fisheries Regulation of 1990 prescribe the preparation of management and development plan, specific procedures for licenses, and measures for conservation, enforcement and surveillance. It is reported that due to the non-regulated consumption and sale of pesticides,

it is widely believed that local fishermen could be tempted to use pesticides in fishing. This is yet to be proven, but very recently along the beach of Lumley in Freetown, Sierra Leoneans witnessed greater fish kills.

5.2.6 Customs and Excise Department (CED) of the National Revenue Authority (NRA)

At present no economically useful chemical or pesticide is manufactured in Sierra Leone. Almost all chemicals/pesticides are therefore imported with the exception of traditional/biological pesticides. The Customs and Excise Department (CED) of the National Revenue Authority (NRA) is the government organ responsible for overseeing and regulating the importation of chemicals into Sierra Leone. This department faces a number of challenges in the achievement of its ultimate goal of mobilizing revenue for development. Some of these challenges include the employment of the right mix of personnel (including those with the requisite scientific background to support the chemical management efforts demanded by the Stockholm and other related Conventions) and requisite modern equipment and technology. The existence of a small number of customs posts, each covering hundreds of kilometers of porous borders connected by poor road and telephone network, is an added challenge for an effective control of the border.

5.2.7 Ministry of Trade and Industry

One of the major assignments of the Ministry of Trade and Industry is the management of standards and quality in Sierra Leone. This ministry achieves its goal by supervising the Sierra Leone Standards Bureau (SLSB), which is an autonomous coordinating body responsible for all standards and quality issues in the country. The general mandate of the bureau is to ensure the safety of products consumed in Sierra Leone. The SLSB develops and adopts standards, is responsible for the inspection of goods and provides testing and quality control services. The bureau is currently financed from three sources: subventions from central government, a 0.03% levy on all imports and exports, and funds from international donors. The levy on imports and exports is fixed at a given level for all transactions. It is expected that as this bureau develops, a fee directly related to the services provided should replace this levy.

Sierra Leone is a member of the World Trade Organization (WTO) and needs to take further steps to meet the requirements of the Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary (SPS) Agreement by making its technical regulations transparent to trading partners. The SLSB has been nominated as the enquiry point for both SPS and TBT issues. An effective notification and enquiry point requires trained staff and the resources to undertake inter-agency and inter-ministerial contacts and coordination and to manage the necessary flow of information.

5.2.8 Roles of Local and private sector, academic and other non-governmental institutions

a) Local and private sector institutional arrangements

Various personalities and village level organizations throughout the country have a direct impact on the use and management of pesticides. The relative importance and effectiveness of these individuals/bodies vary greatly between one community and the other.

Individuals/organizations found in most villages and towns that are of direct relevance to the use of pesticides include:

- Traditional authorities, i.e. the chiefs and elders;

- Village development committees (which provide linkages between traditional authorities);
- Producer associations, farmers' associations;
- Market women's associations;
- Mutual support groups for farming activities;

The new dispensation to decentralize planning and administration to a local level will reinforce the local government council's role in:

- Ensuring the enforcement of bushfire laws;
- Initiating tree planting campaigns;
- Prompting payment of royalties and surface rents to land owners whose lands are mined out;
- Regulating chainsaw operators;
- Prohibiting clearing and cultivation of riversides;
- Prohibiting planting on marginal areas.

Formidable women organisations that have links with farming also exist since they access a variety of pesticide products. They see the need for controlled use of pesticides and have the ability to enforce rules.

b) Non-governmental organisations (NGOs)

Non-governmental organizations (NGO's) in Sierra Leone have supported communities to address sustainable use of natural resources. They have done this through encouraging communities to utilize fewer amounts of pesticides and promote organic farming. They promote community biodiversity, supporting livestock production and management and park management.

There is a strong NGO sector in Sierra Leone creating public interest in environmental issues. The most active NGOs on the ground in areas related to environmental and natural resources management are:

- The Conservation Society of Sierra Leone (CCSL), which promotes the conservation and sustainable use of Sierra Leone's natural resources through research, education, advocacy and support to site management groups. CCSL also undertakes campaigns for the protection of wildlife, parks and sanctuaries.
- The Environmental Foundation for Africa (EFA), whose mission in Sierra Leone is to restore and protect the environment and its natural resources. It has acquired experience in terms of operation in conflict zones, humanitarian and refugee operations, post-conflict reconstruction and rehabilitation.
- The Commonwealth Human Ecology Council (CHEC-SIL) promotes conservation of the ecology through education and disseminates environmental information through the mass media. It also supports the Government of Sierra Leone in promoting, through education, policy implementation and project execution.
- The Organization for Research and Extension of Intermediate Technology (OREINT) promotes self-sustaining rural development through the promotion of agriculture and appropriate technology to enhance and improve the socio-economic status of the people in rural areas.

- Green Scenery and Friends of the Earth are other local NGOs that are actively involved in tree planting and awareness raising campaigns on the protection and management of the environment and natural resources.

c) **Academic institutions**

The Njala University, which evolved from the University of Sierra Leone in 2004, has a Faculty of Environmental Sciences with four academic departments that focus on teaching and research activities on the environment. It also has the School of Agriculture with direct modules on pesticide management. Numerous other institutions within the University of Sierra Leone are involved in environmental and pesticides monitoring, and evaluation. These include the Departments of Biological Sciences and of Chemistry, the Institute of Marine Biology and Oceanography (IMBO), and the Division of Community Health at the College of Medicine and Allied Health Sciences. The Milton Margai College of Science and Technology is also teaching pesticide related modules.

6. Work Methodology

6.1 Objective

The main objective of the inventory of obsolete pesticides stock and associated wastes is to obtain detailed information on obsolete stocks of pesticides in Sierra Leone.

6.2 Specific objectives

Specifically, the inventory session aims to:

- Understand the volume of national obsolete pesticides and related risks and hazards;
- Use tools, equipment and equipment for the inventory of sites, depots and stocks of obsolete pesticides and associated waste;
- To implement the techniques of inventory of sites, depots and stocks of obsolete pesticides and associated waste;
- Conduct practical inventory exercises on a pesticide storage site.
- Produce a validated national obsolete pesticide inventory report

6.3 Expected results

- The volume of obsolete pesticides and associated hazards are known;
- Tools, equipment and equipment for the inventory of sites, depots and stocks of obsolete pesticides and associated waste are known;
- The techniques of conducting an inventory on sites, deposits and stocks of obsolete pesticides and associated waste are mastered;
- Participants received hands-on introduction to field inventory;
- An inventory report is available.

6.4 Conduct of Mission

The three national consultants and the National Focal Point of the Stockholm Convention who served at the supervisory role signed the Memorandum of Understanding (MoU) for the national inventory training and the protocol agreement for the inventory with Green Cross. The Stockholm focal point also signed a separate MoU with Green Cross to support oversight at country level. Green Cross funded both training and inventory process with the support of the GoSL. The national focal point in collaboration with the national consultants wrote this inventory of obsolete pesticides and associated wastes report after the inventory exercise. Below are the planned sites to be visited by the consultants within a period of two weeks.

Table 004: Showing suspected sites for obsolete pesticides and associated waste

| Clusters | Districts | MAFFS Stores (DO) | Agric Companies | Agro Dealers | Veterinary Stores | MOH Stores | Food Companies | Cleaning Companies | Total # of Sites | No. of Days |
|------------------------------|------------------|-------------------|-----------------|--------------|-------------------|------------|----------------|--------------------|------------------|-------------|
| Southern Province | Bo | 1 | 0 | 1 | 1 | 1 | | 1 | 5 | |
| | Bonthe | 1 | 1 | 1 | 1 | 1 | | 1 | 6 | |
| | Moyamba | 1 | 2 | 1 | 1 | 1 | | 1 | 7 | |
| | Pujejun | 1 | 1 | 1 | 1 | 1 | | 1 | 6 | |
| | Sub Total | 4 | 4 | 4 | 4 | 4 | 0 | 4 | 24 | 22 |
| Northern Province | Bombali | 1 | 1 | 1 | 1 | 1 | | 1 | 6 | |
| | Tonkolili | 1 | 1 | 1 | 1 | 1 | | 1 | 6 | |
| | Kambia | 1 | 1 | 1 | 1 | 1 | | 1 | 6 | |
| | Koinadugu | 1 | 2 | 1 | 1 | 1 | | 1 | 7 | |
| | Port Loko | 1 | 2 | 1 | 1 | 1 | | 1 | 7 | |
| | Sub Total | 5 | 7 | 5 | 5 | 5 | 0 | 5 | 32 | 30 |
| Eastern Province | Kailahun | 1 | 1 | 1 | 1 | 1 | | 1 | 6 | |
| | Kenema | 1 | 0 | 1 | 1 | 1 | | 1 | 5 | |
| | Kono | 1 | 0 | 1 | 1 | 1 | | 1 | 5 | |
| | Sub Total | 3 | 1 | 3 | 3 | 3 | 0 | 3 | 16 | 15 |
| Western Area (Urban & Rural) | W/Urban | 3 | 0 | 4 | 1 | 1 | 2 | 1 | 12 | |
| | W/Rural | 1 | 1 | 1 | 1 | 1 | | 1 | 6 | |
| | Sub Total | 4 | 1 | 5 | 2 | 2 | 2 | 2 | 18 | 18 |
| Grand Total | 16 | 13 | 17 | 14 | 14 | 2 | 14 | 90 | 85 | |

6.5 Work Plan

The country was divided into 4 regions, and a region assigned to each consultant and a team of national technicians for the inventory. Below is a work plan designed to guide the inventory process.

Table 005: Inventory schedule

| | | Nov-17 | | | | | | | | | | | | | | | | | | | | | | | | December | | | | |
|------------------------------|-----------|--------|---|---|---|----|--------|----|----|----|----|--------|----|----|----|----|--------|----|----|----|----|--------|----|----|----|----------|---|---|---|--------|
| | | Week 1 | | | | | Week 2 | | | | | Week 3 | | | | | Week 4 | | | | | Week 5 | | | | | | | | |
| Clusters | Districts | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 1 | 2 | 3 | 4..... |
| Training | | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Report Writing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ■ |
| Southern Province | Bo | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Bonthe | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Moyamba | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Pujejun | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| Northern Province | Bombali | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Tonkolili | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Kambia | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Koinadugu | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Port Loko | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| Eastern Province | Kailahun | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Kenema | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | Kono | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| Western Area (Urban & Rural) | W/Urban | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| | W/Rural | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |

■ means planned date of inventory per district

6.6 Equipment and Materials

Equipment and materials required for the inventory exercise were purchased by Green Cross Burkina Faso/Africa Regional Program (GCBF/ARP) and later handed over to the national experts. Amongst the list of items were ; Noise mask of various forms, DuPont Personal protection, Googles, hand gloves, rain boots, measuring tapes, Global positioning system, water cans, rubber bowls, long brushes, soap and baller bowls.

Writing files and forms of various types were also provided.

6.7 Methodology

Two days refresher training was conducted (one day theory and one day practical) to capacitate technicians and national experts on inventory tools and required skills. The training was prefaced with an opening ceremony in which speeches of commitments were made by key institutions on Pesticides management. GEF, UNE, Green Cross Switzerland and Burkina Faso funded the training and inventory. Green Cross Burkina Faso was the NGO hired to manage and supervise the inventory process in six countries including Sierra Leone. The lead institutions in Sierra Leone (MAFFS and EPA-SL) issued out letters of permission and a public announcement to all establishments and the public to support national experts during the inventory exercise in their institutions. The inventory started on the 7th November – 2nd December, 2017. Three national consultants were hired together with the Stockholm focal point. The three national consultants and the Stockholm focal point, each working alongside with three technicians from MAFFS, EPA, MOHS and the University of Sierra Leone, conducted the inventory. Interviews were held with pesticide warehouse managers, pictures were taken, sites visited, warehouses present, different obsolete pesticides and associated wastes were recorded on standard inventory forms. Below are the various forms of inventory forms used during the inventory exercise.

- Site Information
- Site Plan
- Store Plan
- Risk Analysis
- Pesticide
- Contaminated Soil
- Contaminated materials
- Empty Container

The country was divided into four regions and various districts within the regions among the national consultants for ease of conducting the inventory;

- Southern region (Bo, Pujehun, Bonthe and Moyamba Districts) – Mr. Hamidu Mansaray as team lead
- Eastern region (Kono, Kailahun and Kenema Districts)- Mr. Alie Mansaray as team lead
- Northern Region (Tonkolili, Kambia, Port Loko, Bombali and Koinadugu)- Ms. Raymonda A.B. Johnson as team lead
- Western Region (Western Rural and Western Urban) – Mr. Alie D Jalloh as team lead.

Each team discussed with stakeholders' in the various districts they worked in and made inquiries from other possible sources of vendors or institutions dealing with pesticides. The inventory was conducted in the following stores/warehouses:

- Ministry of Agriculture, Forestry and Food Security warehouses
- Ministry of Health and Sanitation Stores
- Local councils stores
- Agricultural company warehouses
- Cleaning companies stores
- Food company stores
- Agro dealers warehouses
- Agricultural Business Centers

The drafting of the report was divided into sections amongst the four inventory national experts, compiled and edited by the national focal point of the Stockholm Convention to Sierra Leone. A zero draft was submitted to Green Cross Burkina Faso for review and initial comments which were incorporated in the second draft. We will continue with this trend until the report is accepted by Green Cross and validated by stakeholders in Sierra Leone.

7. Results and Discussion

7.1 Summary of Obsolete pesticides inventory per Province

Table 006: Showing national summary of obsolete pesticides

| Province | Quantity of Obsolete Pesticide | |
|--------------|--------------------------------|-------------|
| | KG | L |
| North | 568 | 4300 |
| South | 335.008 | 2283 |
| East | 228 | 2548 |
| West | 88.1 | 815 |
| Total | 1219.108 | 9946 |

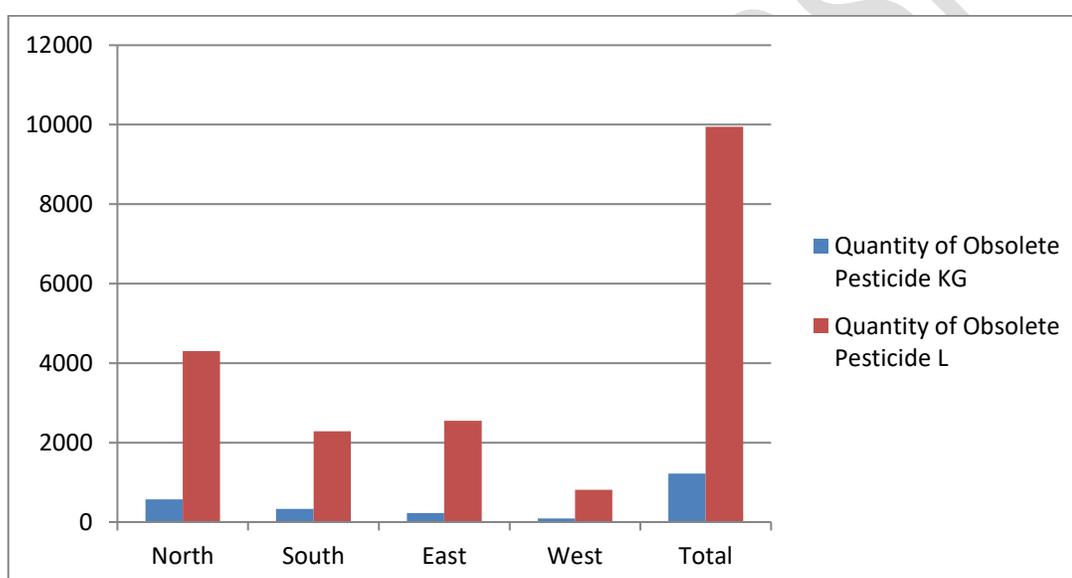


Figure 001: Graphical Plot showing quantity of pesticides per province

7.2 Quantity of stockpile of obsoletes pesticides per district

Table 007: Showing quantity of Stockpiles at district level

| Provinces | District | Quantity of Obsolete Pesticide | |
|--------------|--------------------|--------------------------------|-------------|
| | | KG | L |
| Northern | Port Loko | 207 | 1,014 |
| | Kambia | 0 | 0 |
| | Bombali | 165 | 775 |
| | Koinadugu | 61 | 751 |
| | Tonkolili | 135 | 1,760 |
| | Sub-Total | 568 | 4300 |
| Eastern | Kono | 2 | 1,625 |
| | Kenema | 26 | 583 |
| | Kailahun | 200 | 340 |
| | Sub-total | 228 | 2548 |
| Southern | Bo | 100 | 372 |
| | Pujehun | 235.008 | 1060 |
| | Bonthe | 0 | 654 |
| | Moyamba | 0 | 197 |
| | Sub-total | 335.008 | 2283 |
| Western Area | Western Urban Area | 88.1 | 815 |
| | Sub-total | 88.1 | 815 |
| TOTAL | | 1219.108 | 9946 |

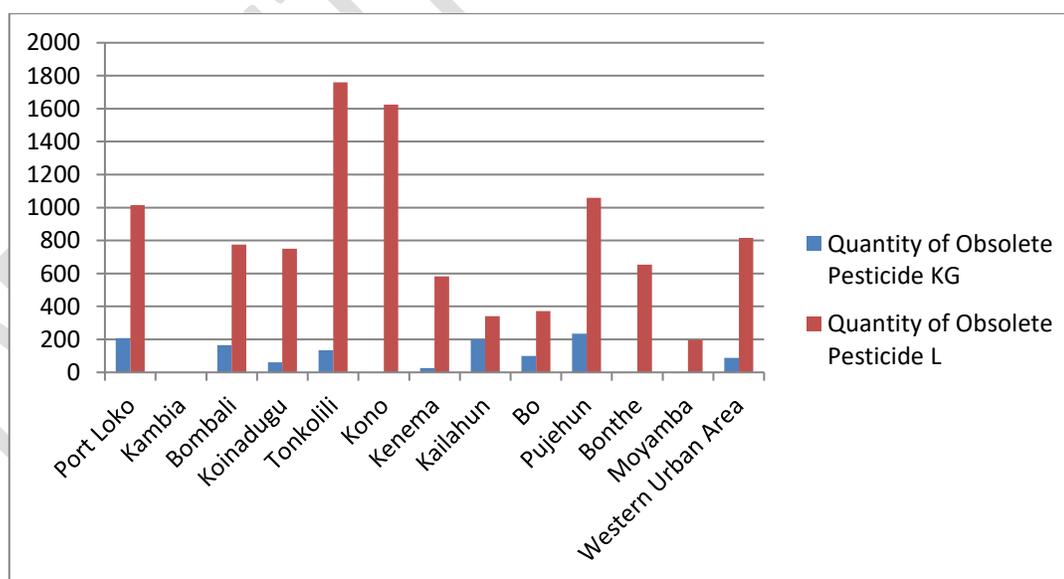


Figure 002: Graphical Plot showing quantity of pesticides per district

7.3 Summary of associated waste inventory

Table 008: Quantitative representation of associated wastes

| Province | District | Presence of associated waste/ Empty Containers |
|----------|--------------|------------------------------------------------|
| North | Bombali | 0 |
| | Tonkolili | 47 |
| | Koinadugu | 0 |
| | Kambia | 0 |
| | Port Loko | 0 |
| South | Bo | 0 |
| | Bonthe | 0 |
| | Moyamba | 0 |
| | Pujehun | 0 |
| East | Kailahun | 0 |
| | Kenema | 2 |
| | Kono | 0 |
| West | Urban | 87 |
| | Rural | 0 |
| | Total | 136 |

7.4 Obsolete Pesticides and Empty Container

Table 009: National Inventory of obsolete Pesticides and Associated Wastes (GPS Coordinates)

| Clusters | Districts | Sites | GPS | Obsolete | | Empty Containers |
|-------------------|-----------|-------------|-------------------------|----------|------|------------------|
| | | | | KG | Ltrs | |
| Southern Province | Bo | MAFFS Store | Latitude : N7° 56' 58" | 100 | 372 | 0 |
| | | | Longitude: W11° 44' 31" | | | |
| | | | Altitude: 71.4m | | | |
| | Bonthe | MAFFS Store | Latitude: N7° 36' 44" | 0 | 654 | 0 |
| | | | Longitude: W12° 10' 43" | | | |
| | | | Altitude: 18.4m | | | |
| | Moyamba | MAFFS Store | Latitude: N8° 10' 14" | 0 | 197 | 0 |
| | | | Longitude: W12° 25' 10" | | | |
| | | | Altitude: 68m | | | |
| | Pujehun | MAFFS Store | Latitude: N7° 21' 16" | 235.008 | 1060 | 0 |
| | | | Longitude: W11° 43' 3" | | | |
| | | | Altitude: 10.7m | | | |
| Northern Province | Bombali | MAFFS Store | Latitude: 08° 52' 701" | 165 | 775 | 0 |

| | | | | | | |
|-----------------------------------------|-----------------|--------------------------------|----------------------------------|-----------------|-------------|------------|
| | | | Longitude: 012° 02'737" | | | |
| | | | Altitude: 113m | | | |
| | Tonkolili | MAFFS Store | Latitude: 08° 43'288" | 135 | 1760 | 47 |
| | | | Longitude: 011° 57'026" | | | |
| | | | Altitude: 108m | | | |
| | Koinadugu | MAFFS Store | Latitude: 09° 35'502" | 61 | 751 | 0 |
| | | | Longitude: 011° 32'964" | | | |
| | | | Altitude: 3m | | | |
| | Port Loko | MAFFS Store | Latitude: 08° 45'977" | 207 | 1014 | 0 |
| | | | Longitude: 012° 46'833" | | | |
| | | | Altitude: 59m | | | |
| Eastern Province | Kailahun | MAFFS Store | Latitude: 08°16'455" | 200 | 340 | 0 |
| | | | Longitude: 010° 34'314" | | | |
| | | | Altitude: 339m | | | |
| | Kenema | MAFFS Store | Latitude : 07° 53'546" | 26 | 583 | 2 |
| | | | Longitude: 011° 10'798" | | | |
| | | | Altitude: 182m | | | |
| Kono | MAFFS Store | Latitude: 08° 38'676" | 2 | 1625 | 0 | |
| | | Longitude: W11° 44'31" | | | | |
| | | Altitude: 399m | | | | |
| Western Area (Urban & Rural) | W/Urban | MAFFS Store | Latitude: N08° 28'578" | 88.1 | 815 | 87 |
| | | | Longitude: W013° .11'632" | | | |
| | | | Altitude: 50m | | | |
| | Kjal Enterprise | | Latitude: N08° 28'774" | 0 | 0 | 0 |
| | | | Longitude: W013°12'391" | | | |
| | | | Altitude: 41m | | | |
| MoHS Store | | Latitude: N08° 28'210" | 0 | 0 | 0 | |
| | | Longitude: W013°14'371" | | | | |
| | | Altitude: 83m | | | | |
| TOTAL | | | | 1219.108 | 9946 | 136 |

7.5 National Obsolete Pesticide and Associated waste Distribution

Table 010: National obsolete pesticide and associated waste distribution

| No | Pesticide Name | | North | | | | | | South | | | | East | | | West | | Total | | | |
|----|--------------------------------|--------------------------------------------------|-------|------------|----------|-----------|------------|--------|-----------|-------------|------|---------|----------|----------|-----------|--------|------|-------|-------|------|-------|
| | | | Trade | Ingredient | Bomb ali | Port Loko | Koina dugu | Kambia | Tonkolili | | Bo | Bont he | Moy amba | Puje hun | Kail ahun | Kenema | Kono | | Urban | | Rural |
| | | | | | Full | Full | Full | Full | Full | Empty Cont. | Full | Full | Full | Full | Full | Full | Full | | Full | Full | Empty |
| 1 | ACETELLI C SUPER DUST | Primiphos-methyl (16 g/kg), Permethrine (3 g/kg) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | | |
| 2 | Atrazine | Atrazine | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 11 | | |
| 3 | bio pesticide | Methyl anisopliae | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | | |
| 4 | Bio-Pesticide | NILL | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| 5 | Bio-Pesticides (Green Mouscle) | Nil | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | |
| 6 | Butachlor | Butachlor | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | | |
| 7 | Carbaryl | Carbaryl | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | | |
| 8 | Chloropyrifos | Chloropyrifos Ethyl | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 9 | | |
| 9 | CHLORPANE 480 EC | Chlopyrifos-ethyle (g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | | |
| 10 | CYFLANE | Cyfluthrine (50 g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | | |
| 11 | DIAZIN | Diazinon (600 g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | | |
| 12 | Diazinon | Diazinon | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 9 | | |
| 13 | DICHLORVOS 50% EC | Dichlorvos | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | | |
| 14 | Difenoconazole | Difenoconazole | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | | |
| 15 | DIURANE | Diuron (80% w/w) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | | |

| | | | | | | | | | | | | | | | | | | | | |
|----|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|
| 16 | EIS/WOU DOU- MATRINE -SAKO | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 17 | Glyphosate | Glyphosate | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 6 |
| 18 | Green Muscle | Metarhizium Annisopliae | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 19 | KOCIDAN E | Cupric Hydroxide (77% w/w), inert ingredient (23% w/w), metallic copper equivalent (50% w/w) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |
| 20 | Kocide 101 | Cypric hydroxide | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 3 | |
| 21 | K- OPTIMAL | Lambda- cyhalothrin (15 g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | |
| 22 | MALATHI ON | Malathion (50 g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | | |
| 23 | Mancozane | Mancozebe | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 7 | |
| 24 | Methomyl | Methomyl | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | |
| 25 | Methyl Eugenol | Methyl Anisopliae/ 4- allyl-1,2- dimethoxyben zene | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | |
| 26 | Nil | Nil | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | |
| 27 | OXADIAZ ON 250 EC | Oxadiazon | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 10 | |
| 28 | Paraquat | Paraquat | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 8 | |
| 29 | PERMETH RIN | Permethrin (100 g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | |
| 30 | PFA-2000- 1 | Sodium Laurel Sulphate (8 g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| 31 | Propanil | Propanil | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 9 | |

| | | | | | | | | | | | | | | | | | | | | |
|----|-------------------|----------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | Propiconazole | Propiconazole | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| 33 | QUIZALOPANE | Quizalofop-p-ethyl (g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 34 | RIGOLD 432 EC | Propanil (360 g/L), Triclopyr (72 g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 35 | Round-all | Ethoxylated tallowed amine | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 36 | Round-All (Koola) | Elyphosate | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 37 | Samo extra | Sel d'amine | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 38 | SARATHI ON | Malathion (500 g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 39 | Super Extra | 2,4-D Sel d'amine | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 40 | Yuper Star | Propanil | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 41 | Yupercide | Copper hydroxide | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 42 | YUSBAN | Chlorpyrifos (480 g/L) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |

| Key |
|-----------------|
| 1 means present |
| 0 means absent |

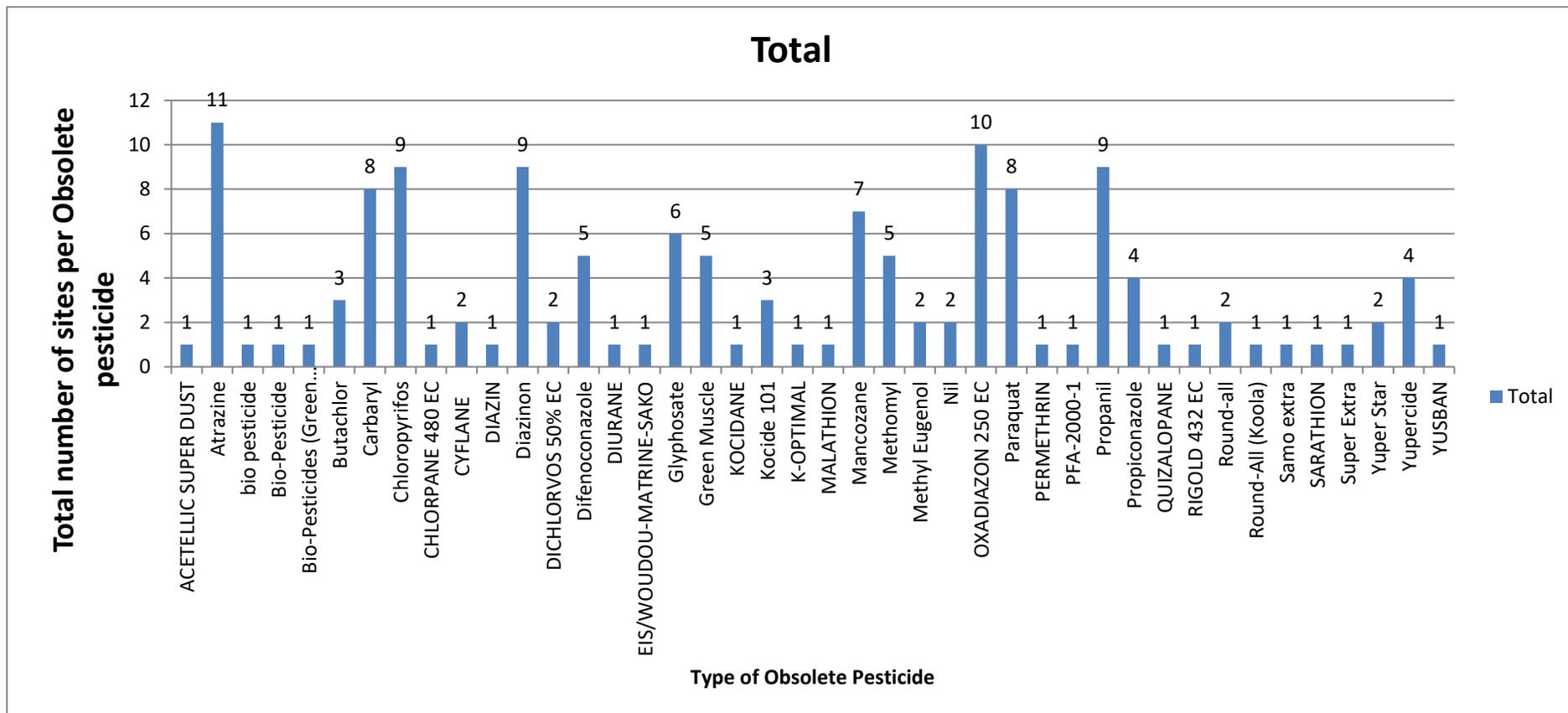


Figure showing graphical representation of national inventory of OP& AW

7.6 Photos of Obsolete Pesticides and Associated waste

Photo 001: Pictorial representation of obsolete pesticides and associated wastes



Photo 001.01 Propanil 365 EC / Kissy MAFFS Store

Photo 001.02 Green Muscle/MAFFS Pujehun



Photo 001.03 Chloropyrifos 480 EC/MAFFS Bo

Photo 001.04 Difenoconazole 250 SC/MAFFS Bombali

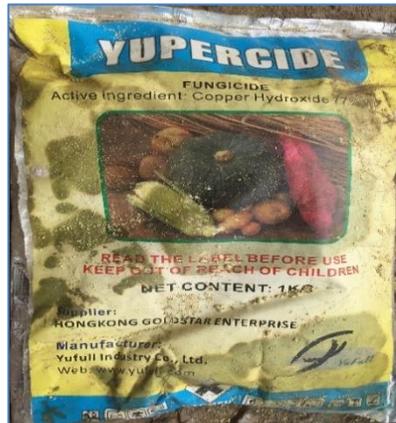


Photo 001.05 Butachlor/
MAFFS Bonthe



Photo 001.06
Yupercide/MAFFS Port Loko

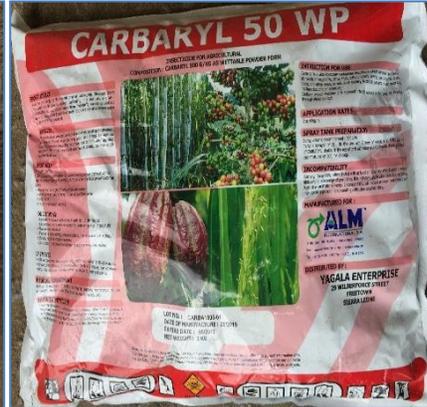


Photo 001.07 Oxadiazon 250
EC/MAFFS Kissy store



Photo 001.08 Diazinon 60
EC/MoHS Store

Photo 001.09 Carbaryl 50
WP/MAFFS Bo

Photo 001.010
Glyphosate/MAFFS Bo



Photo 001.011 Propiconazole 250
EC/ MAFFS Bombali

Photo 001.012 Atrazine 500
SC/MAFFS Bonthe

Photo 001.013 Round-All
(Koola)/MAFFS Bonthe



Photo 001.014
Methomyl/MAFFS Bombali

Photo 001.015
Mancozane/MAFFS Pujehun

Photo 001.016 Bio-
Pesticide/MAFFS Kenema



Photo 001.017
Paraquat/MAFFS Bo



Photo 001.018 Yuper
Star/MAFFS Port Loko



Photo 001.019
Glyphosate/MAFFS Bo



Photo 001.020 Super
Extra/MAFFS Tonkolili



Photo 001.021 Samo
extra/MAFFS Tonkolili



Photo 001.022 Kocide
101/MAFFS Store Kissy



Photo 001.023
Methyl
Eugenol/MAFFS
kissy Store



Photo 001.024 ACETELLIC SUPER
DUST/ MAFFS Store Kissy



Photo 001.025 Kocidane/Tjal
Enterprise



Photo 001.026
Chlorpane/Tjal Enterprise



Photo 001.027 Cyflane
EC/Tjal Enterprise



Photo 001.028
Quizalopane/Kjal Enterprise



Photo 001.029 Diurane/Tjal Enterprise

7.7 Photos of warehouse of Obsolete Pesticides and Associated waste
7.7.1 Western Area



Photo 002: MAFFS Store Kissy Freetown



Photo 002.01: Ceiling of MAFFS store Kissy



Photo 003: Tjal Enterprises Peace Market



Photo 003.01: Tjal Enterprises Kingtom



Photo 004: MoHS Entomology Store New England

7.7.2 Northern Province



Photo 005: Bombali District MAFFS Store



Photo 006: Koinadugu District MAFFS Store



Photo 007: Port Loko District MAFFS Store



Photo 008: Tonkolili District MAFFS Store

7.7.3 Eastern Province



Photo 009: Kailahun District MAFFS Store



Photo 010: Kono District MAFFS Store



Photo 011: Kenema District.

7.7.4 Southern Province



Photo 012: Bo District MAFFS Store



Photo 013: Moyamba District MAFFS Store



Photo 014: Pujehun District MAFFS Store

8. Challenges

Despite the success in achieving the overall output of the exercise, the inventory was faced with challenges herewith listed

- The non-availability of national emergency phone numbers for Police and Hospitals. The experts had to seek personal contact details from service providers in this industry.
- The time frame for the inventory was limited to cover the province due to distances and poor road network in some location.
- Difficult terrains in locating pesticide storage facilities.
- Insufficient funding
- Non-availability of a high resolution camera
- Smuggling of pesticides through our borders with neighboring country
- Low awareness and unwillingness on businesses to disclose source and use of pesticides
- Businesses do not have a register of buyers from the public

9. Limitations of The study

- Pesticides were not properly packed in some stores, thus more time was spent in the inventory exercise
- Some of the organization stored their pesticides in two different store location
- Could not trace buyers from established businesses due to the absence of a business trail register

10. Recommendations

| No | Recommendations | Owner |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 1 | Labels of all OP & AW to be preserved at all time | Store Managers |
| 2 | Always maintain a stock movement card for each agro-chemicals | Store Managers |
| 3 | Provide storekeepers with the required technical skills to manage agro-chemicals | GoSL |
| 4 | Agro-chemical dealers to maintain stock management system and maintain a register of users | Retailers |
| 5 | Undertake a national chemical profile study for Sierra Leone | GoSL |
| 6 | To provide GPS and digital cameras of the same make and type in other to harmonize results | GCBF |
| 7 | Establish emergency phone numbers in police and hospital centers | GoSL |
| 8 | Improve road network and increase timeframe of national inventory | GoSL and GCBF |
| 9 | Make pesticide storage facilities easily accessible | GoSL |
| 10 | Increase funding to facilitate motivation | GCBF |
| 11 | Always provide a camera with high resolution for clear images | GCBF/National Expert |
| 12 | Increase border security and provide incentive schemes to stop smuggling | GoSL |
| 13 | Timeframe for inventory on obsolete pesticides should be extended to a minimum of three months in any future exercise to enable local experts' sufficient time to ensure repeatability and reproducibility of results. | GCBF |
| 14 | Stakeholders at the national level to immediately come up with guidelines for pesticide business operatives to commence tracking buyers. | GoSL |
| 15 | The project implementers and governments may consider undertaken Obsolete pesticides inventory to once every 2 years | GoSL |
| 16 | Operationalize a monitoring system for managing pesticide stocks | GoSL |
| 17 | Promote the application of organic farming. | GoSL |

11. Conclusion

This report corroborates the 2008 pesticide inventory report that was conducted as a subset of the overall National Implementation Plan report of the Stockholm Convention for Sierra Leone. It is certain that Sierra Leone is hosting obsolete pesticides and associated waste. No action to safely dispose these hazardous substances was undertaken since 2008 report. In 2017, stockpiles have also been identified. The cost of inaction is irreversible to the environment if we continue to give a blind eye to this reality. It is incumbent on all stakeholders to support each other in a direction that will prevent contamination of the environment that will subsequently affect the aquatic and terrestrial ecosystems. Man will ultimately be affected. As a team (MAFFS, MoHS and EPA), we therefore call on the global environmental platforms to support a Least Developed Country like Sierra Leone to address the problem of managing obsolete pesticides and associated waste

DEFINITIVE VERSION

12. Annexes

Annex 1: Detailed Inventory Results

| N° | NOM COMMERCIAL | Matières actives | Nature (In, He, Fo, Dé, Ra,)** | Formulation | Fabricant/ Fournisseur | 5.6.1 Southern PROVINCE /SIERRA LEONE | | | | | | | | | | | |
|----|--------------------------|----------------------------------------|--------------------------------|-------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------|--------|--------|------------------|-------------------------------|-----------------------|-------------------|-----------------------------------------|-------------------|-----------------------------------|--------------------|
| | | | | | | Nom du dépôt | Emballage | | | | Etat(I, F, D)* de l'emballage | Pesticide déjà périmé | | Pesticide à date d'expiration imminente | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Taille | Nombre | Quantité (Kg, L) | | Date de fabrication | Date d'expiration | Date de fabrication | Date d'expiration | | |
| 1 | PFA-2000-1 | Sodium Laurel Sulphate (8 g/L) | Liquid (pumpable) | Nil | Pesmagri Chemicals Pest Control, 24A Main Road, Juba Hill, Freetown, Sierra Leone | Agriculture Compound (Moyamba) | Plastic Bottle | 1L | 197 | | 197 | Intact | 10/11/2004 | 10/11/2007 | | | Not shown on label |
| 2 | ATRAZINE 500 g/L, SC | Atrazine (500 g/L) | Liquid (pumpable) | SL | ALM International, 75004 Paris, France | Ministry of Agriculture, Forestry and Food Security Store (Bonthe) | Plastic Bottle | 1 L | 540 | | 540 | Intact | Oct-13 | Oct-15 | | | Harmful |
| 3 | ROUND ALL (Koola) 41% SL | NA | Liquid (pumpable) | SL | Yufull Industry Co. Ltd. China | Ministry of Agriculture, Forestry and Food Security Store (Bonthe) | Plastic Bottle | 1L | 30 | | 30 | Intact | 1/11/2013 | Nov-16 | | | Harmful |
| 4 | BUTACHLOR | Butachlor (50 g/L) | Liquid (pumpable) | EC, SL | GAIA Resources | Ministry of Agriculture, Forestry and Food Security Store (Bonthe) | Plastic Bottle | 1L | 24 | | 24 | Intact | 8/1/2014 | 8/1/2017 | | | Not shown on label |
| 5 | PROPANIL | Propanil (36 g/L) | Liquid (pumpable) | SL | NA | Ministry of Agriculture, Forestry and Food Security Store (Bonthe) | Plastic Bottle | 1L | 60 | | 60 | Intact | 10/8/2009 | 10/8/2011 | | | Not shown on label |
| 6 | RIGOLD 432 EC | Propanil (360 g/L), Triclopyr (72 g/L) | Liquid (pumpable) | EC | SCPA Sivex International, 23-25 Rue de Bern, 75008 Paris | Ministry of Agriculture, Forestry and Food Security Store (China Farm) - Bo | Plastic Bottle | 1L | 2 | | 2 | Intact | NA | NA | | | Harmful |

| N° | NOM COMMERCIAL | Matières actives | Nature (In, He, Fo, Dé, Ra,)** | Formulation | Fabricant/Fournisseur | 5.6.1 Southern PROVINCE /SIERRA LEONE | | | | | | | | | | UN Chemical Hazard Classification | |
|----|---------------------|------------------------------|--------------------------------|-------------|----------------------------------------|----------------------------------------------------------------------------|----------------|--------|--------|------------------|-------------------------------|-----------------------|-------------------|-----------------------------------------|-------------------|-----------------------------------|--------------------|
| | | | | | | Nom du dépôt | Emballage | | | | Etat(I, F, D)* de l'emballage | Pesticide déjà périmé | | Pesticide à date d'expiration imminente | | | |
| | | | | | | | Type | Taille | Nombre | Quantité (Kg, L) | | Date de fabrication | Date d'expiration | Date de fabrication | Date d'expiration | | |
| 7 | CHLORPYRIFOS 480 EC | Chlorpyrifos-ethyl (480 g/L) | Liquid (pumpable) | EC | ALM International, 75004 Paris, France | Ministry of Agriculture, Forestry and Food Security Store(China Farm) - Bo | Plastic Bottle | 1L | 30 | | 30 | Intact | May-15 | May-17 | | | Harmful |
| 8 | DIAZINN 60 EC | Diazinn (600 g/L) | Liquid (pumpable) | EC | ALM International, 75004 Paris, France | Ministry of Agriculture, Forestry and Food Security Store(China Farm) - Bo | Plastic Bottle | 1L | 80 | | 80 | Intact | May-15 | May-17 | | | Toxic |
| 9 | GLYPHOSATE | Glyphosate (480 g/L) | Liquid (pumpable) | Nil | GAIA Resources | Ministry of Agriculture, Forestry and Food Security Store(China Farm) - Bo | Plastic Bottle | 1L | 120 | | 120 | Intact | Aug-14 | Aug-17 | | | Toxic |
| 10 | CARBARYL 50 WP | Carbaryl (500 g/Kg) | Powder (flowable) | WP | ALM International, 75004 Paris, France | Ministry of Agriculture, Forestry and Food Security Store(China Farm) - Bo | Plastic Bag | 1KG | 100 | 100 | | Intact | 5/1/2015 | 5/1/2017 | | | Toxic |
| 11 | OXADIAZON 250 EC | Oxadiazon (250 g/L) | Liquid (pumpable) | EC | ALM International, 75004 Paris, France | Ministry of Agriculture, Forestry and Food Security Store(China Farm) - Bo | Plastic Bottle | 1L | 110 | | 110 | Intact | May-15 | May-17 | | | NOCIF |
| 12 | PARAQUAT 200 SL | Paraquat (200 g/L) | Liquid (pumpable) | SL | ALM International, 75004 Paris, France | Ministry of Agriculture, Forestry and Food Security Store(China Farm) - Bo | Plastic Bottle | 1L | 30 | | 30 | Intact | May-15 | May-17 | | | NOCIF |
| 13 | Nil | Nil | Powder (flowable) | Nil | Nil | Agriculture Compound, Pujehun | Plastic Bag | 1kg | 8 | 0.008 | | Intact | Nil | Nil | | | Not shown on label |

| N° | NOM COMMERCIAL | Matières actives | Nature (In, He, Fo, Dé, Ra,)** | Formulation | Fabricant/Fournisseur | 5.6.1 Southern PROVINCE /SIERRA LEONE | | | | | | | | | | | |
|----|---------------------|------------------------------|--------------------------------|-------------|-------------------------------------------------|---------------------------------------|----------------|--------|--------|----------|-------------------------------|-----------------------|-------------------|-----------------------------------------|-------------------|-----------------------------------|--------------------|
| | | | | | | Nom du dépôt | Emballage | | | | Etat(I, F, D)* de l'emballage | Pesticide déjà périmé | | Pesticide à date d'expiration imminente | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Taille | Nombre | Quantité | | Date de fabrication | Date d'expiration | Date de fabrication | Date d'expiration | | |
| 14 | MANCOZANE 80 WP | Mancozeb (50 g/L) | Powder (flowable) | WP | Enterprise Tidiane Agriculture, Conakry, Guinea | Agriculture Compound, Pujehun | Plastic Bag | 1kg | 3 | 3 | | Intact | May-15 | May-17 | | | Not shown on label |
| 15 | GREEN MUSCLE | Metarhizium Anispline | Powder (flowable) | Nil | ALM International, 75004 Paris, France | Agriculture Compound, Pujehun | Plastic Bag | 1kg | 2 | 2 | | Intact | May-15 | May-17 | | | Not shown on label |
| 16 | CARBARYL 50 WP | Carbaryl (500 g/Kg) | Powder (flowable) | WP | ALM International, 75004 Paris, France | Agriculture Compound, Pujehun | Plastic Bag | 1kg | 230 | 230 | | Intact | May-15 | May-17 | | | Toxic |
| 17 | ATRAZINE 500, SC | Atrazine (500 g/L) | Liquid (pumpable) | SC | ALM International, 75004 Paris, France | Agriculture Compound, Pujehun | Plastic Bottle | 1L | 510 | | 510 | Intact | Oct-13 | Oct-15 | | | NOCIF |
| 18 | DIAZINON 60 EC | Diazinon (600 g/L) | Liquid (pumpable) | EC | ALM International, 75004 Paris, France | Agriculture Compound, Pujehun | Plastic Bottle | 1L | 250 | | 250 | Intact | May-15 | May-17 | | | Toxic |
| 19 | OXADIAZON 250 EC | Oxadiazon (250 g/L) | Liquid (pumpable) | EC | ALM International, 75004 Paris, France | Agriculture Compound, Pujehun | Plastic Bottle | 1L | 150 | | 150 | Intact | May-15 | May-17 | | | NOCIF |
| 20 | CHLORPYRIFOS 480 EC | Chlorpyrifos-ethyl (480 g/L) | Liquid (pumpable) | EC | ALM International, 75004 Paris, France | Agriculture Compound, Pujehun | Plastic Bottle | 1L | 150 | | 150 | Intact | May-15 | May-17 | | | NOCIF |

Annex 2: Showing inventory results from the Western Area

| N° | NOM COMMERCIAL | Matières actives | Nature (In, He, Fo, Dé, Ra,)** | Formulation | Fabricant/ Fournisseur | 5.6.2 Western Area /SIERRA LEONE | | | | | | | | | | | |
|----|-------------------|----------------------------------------------------------------------------------------------|--------------------------------|-------------|-----------------------------------------|--------------------------------------------------------------------------|-----------------|---------|---------|------------------|-------------------------------|-----------------------|-------------------|-----------------------------------------|-------------------|-----------------------------------|--------------------|
| | | | | | | Nom du dépôt | Emballage | | | | Etat(I, F, D)* de l'emballage | Pesticide déjà périmé | | Pesticide à date d'expiration imminente | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Taille | Nom bre | Quantité Kg L | | Date de fabrication | Date d'expiration | Date de fabrication | Date d'expiration | | |
| 1 | KOCID ANE | Cupric Hydroxide (77% w/w), inert ingredient (23% w/w), metallic copper equivalent (50% w/w) | Powder (flowable) | WP | Shangai - Kelinon Agro-chemical Co. Ltd | Tjal Enterprise | Aluminum sachet | 500 G | 41 | 4.1 | | Intact | 11/6/2015 | Not shown on label | | | |
| 2 | CYFLA NE EC | Cyfluthrin e (50 g/L) | Liquid (pumpable) | EC , ULV | Shangai - Kelinon Agro-chemical Co. Ltd | Tjal Enterprise | Plastic bottle | 1L | 52 | | 52 | Intact | 11/4/2015 | Not shown on label | | | 1 (toxic) |
| 3 | QUIZA LOPAN E | Quizalofop -p-ethyl (g/L) | Liquid (pumpable) | EC | Shangai - Kelinon Agro-chemical Co. Ltd | Tjal Enterprise | Plastic bottle | 1L | 26 | | 26 | Intact | | | 11/19/2017 | Not shown on label | |
| 4 | CHLO RPANE 480 EC | Chlopyrifos-ethyle (g/L) | Liquid (pumpable) | EC , ULV | Shangai - Kelinon Agro-chemical Co. Ltd | Tjal Enterprise | Plastic bottle | 1L | 12 | | 12 | Intact | 11/3/2017 | Not shown on label | | | 1 (toxic) |
| 5 | DIURANE | Diuron (80% w/w) | Powder (flowable) | WP | Shangai - Kelinon Agro-chemical Co. Ltd | Tjal Enterprise | Plastic sachet | 1kg | | | | Intact | 2/11/2014 | 2/11/2017 | | | |
| 6 | DICHLORVOS 50% EC | Dichlorvos | Liquid (pumpable) | EC | Yagala Enterprise - Freetown | Kissy Central Store - Ministry of Agriculture Forestry and Food Security | Plastic bottle | Leakage | 88 | | 88 | Leakage | 9/10/2011 | 9/10/2013 | | | Not shown on label |

| N° | NOM COMMERCIAL | Matières actives | Nature (In, He, Fo, Dé, Ra)** | Formulation | Fabricant/ Fournisseur | 5.6.2 Western Area /SIERRA LEONE | | | | | | | | | | | |
|----|---------------------|---------------------------------------------------|-------------------------------|-------------|--------------------------------|--------------------------------------------------------------------------|-------------------|---------------------------------|--------|--------------------|-------------------------------|---------------------------------|--------------------|-----------------------------------------|-------------------|-----------------------------------|--------------------|
| | | | | | | Nom du dépôt | Emballage | | | | Etat(I, F, D)* de l'emballage | Pesticide déjà périmé | | Pesticide à date d'expiration imminente | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Taille | Nombre | Quantité Kg L | | Date de fabrication | Date d'expiration | Date de fabrication | Date d'expiration | | |
| 7 | ACETELIC SUPER DUST | Pirimyphos-methyl (16 g/kg), Permethrine (3 g/kg) | Powder (caked) | DP | Not indicated | Kissy Central Store - Ministry of Agriculture Forestry and Food Security | Plastic sachet | destroyed and content dispersed | | | | destroyed and content dispersed | Not shown on label | Not shown on label | | | Attention |
| 8 | KOCIDE 101 | Cupric Hydroxide (77% w/w) | Powder (flowable) | DP | Not indicated | Kissy Central Store - Ministry of Agriculture Forestry and Food Security | Aluminum sachet | 1Kg | 480 | 24 | | Intact | Not shown on label | Not shown on label | | | Not shown on label |
| 9 | OXADIAZON 250 EC | Oxadiazon (250 g/L) | Liquid (pumpable) | EC | Yagala Enterprise - Freetown | Kissy Central Store - Ministry of Agriculture Forestry and Food Security | Plastic bottle | 1L | 1 | | 1 | Intact | May-15 | May-17 | | | NOCIF |
| 10 | METHYL EUGENOL | 4-allyl-1,2-dimethoxy benzene | Liquid (pumpable) | NA | ALM International S.A - France | Kissy Central Store - Ministry of Agriculture Forestry and Food Security | Plastic jerry can | 1L | 12 | 60 | | Intact | Oct-13 | Oct-15 | | | |
| 11 | PROPANIL 36% EC | Propanil | Liquid (pumpable) | EC | Yagala Enterprise - Freetown | Kissy Central Store - Ministry of Agriculture Forestry and Food Security | Plastic bottle | 1L | 636 | | 636 | Intact | 10/28/2009 | 11/28/2011 | | | Not shown on label |
| 12 | SARATHION | Malathion (500 g/L) | NA | NA | ALM International S.A - France | Medical Entomology (Ministry of | Plastic bottle | Empty container | 1 | | 1 | | NA | NA | NA | | Not show |

| N° | NOM COMMERCIAL | Matières actives | Nature (In, He, Fo, Dé, Ra,)** | Formulation | Fabricant/ Fournisseur | 5.6.2 Western Area /SIERRA LEONE | | | | | | | | | | | |
|----|-------------------------|-----------------------------|--------------------------------|-------------|---------------------------------------------------------------------------------------|--------------------------------------------------------|----------------|-----------------|--------|--------------------|-------------------------------|-----------------------|-------------------|-----------------------------------------|-------------------|-----------------------------------|--------------------|
| | | | | | | Nom du dépôt | Emballage | | | | Etat(I, F, D)* de l'emballage | Pesticide déjà périmé | | Pesticide à date d'expiration imminente | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Taille | Nombre | Quantité Kg L | | Date de fabrication | Date d'expiration | Date de fabrication | Date d'expiration | | |
| | | | | | | Health and sanitation) | | | | | | | | | | Not shown on label | |
| 13 | PERMETHRIN | Permethrin (100 g/L) | NA | NA | VAPCO(Veterinary and Agricultural Products Manufacturing Co.Ltd. Jordan | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 1 | | 1 | | NA | NA | NA | | Harmful |
| 14 | ATRAZINE | Atrazine (500 g/L) | NA | NA | ALM International S.A - France | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 1 | | 1 | | NA | NA | NA | | Harmful |
| 15 | EIS/WOUDOU-MATRINE-SAKO | Lambda-cyhalothrin (25 g/L) | NA | NA | Right Spring Ltd. Guinee | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 1 | | 1 | | NA | NA | NA | | Harmful |
| 16 | DIAZIN | Diazinon (600 g/L) | NA | EC | SCPA Sivex Intl. 75008 Paris, France | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 18 | | 18 | | NA | NA | NA | | Harmful |
| 17 | YUSBAN | Chlorpyrifos (480 g/L) | NA | NA | YufullIndustry Co. Ltd. China (www.yufull.com) | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 5 | | 5 | | NA | NA | NA | | Harmful |
| 18 | DIAZINON 60 EC | Diazinon (600 g/L) | NA | EC | ALM International S.A, 75004 Paris - France/Yagala Enterprise, 29 Wilberforce Street, | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 5 | | 5 | | NA | NA | NA | | Not shown on label |

| N° | NOM COMMERCIAL | Matières actives | Nature (In, He, Fo, Dé, Ra,)** | Formulation | Fabricant/ Fournisseur | 5.6.2 Western Area /SIERRA LEONE | | | | | | | | | | |
|----|----------------|-----------------------------|--------------------------------|-------------|----------------------------------------------------------|--------------------------------------------------------|----------------|-----------------|--------|--------------------|--------------------------------|-----------------------|-------------------|-----------------------------------------|-------------------|-----------------------------------|
| | | | | | | Nom du dépôt | Emballage | | | | Etat (I, F, D)* de l'emballage | Pesticide déjà périmé | | Pesticide à date d'expiration imminente | | UN Chemical Hazard Classification |
| | | | | | | | Type | Taille | Nombre | Quantité Kg L | | Date de fabrication | Date d'expiration | Date de fabrication | Date d'expiration | |
| | | | | | Freetown, Sierra Leone | | | | | | | | | | | |
| 19 | Nil | Nil | NA | NA | Nil | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 4 | 4 | | NA | NA | NA | | Not shown on label |
| 20 | CHLORPYRIFOS | Chlorpyrifos (480 g/L) | NA | EC | ALM International S.A - France | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 14 | 14 | | NA | NA | NA | | Harmful |
| 21 | MALATHION | Malathion (50 g/L) | NA | NA | FGA Industries, Church Lane, Yardley Hasting, UK | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 1 | 1 | | NA | NA | NA | | Harmful |
| 22 | CYFLA NE | Cyfluthrin e (50 g/L) | NA | NA | Shangai - Kelinon Agro-chemical Co. Ltd, Shaingai, China | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 4 | 4 | | NA | NA | NA | | Not shown on label |
| 23 | K-OPTIMAL | Lambda-cyhalothrin (15 g/L) | NA | NA | SCPA Sivex Intl. 75008 Paris, France | Medical Entomology (Ministry of Health and sanitation) | Plastic bottle | Empty container | 1 | 1 | | NA | NA | NA | NA | Harmful |

5.6.3 Northern Province

Annex 3: Bombali District Inventory

| N° | Trade name | active ingredient | Nature (In, He, Fo, Dé, Ra,)** | Formulation | manufacturer/supplier | Bombali District | | | | | | | | | | |
|----|---------------|----------------------------|--------------------------------|-------------|-----------------------------|-------------------------|-----------|-----------------------|-----|------------------|----------------------------------|---------------------------|-------------------------------------|-----------------------|-----------------------------------|--------------------|
| | | | | | | name of supplier | Emballage | | | | State (I, F, D) of the packaging | Pesticide already expired | Pesticide with imminent expiry date | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Quantity in container | NO | quantity Kg L | | | expiry date | date of manufacturing | | expiry date |
| 1 | Glyphosate | Glyphosate | g/l | ULV | NIL | NIL | plastic | 1L | 22 | | 1 | intact | Oct-13 | 10/9/2011 | | Not shown on label |
| 2 | Propanil | Propanil | g/l | EC | NIL | Yagala Enterprise | plastic | 1L | 371 | | 1 | intact | 10/8/2011 | Oct-09 | | Not shown on label |
| 3 | Butachlor | Butachlor | g/l | EC | NIL | Seed Tech International | plastic | 1L | 24 | | 1 | intact | | Aug-14 | Aug-17 | Toxic |
| 4 | Diazinon | Diazinon | g/l | EC | NIL | Yagala Enterprise | plastic | 1L | 8 | | 1 | intact | | May-15 | May-17 | Toxic |
| 5 | Carbaryl | Carbaryl | g/kg | WP | NIL | Yagala Enterprise | plastic | 500g | 100 | 1 | | intact | | 5/15/2017 | 5/17/2017 | Toxic |
| 6 | Difenconazole | Difenconazole | g/l | SC | Nil | Yagala Enterprise | plastic | 1L | 12 | | 1 | intact | 15-Oct | Oct-13 | | NOCIF |
| 7 | Oxadiazon | Oxadiazon | g/l | EC | NIL | ALM International | plastic | 1L | 33 | | 1 | intact | 15-Nov | Nov-13 | | NOCIF |
| 8 | Propanil | Propanil | g/l | EC | NIL | Yagala Enterprise | plastic | 1L | 21 | | 1 | intact | | May-15 | May-17 | NOCIF |
| 9 | Round-all | Ethoxylated tallowed amine | g/l | SL | Yufull Industry Company Ltd | Hongkong Goldstar | plastic | 1L | 2 | | 1 | intact | 16-Nov | Nov-17 | | NOCIF |

| N° | Trade name | active ingredient | Nature (In, He, Fo, Dé, Ra)** | Formulation | manufacturer/supplier | Bombali District | | | | | | | | | | |
|----|-----------------|-----------------------|-------------------------------|-------------|-----------------------------|-------------------|-----------|-----------------------|-----|----------|----------------------------------|---------------------------|-------------------------------------|-----------------------|-----------------------------------|---------------|
| | | | | | | name of supplier | Emballage | | | | State (I, F, D) of the packaging | Pesticide already expired | Pesticide with imminent expiry date | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Quantity in container | NO | quantity | | | expiring date | date of manufacturing | | expiring date |
| | | | | | | | | | | Kg | | L | | | | |
| 10 | Atrazine | Atrazine | g/l | SC | NIL | ALM International | plastic | 1L | 257 | 1 | intact | Oct-15 | Oct-17 | | | NOCIF |
| 11 | CAhloro pyrifos | Cahloro pyrifos Ethyl | g/l | EC | NIL | Yagala Enterprise | plastic | 1L | 6 | 1 | intact | | 15-May | 17-May | NOCIF | |
| 12 | Paraquat | Paraquat | g/l | SL | NIL | ALM International | plastic | 1L | 1 | 1 | intact | 15-Oct | 13-Oct | | NOCIF | |
| 13 | Propiconazole | Propiconazole | g/l | EC | NIL | Yagala Enterprise | plastic | 75% | 18 | 1 | leakage | 15-Oct | 13-Oct | | NOCIF | |
| 14 | Yupercide | Copper hydroxide | w/v | DP | Yufull Industry Company Ltd | Hongkong Goldstar | plastic | 500g | 5 | 1 | intact | Nov-16 | Nov-13 | | NOCIF | |
| 15 | Methomyl | Methomyl | g/kg | DP | NIL | ALM International | plastic | 1Kg | 60 | 1 | intact | Oct-15 | Oct-13 | | NOCIF | |

Annex 4: Tonkolili District Inventory

| N° | Trade name | active ingredient | Nature (In, He, Fo, Dé, Ra,)* | Formulation | manufacturer/supplier | Tonkolili District | | | | | | | | | | |
|----|---------------|------------------------|-------------------------------|-------------|--------------------------------------|--------------------------------|-----------|-----------------------|-----|------------------|----------------------------------|---------------------------|---------------|-------------------------------------|---------------|-----------------------------------|
| | | | | | | name of supplier | Emballage | | | | State (l, F, D) of the packaging | Pesticide already expired | | Pesticide with imminent expiry date | | UN Chemical Hazard Classification |
| | | | | | | | Type | Quantity in container | NO | quantity Kg L | | expiring date | expiring date | date of manufacturing | expiring date | |
| 1 | Mancozane | Mancozebe | g/kg | WP | Shanghai Kelinon Agrochemical CO.Ltd | Tidiane Agriculture Enterprise | Aluminium | 50% | 2 | 1 | Destroyed and contents dispersed | | | 25/9/2013 | 25/9/2016 | NOCIF |
| 2 | Green Muscle | Metarhizium Anisopliae | g/kg | ULV | ALM International | ALM International | Plastic | 1kg | 4 | 1 | intact | | | May-15 | May-17 | Not shown on label |
| 3 | Oxadiazon | Oxadiazon | g/l | EC | NIL | Yagala Enterprise | Plastic | 1L | 151 | 1 | intact | | | May-15 | May-17 | NOCIF |
| 4 | Chlorpyrifos | Chlorpyrifos | k/g | EC | NIL | Yagala Enterprise | Plastic | 1L | 160 | 1 | intact | | | 5/1/2015 | 5/1/2017 | NOCIF |
| 5 | Carbaryl | Carbaryl | g/kg | WP | NIL | Yagala Enterprise | Plastic | 1L | 134 | 1 | intact | | | 5/1/2015 | 5/1/2017 | Toxic |
| 6 | Paraquat | Paraquat | g/l | SL | NIL | Yagala Enterprise | Plastic | 1L | 64 | 1 | intact | | | May-15 | May-17 | NOCIF |
| 7 | Diazinon | Diazinon | g/l | EC | NIL | Yagala Enterprise | Plastic | 1L | 69 | 1 | intact | | | May-15 | May-17 | Toxic |
| 8 | Difenconazole | Difenoconazole | g/l | SC | NIL | Yagala Enterprise | Plastic | 1L | 1 | 1 | intact | Oct-15 | | Oct-13 | | NOCIF |
| 9 | Propanil | Propanil | g/l | EC | NIL | Yagala Enterprise | Plastic | 1Ll | 864 | 1 | intact | Oct-11 | | Oct-09 | | Not shown on label |
| 10 | Yupercide | Copper Hydroxide | g/kg | WP | Yufull Industry Co. Ltd | Hongkong Gold Star Enterprise | Aluminium | 75% | 1 | 1 | Destroyed and contents dispersed | | | Nov-13 | Nov-16 | Harmful |
| 11 | Glyphosate | Glyphosate | g/l | NILL | NIL | Yagala Enterprise | Plastic | 1L | 1 | 1 | intact | | | Aug-14 | Aug-17 | Toxic |

| N° | Trade name | active ingredient | Nature (In, He, Fo, Dé, Ra,)* | Formulation | manufacturer/supplier | Tonkolili District | | | | | | | | | | |
|----|---------------|-------------------|-------------------------------|-------------|-----------------------|-------------------------|-----------|-----------------------|-----|------------------|----------------------------------|---------------------------|-----------------------|-------------------------------------|--------------------|-----------------------------------|
| | | | | | | name of supplier | Emballage | | | | State (I, F, D) of the packaging | Pesticide already expired | | Pesticide with imminent expiry date | | UN Chemical Hazard Classification |
| | | | | | | | Type | Quantity in container | NO | quantity Kg L | | expiring date | date of manufacturing | expiring date | | |
| 12 | Atrazine | Attrazine | g/l | SC | NIL | ALM International | Plastic | 1L | 396 | 1 | intact | Oct-15 | Oct-13 | | NOCIF | |
| 13 | Bio-Pesticide | NILL | g/l | NILL | NIL | Seed Tech International | Plastic | 1L | 2 | 1 | intact | | Aug-14 | Aug-17 | Toxic | |
| 14 | | Empty container | | | | | | | | | | | | | | |
| 15 | Paraquat | Paraquat | | SL | NIL | NIL | Plastic | | 6 | 1 | leakages | | | | NOICF | |
| 16 | Oxadiazon | Oxadiazon | | EC | NIL | NIL | Plastic | | 3 | 1 | residues | | | | NOICF | |
| 17 | Dichlorvos | Dichlorvos | | EC | NIL | NIL | Plastic | | 1 | 1 | residues | | | | Not shown on label | |
| 18 | Atrazine | Attrazine | | SC | NIL | NIL | Plastic | | 1 | 1 | residues | | | | | |
| 19 | Propanil | Propanil | | w/v | NIL | NIL | Plastic | | 1 | 1 | residues | | | | | |
| 20 | Super Extra | 2,4-D Sel d'amine | | w/v | NIL | NIL | Plastic | | 3 | 1 | residues | | | | | |
| 21 | Propanil | Propanil | | EC | NIL | NIL | Plastic | | 29 | 1 | residues | | | | | |
| 22 | Diazinon | Diazinon | | EC | NIL | NIL | Plastic | | 1 | 1 | residues | | | | | |
| 23 | Samo extra | Sel d'amine | | w/v | NIL | NIL | Plastic | | 1 | 1 | residues | | | | | |

Annex 5: Koinadugu District Inventory

| N ^o | Trade name | active ingredients | Nature (In, He, Fo, Dé, Ra,)** | Formulation | manufacturer/supplier | Koinadugu District | | | | | | | | | | | |
|----------------|------------------------------|------------------------|--------------------------------|-------------|-----------------------|-------------------------|-----------|-----------------------|-----|----------|----------------------------------|---------------------------|-----------------------|-------------------------------------|-----------|-----------------------------------|--------------------|
| | | | | | | name of supplier | Emballage | | | | State (I, F, D) of the packaging | Pesticide already expired | | Pesticide with imminent expiry date | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Quantity in container | NO | quantity | | expiring date | date of manufacturing | expiring date | | | |
| | | | | | | | | | | | | | | | Kg | | L |
| 1 | Green Muscle | Metarhizium anisopliae | g/kg | DP | NIL | ALM International | plastic | 75% | 2 | 1 | destroyed & contents dispersed | | | 5/1/2015 | May-17 | not shown on label | |
| 2 | Carbaryl | Carbaryl | g/kg | WP | NIL | Yagal Enterprise | plastic | 500g | 59 | | 1 | intact | | | May-15 | May-17 | toxic |
| 3 | bio pesticide (Green Muscle) | Metarhizium anisopliae | g/L | ULV | NIL | Seed Tech International | plastic | 1L | 2 | 1 | | intact | | | Aug-14 | Aug-17 | toxic |
| 4 | Diazinon | Diazinon | g/L | EC | NIL | Yagala Enterprise | plastic | 1L | 11 | | 1 | intact | | | May-15 | May-17 | toxic |
| 5 | Chlorpyrifos | Chlorpyrifos Ethyl | g/L | EC | NIL | Yagala Enterprise | plastic | 1L | 127 | | 1 | intact | | | May-15 | May-17 | NOCIF |
| 6 | Methomyl | Methomyl | g/kg | WP | NIL | ALM International | plastic | 1L | 57 | 1 | | intact | | Oct-15 | Oct-13 | | NOCIF |
| 7 | Propiconazole | Propiconazole | g/L | EC | NIL | Yagala Enterprise | plastic | 1L | 26 | | 1 | intact | | Oct-15 | Oct-13 | | NOCIF |
| 8 | Paraquat | Paraquat | g/L | SL | NIL | Yagala Enterprise | plastic | 1L | 3 | | 1 | intact | | | May-15 | May-17 | NOCIF |
| 9 | Propanil | Propanil | g/l | EC | NIL | Yagala Enterprise | plastic | 1L | 8 | | 1 | intact | | | May-15 | May-17 | NOICF |
| 10 | Propiconazole | Propiconazole | g/l | EC | NIL | Yagala Enterprises | plastic | 1L | 26 | | 1 | intact | | Oct-15 | Oct-13 | | NOICF |
| 11 | Propanil | Propanil | g/L | EC | NIL | Yagala Enterprise | plastic | 1L | 1 | | 1 | intact | | 10/9/2013 | 10/9/2011 | | not shown on label |
| 12 | Oxadiazon | Oxadiazon | g/l | EC | NIL | ALM International | plastic | 1L | 77 | | 1 | intact | | Nov-15 | Nov-13 | | NOCIF |
| 13 | Atrazine | Atrazine | g/L | SC | NIL | ALM International | plastic | 1L | 399 | | 1 | intact | | Oct-15 | Oct-13 | | NOCIF |

| N ^o | Trade name | active ingredients | Nature (In, He, Fo, Dé, Ra,)** | Formulation | manufacturer/supplier | Koinadugu District | | | | | | | | | | | |
|----------------|----------------|--------------------|--------------------------------|-------------|-----------------------|--------------------|-----------|-----------------------|----|----------|----------------------------------|---------------------------|-----------------------|-------------------------------------|--------|-----------------------------------|-------|
| | | | | | | name of supplier | Emballage | | | | State (I, F, D) of the packaging | Pesticide already expired | | Pesticide with imminent expiry date | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Quantity in container | NO | quantity | | expiring date | date of manufacturing | expiring date | | | |
| | | | | | | | | | | | | | | | Kg | | L |
| 14 | Difenoconazole | Difenoconazole | g/L | SC | NIL | Yagala Enterprise | plastic | 1L | 14 | | 1 | intact | | Oct-15 | Oct-13 | | NOCIF |

DEFINITIVE VERSION

Annex 6: Port Loko District Inventory

| N° | Trade name | active ingredients | Nature (In, He, Fo, Dé, Ra,)** | Formulation | manufacturer/supplier | Port Loko District | | | | | | | | | | |
|----|-------------------|--------------------|--------------------------------|-------------|------------------------|-------------------------------|-----------|-----------------------|-----|------------------|----------------------------------|---------------------------|-----------------------|-------------------------------------|--------------------|-----------------------------------|
| | | | | | | name of supplier | Emballage | | | | State (I, F, D) of the packaging | Pesticide already expired | | Pesticide with imminent expiry date | | UN Chemical Hazard Classification |
| | | | | | | | Type | Quantity in container | NO | quantity Kg L | | expiring date | date of manufacturing | expiring date | | |
| 1 | Atrazine | Atrazine | g/l | SC | Nil | ALM International | Plastic | 1L | 354 | 1 | Intact | Oct-15 | Oct-13 | | NOCIF | |
| 2 | Propiconazole | Propiconazole | g/l | EC | Nil | Yagala Enterprises | Plastic | 1L | 1 | 1 | Intact | Oct-15 | Oct-13 | | NOCIF | |
| 3 | Difenconazole | Difenoconazole | g/l | SC | Nil | Yagala Enterprises | Plastic | 1L | 26 | 1 | Intact | Oct-15 | Oct-13 | | NOCIF | |
| 4 | Diazinon | Dizonon | g/l | EC | Nil | Yagala Enterprises | Plastic | 1L | 100 | 1 | Intact | | 5/1/2015 | 5/1/2017 | TOXIC | |
| 5 | Round-All (Koola) | Elyphosate | g/l | SL | Yufull Industry co.Ltd | Hongkong Gold Star Enterprise | Plastic | 1L | 34 | 1 | Intact | | Nov-13 | Nov-16 | not shown on label | |
| 6 | Glyphosate | Glyphosate | g/l | Nil | Nil | Seed-Tech International | Plastic | 1L | 2 | 1 | Intact | | Aug-14 | Aug-17 | TOXIC | |
| 7 | Paraquat | Paraquat | g/l | SL | Nil | ALM International | Plastic | 1L | 68 | 1 | Intact | Oct-15 | Oct-13 | | NOCIF | |
| 8 | Yuper Star | Propanil | g/l | NIL | Yufull Industry co.Ltd | Hongkong Gold Star Enterprise | Plastic | 1L | 2 | 1 | Intact | | Nov-13 | Nov-16 | not shown on label | |
| 9 | Chlorpyrifos | Chlorpyrifos Ethyl | g/l | EC | Nil | Yagala Enterprises | Plastic | 1L | 254 | 1 | Intact | | May-15 | May-17 | NOCIF | |

| N° | Trade name | active ingredients | Nature (In, He, Fo, Dé, Ra,)** | Formulation | manufacturer/supplier | Port Loko District | | | | | | | | | | |
|----|--------------|------------------------|--------------------------------|-------------|---------------------------------|-------------------------------|-----------|-----------------------|-----|-----------------|----------------------------------|---------------------------|-----------------------|-------------------------------------|-----------|-----------------------------------|
| | | | | | | name of supplier | Emballage | | | | State (I, F, D) of the packaging | Pesticide already expired | | Pesticide with imminent expiry date | | UN Chemical Hazard Classification |
| | | | | | | | Type | Quantity in container | NO | quantity K L | | expiring date | date of manufacturing | expiring date | | |
| 10 | Oxadiazon | Oxadiazon | g/l | EC | Nil | Yagala Enterprises | Plastic | 1L | 173 | 1 | Intact | | | May-15 | May-17 | NOCIF |
| 11 | Methomyl | ethomyl | g/kg | WP | Nil | ALM International | Plastic | 500g | 70 | 1 | Intact | Oct-15 | | Oct-13 | | NOCIF |
| 12 | Carbaryl | Carbaryl | g/kg | WP | Nil | Yagala Enterprises | Plastic | 1kg | 130 | 1 | Intact | | | May-15 | May-17 | TOXIC |
| 13 | Yupercide | Copper Hydroxide | g/kg | WP | Yufull Industry co.Ltd | Hongkong Gold Star Enterprise | Aluminum | 1kg | 1 | 1 | Intact | | | 1/11/2013 | 1/11/2016 | not shown on label |
| 14 | Green Muscle | Metarhizum anisopliate | g/kg | ULV | ALM International | ALM International | Plastic | 1kg | 3 | 1 | Intact | | | 5/5/2015 | 5/5/2017 | not shown on label |
| 15 | Mancozane | Mancozebe | g/kg | WP | Shanghai Kelinon Agro Chemicals | Enterprise Tidane Agriculture | Aluminum | 1kg | 3 | 1 | Intact | | | 23/9/2013 | 23/9/2016 | NOCIF |

5.6.4 Eastern Province

Annex 7: Kenema District Inventory

| no | trade name | active ingredients | Nature (In, He, Fo, Dé, Ra,)* | Formulation | manufacturer/ supplier | Kenema district/ SIERRA LEONE | | | | | | | | | | |
|----|----------------|--------------------|-------------------------------|-----------------|------------------------|-------------------------------|-----------|-----------------------|-----|------------------|----------------------------------|---------------------------|-----------------------|-------------------------------------|------------------------|-----------------------------------|
| | | | | | | name of supplier | Emballage | | | | State (I, F, D) of the packaging | Pesticide already expired | | Pesticide with imminent expiry date | | UN Chemical Hazard Classification |
| | | | | | | | Type | Quantity in container | NO | quantity Kg L | | expiring date | date of manufacturing | expiring date | | |
| 1 | Methyl Eugenol | Methyl Anisopliae | g/kg | nil | nil | Yagal Enterprise | plastic | 1L | 1 | 5 | intact | 10/9/2013 | 10/9/2010 | | not shown on the label | |
| 2 | Glyphosate | Glyphosphate | g/l | nil | nil | Yagal Enterprise | plastic | 1L | 24 | 1 | intact | 10/9/2013 | 10/9/2011 | | not shown on the label | |
| 3 | Kocide | Kocide | g/kg | nil | nil | Yagal Enterprise | plastic | 500g | 6 | 1 | destroyed & contents dispersed | 10/8/2011 | 10/8/2009 | | not shown on the label | |
| 4 | Propiconazole | Propiconazole | g/l | nil | nil | Yagal Enterprise | plastic | 1L | 3 | 1 | intact | Oct-15 | Oct-13 | | nocif | |
| 5 | Methomyl | Methomyl | g/kg | nil | nil | Alm International | plastic | 1kg | 12 | 1 | intact | Oct-15 | Oct-13 | | nocif | |
| 6 | Propanil | Propanil | g/l | nil | nil | Yagala Enterprise | plastic | 1L | 70 | 1 | intact | 10/8/2011 | 10/8/2009 | | nocif | |
| 7 | Paraquat | Paraquat | g/l | nil | nil | Alm International | plastic | 1L | 84 | 1 | intact | Oct-15 | Oct-13 | | nocif | |
| 8 | Difenoconazole | Difenoconazole | g/l | nil | Alm international | Yagala Enterprise | plastic | 1L | 12 | 1 | intact | Oct-15 | Oct-13 | | nocif | |
| 9 | Atrazine | Atrazine | g/l | nil | Alm international | Alm international | plastic | 1L | 387 | 1 | intact | Oct-15 | Oct-13 | | nocif | |
| 10 | Oxadiazon | Oxadiazon | g/l | nil | nil | Yagala Enterprise | plastic | 1L | 8 | 1 | intact | Nov-15 | Nov-13 | | noicf | |
| 11 | | | | Empty Container | | | | | | | | | | | | |
| 12 | bio pesticide | Methyl anisopliae | NIL | NIL | NIL | NIL | plastic | NIL | 2 | 1 | NIL | | NIL | NIL | Toxic | |

DEFINITIVE VERSION

Annex 8: Kono District Inventory

| N° | Trade name | active ingredients | Nature (In, He, Fo, Dé, Ra,)* * | Formulation | manufacturer/ supplier | Kono District /SIERRA LEONE | | | | | | | | | | |
|----|--------------------------------|--------------------|---------------------------------|-------------|---------------------------|-------------------------------|-----------|-----------------------|-----|------------------|----------------------------------|----------------------------|-------------------------------------|-----------------------|-----------------------------------|---------------|
| | | | | | | name of supplier | Emballage | | | | State (I, F, D) of the packaging | Pesticide already expired | Pesticide with imminent expiry date | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Quantity in container | NO | quantity Kg L | | | expiring date | date of manufacturing | | expiring date |
| 1 | Diazinon | Diazinon | g/l | EC | Nil | Yagala Enterprises | plastic | 1L | 26 | | 1 | Intact | | May-15 | May-17 | Toxic |
| 2 | Atrazine | Atrazine | g/l | SC | Nil | ALM International | plastic | 1L | 534 | | 1 | Intact | Oct-15 | Oct-13 | | NOCIF |
| 3 | Oxadiazon | Oxadiazon | g/l | EC | Nil | Yagala Enterprises | plastic | 1L | 58 | | 1 | Intact | | May-15 | May-17 | NOCIF |
| 4 | Kocide | Kocide | w/w | DP | Nil | Yagala Enterprises | plastic | 1L | 20 | | 1 | Intact | 10/8/2011 | 10/8/2009 | | Nil |
| 5 | Butachlor | Butachlor | g/l | EC | Nil | Seed-Tech International | plastic | 1L | 69 | | 1 | Intact | | Aug-14 | Aug-17 | Toxic |
| 6 | Propanil | Propanil | g/l | EC | Nil | Yagala Enterprises | plastic | 1L | 24 | | 1 | Intact | | May-15 | May-17 | NOCIF |
| 7 | Chlorpyrifos | Chlorpyrifos Ethyl | g/l | EC | Nil | Yagala Enterprises | plastic | 1L | 60 | | 1 | Intact | | May-15 | May-17 | NOCIF |
| 8 | Paraquat | Paraquat | g/l | SL | Nil | Yagala Enterprises | plastic | 1L | 33 | | 1 | Intact | | May-15 | May-17 | NOCIF |
| 9 | Bio-Pesticides (Green Mouscle) | Nil | nil | ULV | Nil | Seed-Tech International | plastic | 75% | 2 | | 1 | some damage but no leakage | | Aug-14 | Aug-17 | Toxic |
| 10 | Yuperstar | Propinil | g/l | EC | Yufull Industries Co. Ltd | Hongkong Gold Star Enterprise | plastic | 1L | 42 | | 1 | Intact | Nov-16 | Nov-13 | | NOCIF |
| 11 | Carbaryl | Carbaryl | g/kg | DP | Nil | Yagala Enterprises | plastic | 1L | 151 | | 1 | Intact | | May-15 | May-17 | Toxic |

| | | | | | | | | | | | | | | | | |
|--------|----------------|----------------|-----|----|-----|--------------------------------------|--------------|----|---------|---|---|--------|---------------|-----------|--|-----------------------|
| 1 2 | Mancozeb e | Mancozeb e | nil | WP | Nil | Enterprise Tidiane Agriculture | Aluminu m | 1L | 2 | 1 | | Intact | 25/9/20 16 | 25/9/2013 | | NOCIF |
| 1 3 | Propanil | Propanil | w/v | EC | Nil | Yagala Enterpris s | plastic | 1L | 60 5 | | 1 | Intact | 10/8/20 11 | 10/8/2009 | | not shown on label |
| 1 4 | Glyphosat e | Glyphosat e | w/w | SL | Nil | Yagala Enterpris s | plastic | 1L | 1 | | 1 | Intact | 10/9/20 13 | 10/9/2011 | | not shown on label |

DEFINITIVE VERSION

Annex 9: Kailahun District Inventory

| no | trade name | active ingredients | Nature (In, He, Fo, Dé, Ra,)* * | Formulation | manufacturer/supplier | Kailahun District/ SIERRA LEONE | | | | | | | | | | | |
|----|----------------|------------------------|------------------------------------|-------------|-----------------------------|---------------------------------|-----------|-----------------------|-----|-----------------|----------------------------------|---------------------------|---------------|-------------------------------------|---------------|-----------------------------------|--------------------|
| | | | | | | name of supplier | Emballage | | | | State (I, F, D) of the packaging | Pesticide already expired | | Pesticide with imminent expiry date | | UN Chemical Hazard Classification | |
| | | | | | | | Type | Quantity in container | NO | quantity K L | | expiring date | expiring date | date of manufacturing | expiring date | | |
| 1 | Propanil | Propanil | g/l | EC | nil | Yagala Enterprise | plastic | 1L | 4 | | 1 | intact | | | 5/1/2015 | May-17 | nocif |
| 2 | Diazinon | Diazinon | g/l | EC | nil | Yagala Enterprise | plastic | 1L | 100 | | 1 | intact | | | May-15 | May-17 | toxic |
| 3 | Chlorpyrifos | Chlorpyrifos ethyl | g/l | EC | nil | Yagala Enterprise | plastic | 1L | 109 | | 1 | intact | | | May-15 | May-17 | harmful |
| 4 | Green Muscle | Metarhizium anisoplate | g/kg | nil | nil | ALM International | plastic | 1L | 3 | 1 | | intact | | | May-15 | May-17 | not shown on label |
| 5 | Kocide 101 | Cypric hydroxide | g/kg | WP | kocide Chemical Corporation | nil | aluminum | 500g | 180 | 0.5 | | intact | | | n/a | n/a | not shown on label |
| 6 | Oxadiazon | Oxadiazon | g/l | EC | nil | ALM International | plastic | 1L | 72 | | 1 | intact | | | May-15 | May-17 | NOCIF |
| 7 | Carbaryl | Carbaryl | g/kg | WP | nil | Yagala Enterprise | aluminum | 1L | 64 | 1 | | intact | | | May-15 | May-17 | toxic |
| 8 | Mancozane | Mancozebe | g/kg | WP | nil | Enterprise Tidiane Agriculture | aluminum | 1L | 7 | 1 | | intact | | | 25/9/2013 | 25/9/2016 | nocif |
| 9 | Methyl Eugenol | Methyl eugenol | g/l | ULV | nil | ALM International | plastic | 1L | 1 | | 5 | intact | | | not readable | not readable | nocif |
| 10 | Atrazine | Atrazine | g/l | SC | nil | ALM International | plastic | 1L | 54 | | 1 | intact | Oct-15 | | Oct-13 | | nocif |
| 11 | Yupercide | Copper hydroxide | g/kg | WP | Yufull Industry Co.Ltd | Hongkong Gold Star Enterprise | aluminum | 75% | 2 | 1 | | intact | 11/1/2016 | | 11/1/2013 | | nocif |
| 12 | Methomyl | Methomyl | g/kg | WP | nil | Alm International | aluminum | 1kg | 34 | 1 | | intact | Oct-15 | | Oct-13 | | nocif |

Annex 10: Screen Shots of completed forms for all sites visited.

A. Western Area (Freetown)

- A1. MAFFS Store
- A2. Tjal Stores
- A3. MoHS Entomology

B. Northern Province

- B1. Bombali District
- B2. Koinadugu District
- B3. Tonkolili District
- B4. Port Loko District

C. Southern Province

- C1. Bo District
- C2. Bonthe District
- C3, Moyamba District
- C4 : Pujehun District

D. Eastern Province

- D1. Kailahun District
- D2. Kenema District
- D3. Kono District

11. References

1. The National Implementation Plan for the Stockholm Convention in Sierra Leone 2008
2. Various Policies, regulations and guidelines related to pesticides management in Sierra Leone
3. The Agenda for Prosperity vision 2035
4. World Bank Economic Analysis Report for Sierra Leone 2015
5. Sierra Leone Demographic Survey report 2016
6. State of the Environment report 2016
7. Integrated Waste management Policy of Sierra Leone 2016